# Show Commands

This chapter describes the Cisco NX-OS Ethernet **show** commands.

# show cdp all

To display the interfaces in the Cisco Discovery Protocol (CDP) database, use the **show cdp all** command.

**show cdp all**

## Syntax Description

This command has no arguments or keywords.

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the interfaces in the CDP database:

```
switch# show cdp all
mgmt0 is up
    CDP enabled on interface
    Refresh time is 60 seconds
    Hold time is 180 seconds
Ethernet1/1 is down
    CDP enabled on interface
    Refresh time is 60 seconds
    Hold time is 180 seconds
Ethernet1/2 is down
    CDP enabled on interface
    Refresh time is 60 seconds
    Hold time is 180 seconds
Ethernet1/3 is down
    CDP enabled on interface
    Refresh time is 60 seconds
    Hold time is 180 seconds
Ethernet1/4 is down
    CDP enabled on interface
    Refresh time is 60 seconds
    Hold time is 180 seconds
Ethernet1/5 is down
    CDP enabled on interface
    Refresh time is 60 seconds
    Hold time is 180 seconds
Ethernet1/6 is down
    CDP enabled on interface
    Refresh time is 60 seconds
    Hold time is 180 seconds
<--Output truncated-->
switch#
```

**Related Commands**

| Command | Description |
|---|---|
| **cdp** | Enables CDP on the switch. |

# show cdp entry

To display the interfaces in the Cisco Discovery Protocol (CDP) database, use the **show cdp entry** command.

**show cdp entry** {**all** | **name** *device-name*}

## Syntax Description

| | |
|---|---|
| **all** | Displays all interfaces in the CDP database. |
| **name** *device-name* | Displays a specific CDP entry matching a name. The device name can be a maximum of 256 alphanumeric characters. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display all the entries in the CDP database:

```
switch# show cdp entry all

----------------------------------------
Device ID:sw-sw70

Interface address(es):
    IPv4 Address: 192.0.2.70
Platform: WS-C3560E-48T, Capabilities: Switch IGMP Filtering
Interface: mgmt0, Port ID (outgoing port): GigabitEthernet0/30
Holdtime: 162 sec

Version:
Cisco IOS Software, C3560E Software (C3560E-UNIVERSALK9-M), Version 12.2(50)SE2,
 RELEASE SOFTWARE (fc2)
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Compiled Fri 15-May-09 22:11 by nachen

Advertisement Version: 2

Native VLAN: 88
Duplex: full
Mgmt address(es):
    IPv4 Address: 192.0.2.70
----------------------------------------
Device ID:switch(FOC16333ZER)
System Name: switch

Interface address(es):
    IPv4 Address: 192.0.2.192
Platform: N6K-C6004-96Q, Capabilities: Switch IGMP Filtering Supports-STP-Disput
```

```
e
Interface: Ethernet1/4, Port ID (outgoing port): Ethernet1/12
Holdtime: 125 sec

Version:
Cisco Nexus Operating System (NX-OS) Software, Version 6.0(2)N1(1)

Advertisement Version: 2

Native VLAN: 1
Duplex: full

MTU: 1500
Physical Location: snmplocation
Mgmt address(es):
    IPv4 Address: 192.0.2.192
----------------------------------------
Device ID:switch(FOC16333ZER)
System Name: switch

Interface address(es):
    IPv4 Address: 192.0.2.192
Platform: N6K-C6004-96Q, Capabilities: Switch IGMP Filtering Supports-STP-Disput
e
Interface: Ethernet1/6, Port ID (outgoing port): Ethernet1/10
Holdtime: 131 sec

Version:
Cisco Nexus Operating System (NX-OS) Software, Version 6.0(2)N1(1)

Advertisement Version: 2

Native VLAN: 1
Duplex: full

MTU: 1500
Physical Location: snmplocation
Mgmt address(es):
    IPv4 Address: 192.0.2.192
----------------------------------------
Device ID:switch(FOC16333ZER)
System Name: switch

Interface address(es):
    IPv4 Address: 192.0.2.192
Platform: N6K-C6004-96Q, Capabilities: Switch IGMP Filtering Supports-STP-Disput
e
Interface: Ethernet1/10, Port ID (outgoing port): Ethernet1/6
Holdtime: 132 sec

Version:
Cisco Nexus Operating System (NX-OS) Software, Version 6.0(2)N1(1)

Advertisement Version: 2

Native VLAN: 1
Duplex: full

MTU: 1500
Physical Location: snmplocation
Mgmt address(es):
    IPv4 Address: 192.0.2.192
----------------------------------------
Device ID:switch(FOC16333ZER)
```

```
System Name: switch

Interface address(es):
    IPv4 Address: 192.0.2.192
Platform: N6K-C6004-96Q, Capabilities: Switch IGMP Filtering Supports-STP-Disput
e
Interface: Ethernet1/12, Port ID (outgoing port): Ethernet1/4
Holdtime: 125 sec

Version:
Cisco Nexus Operating System (NX-OS) Software, Version 6.0(2)N1(1)

Advertisement Version: 2

Native VLAN: 1
Duplex: full

MTU: 1500
Physical Location: snmplocation
Mgmt address(es):
    IPv4 Address: 192.0.2.192
switch#
```

This example shows how to display a specific entry from the CDP database:

```
switch# show cdp entry name swor95(SSI13110AAS)
----------------------------------------
Device ID:swor95(SSI13110AAS)
System Name:swor95
Interface address(es):
    IPv4 Address: 192.0.2.95
Platform: N5K-C5010P-BF, Capabilities: Switch IGMP Filtering Supports-STP-Dispute
Interface: Ethernet1/29, Port ID (outgoing port): Ethernet1/19
Holdtime: 173 sec

Version:
Cisco Nexus Operating System (NX-OS) Software, Version 6.0(2)N1(1)

Advertisement Version: 2
Native VLAN: 1
Duplex: full
Physical Location: snmplocation
Mgmt address(es):
    IPv4 Address: 192.0.2.95

switch#
```

## Related Commands

| Command | Description |
|---|---|
| **cdp** | Enables CDP on the switch. |

# show cdp global

To display the Cisco Discovery Protocol (CDP) global parameters, use the **show cdp global** command.

**show cdp global**

## Syntax Description

This command has no arguments or keywords.

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the CDP global parameters:

```
switch# show cdp global
Global CDP information:
    CDP enabled globally
    Refresh time is 60 seconds
    Hold time is 180 seconds
    CDPv2 advertisements is enabled
    DeviceID TLV in System-Name(Default) Format
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **cdp** | Enables CDP on the switch. |

# show cdp interface

To display the Cisco Discovery Protocol (CDP) parameters for an interface, use the **show cdp interface** command.

**show cdp interface** {**ethernet** *slot*/[*QSFP-module*/]*port* | **mgmt** *mgmt-num*}

## Syntax Description

| | |
|---|---|
| **ethernet** *slot*/[*QSFP-module*/]*port* | Specifies an Ethernet interface. The *slot* number is from 1 to 255. The *QSFP-module* number is from 1 to 4. The *port* number is from 1 to 128.<br>**Note** The *QSFP-module* number applies only to the QSFP+ Generic Expansion Module (GEM). |
| **mgmt** *mgmt-num* | Specifies a management interface. The management interface number is 0. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 6.0(2)N1(1) | Support for the QSFP+ GEM was added. |
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the CDP parameters for an Ethernet interface:

```
switch# show cdp interface ethernet 1/30
Ethernet1/30 is down
    CDP enabled on interface
    Refresh time is 60 seconds
    Hold time is 180 seconds
switch#
```

This example shows how to display the CDP parameters for a management interface:

```
switch# show cdp interface mgmt 0
mgmt0 is up
    CDP enabled on interface
    Refresh time is 60 seconds
    Hold time is 180 seconds
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **cdp** | Enables CDP on the switch. |

# show cdp neighbors

To display the Cisco Discovery Protocol (CDP) neighbors, use the **show cdp neighbors** command.

**show cdp neighbors** [**interface** {**ethernet** *slot*/[*QSFP-module*/]*port* | **mgmt** *mgmt-num*}] [**detail**]

## Syntax Description

| | |
|---|---|
| **interface** | (Optional) Displays CDP neighbor information for an interface, Ethernet or management. |
| **ethernet** *slot*/[*QSFP-module*/]*port* | (Optional) Displays CDP neighbor information for an Ethernet interface. The *slot* number is from 1 to 255. The *QSFP-module* number is from 1 to 4. The *port* number is from 1 to 128.<br>**Note** The *QSFP-module* number applies only to the QSFP+ Generic Expansion Module (GEM). |
| **mgmt** *mgmt-num* | (Optional) Displays CDP neighbor information for a management interface. The management interface number is 0. |
| **detail** | (Optional) Displays the detailed information about CDP neighbors. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 6.0(2)N1(1) | Support for the QSFP+ GEM was added. |
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display all CDP neighbors:

```
switch# show cdp neighbors
Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater,
                  V - VoIP-Phone, D - Remotely-Managed-Device,
                  s - Supports-STP-Dispute


Device-ID            Local Intrfce Hldtme Capability  Platform      Port ID
sw-sw70            mgmt0          145    S I       WS-C3560E-48T Gig0/30
switch(FOC16333ZER)
                   Eth1/4         169    S I s     N6K-C6004-96Q Eth1/12
switch(FOC16333ZER)
                   Eth1/6         173    S I s     N6K-C6004-96Q Eth1/10
switch(FOC16333ZER)
                   Eth1/10        175    S I s     N6K-C6004-96Q Eth1/6
switch(FOC16333ZER)
                   Eth1/12        169    S I s     N6K-C6004-96Q Eth1/4
switch#
```

This example shows how to display the CDP neighbors for a specific Ethernet interface:

```
switch# show cdp neighbors interface ethernet 1/29
Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater,
                  V - VoIP-Phone, D - Remotely-Managed-Device,
                  s - Supports-STP-Dispute, M - Two-port Mac Relay


Device ID              Local Intrfce   Hldtme  Capability  Platform      Port ID
swor95(SSI13110AAS)    Eth1/29         146     S I s       N5K-C5010P-BF Eth1/19

switch#
```

This example shows how to display the detailed information of the CDP neighbors for a specific Ethernet interface:

```
switch# show cdp neighbors interface ethernet 1/29 detail
----------------------------------------
Device ID:swor95(SSI13110AAS)
System Name:swor95
Interface address(es):
    IPv4 Address: 192.0.2.95
Platform: N5K-C5010P-BF, Capabilities: Switch IGMP Filtering Supports-STP-Disput
e
Interface: Ethernet1/29, Port ID (outgoing port): Ethernet1/19
Holdtime: 141 sec

Version:
Cisco Nexus Operating System (NX-OS) Software, Version 5.0(3)N2(1)

Advertisement Version: 2
Native VLAN: 1
Duplex: full
Physical Location: snmplocation
Mgmt address(es):
    IPv4 Address: 192.0.2.95

switch#
```

This example shows how to display the CDP neighbors for the management interface:

```
switch# show cdp neighbors interface mgmt 0
Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater,
                  V - VoIP-Phone, D - Remotely-Managed-Device,
                  s - Supports-STP-Dispute


Device-ID             Local Intrfce Hldtme Capability  Platform      Port ID
sw-sw70             mgmt0          159    S I       N6K-C6004-96Q    Gig0/30
switch#
```

This example shows how to display the detailed information of the CDP neighbors for the management interface:

```
switch# show cdp neighbors interface mgmt 0 detail
----------------------------------------
Device ID:sw-sw70
System Name:
Interface address(es):
    IPv4 Address: 192.0.2.70
Platform: cisco N6K-C6004-96Q, Capabilities: Switch IGMP Filtering
Interface: mgmt0, Port ID (outgoing port): GigabitEthernet0/30
Holdtime: 179 sec
```

```
Version:
Cisco IOS Software, C3560E Software (C3560E-UNIVERSALK9-M), Version 12.2(50)SE2,
 RELEASE SOFTWARE (fc2)
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Compiled Fri 15-May-09 22:11 by nachen

Advertisement Version: 2
Native VLAN: 88
VTP Management Domain:
Duplex: full
Mgmt address(es):
    IPv4 Address: 192.0.2.70

switch#
```

This example shows how to display the detailed information of all CDP neighbors:

```
switch# show cdp neighbors detail

----------------------------------------
Device ID:sw-sw70
VTP Management Domain Name:

Interface address(es):
    IPv4 Address: 192.0.2.70
Platform: WS-C3560E-48T, Capabilities: Switch IGMP Filtering
Interface: mgmt0, Port ID (outgoing port): GigabitEthernet0/30
Holdtime: 151 sec

Version:
Cisco IOS Software, C3560E Software (C3560E-UNIVERSALK9-M), Version 12.2(50)SE2, RELEASE
SOFTWARE (fc2)
Copyright (c) 1986-2009 by Cisco Systems, Inc.
Compiled Fri 15-May-09 22:11 by nachen

Advertisement Version: 2

Native VLAN: 88
Duplex: full
Mgmt address(es):
    IPv4 Address: 192.0.2.70
----------------------------------------
Device ID:switch(FOC16333ZER)
System Name: switch

Interface address(es):
    IPv4 Address: 192.0.2.192
Platform: N6K-C6004-96Q, Capabilities: Switch IGMP Filtering Supports-STP-Dispute
Interface: Ethernet1/4, Port ID (outgoing port): Ethernet1/12
Holdtime: 174 sec

Version:
Cisco Nexus Operating System (NX-OS) Software, Version 6.0(2)N1(1)

Advertisement Version: 2

Native VLAN: 1
Duplex: full

MTU: 1500
Physical Location: snmplocation
Mgmt address(es):
    IPv4 Address: 192.0.2.192
----------------------------------------
```

```
Device ID:switch(FOC16333ZER)
System Name: switch

Interface address(es):
    IPv4 Address: 192.0.2.192
Platform: N6K-C6004-96Q, Capabilities: Switch IGMP Filtering Supports-STP-Dispute
Interface: Ethernet1/6, Port ID (outgoing port): Ethernet1/10
Holdtime: 179 sec

Version:
Cisco Nexus Operating System (NX-OS) Software, Version 6.0(2)N1(1)

Advertisement Version: 2

Native VLAN: 1
Duplex: full

MTU: 1500
Physical Location: snmplocation
Mgmt address(es):
    IPv4 Address: 192.0.2.192
----------------------------------------
Device ID:switch(FOC16333ZER)
System Name: switch

Interface address(es):
    IPv4 Address: 192.0.2.192
Platform: N6K-C6004-96Q, Capabilities: Switch IGMP Filtering Supports-STP-Dispute
Interface: Ethernet1/10, Port ID (outgoing port): Ethernet1/6
Holdtime: 120 sec

Version:
Cisco Nexus Operating System (NX-OS) Software, Version 6.0(2)N1(1)

Advertisement Version: 2

Native VLAN: 1
Duplex: full

MTU: 1500
Physical Location: snmplocation
Mgmt address(es):
    IPv4 Address: 192.0.2.192
----------------------------------------
Device ID:switch(FOC16333ZER)
System Name: switch

Interface address(es):
    IPv4 Address: 192.0.2.192
Platform: N6K-C6004-96Q, Capabilities: Switch IGMP Filtering Supports-STP-Dispute
Interface: Ethernet1/12, Port ID (outgoing port): Ethernet1/4
Holdtime: 174 sec

Version:
Cisco Nexus Operating System (NX-OS) Software, Version 6.0(2)N1(1)

Advertisement Version: 2

Native VLAN: 1
Duplex: full

MTU: 1500
Physical Location: snmplocation
Mgmt address(es):
```

```
    IPv4 Address: 192.0.2.192
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **cdp** | Enables CDP on the switch. |

# show cdp traffic

To display the Cisco Discovery Protocol (CDP) traffic statistics, use the **show cdp traffic** command.

**show cdp traffic interface** {**ethernet** *slot*/[*QSFP-module*/]*port* | **mgmt** *mgmt-num*}}

## Syntax Description

| | |
|---|---|
| **interface** | Displays CDP traffic statistics for an interface, Ethernet or management. |
| **ethernet** *slot*/[*QSFP-module*/]*port* | Displays CDP traffic statistics for an Ethernet interface. The *slot* number is from 1 to 255. The *QSFP-module* number is from 1 to 4. The *port* number is from 1 to 128.<br>**Note** The *QSFP-module* number applies only to the QSFP+ Generic Expansion Module (GEM). |
| **mgmt** *mgmt-num* | Displays CDP traffic statistics for a management interface. The management interface number is 0. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 6.0(2)N1(1) | Support for the QSFP+ GEM was added. |
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the CDP traffic statistics for an Ethernet interface:

```
switch# show cdp traffic interface ethernet 1/29
----------------------------------------
Traffic statistics for Ethernet1/29
Input Statistics:
    Total Packets: 3203
    Valid CDP Packets: 3203
        CDP v1 Packets: 0
        CDP v2 Packets: 3203
    Invalid CDP Packets: 0
        Unsupported Version: 0
        Checksum Errors: 0
        Malformed Packets: 0

Output Statistics:
    Total Packets: 3203
        CDP v1 Packets: 0
        CDP v2 Packets: 3203
    Send Errors: 0

switch#
```

This example shows how to display CDP traffic statistics for a management interface:

```
switch# show cdp traffic interface mgmt 0
----------------------------------------
Traffic statistics for mgmt0
Input Statistics:
    Total Packets: 3201
    Valid CDP Packets: 3201
        CDP v1 Packets: 0
        CDP v2 Packets: 3201
    Invalid CDP Packets: 0
        Unsupported Version: 0
        Checksum Errors: 0
        Malformed Packets: 0

Output Statistics:
    Total Packets: 3201
        CDP v1 Packets: 0
        CDP v2 Packets: 3201
    Send Errors: 0

switch#
```

## Related Commands

| Command | Description |
|---|---|
| **cdp** | Enables CDP on the switch. |

# show interface brief

To display a brief summary of the interface configuration information, use the **show interface brief** command.

**show interface brief**

## Syntax Description

This command has no arguments or keywords.

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the summary configuration information of the specified interface:

```
switch# show interface brief

--------------------------------------------------------------------------------
Ethernet      VLAN    Type Mode   Status  Reason                   Speed     Port
Interface                                                                    Ch #
--------------------------------------------------------------------------------
Eth1/1        1       eth  access down    SFP not inserted           40G(D) --
Eth1/2        1       eth  access down    SFP not inserted           40G(D) --
Eth1/3        1       eth  access down    SFP not inserted           40G(D) --
Eth1/4        1       eth  access up      none                       40G(D) --
Eth1/5        1       eth  access down    SFP not inserted           40G(D) --
Eth1/6        1       eth  access up      none                       40G(D) --
Eth1/7        1       eth  access down    SFP not inserted           40G(D) --
Eth1/8        1       eth  access down    SFP not inserted           40G(D) --
Eth1/9        1       eth  access down    SFP not inserted           40G(D) --
Eth1/10       1       eth  access up      none                       40G(D) --
Eth1/11       1       eth  access down    SFP not inserted           40G(D) --
Eth1/12       1       eth  access up      none                       40G(D) --
Eth5/1        1       eth  access down    Link not connected         40G(D) --
Eth5/2        1       eth  access down    SFP not inserted           40G(D) --
Eth5/3        1       eth  access down    SFP not inserted           40G(D) --
Eth5/4        1       eth  access down    SFP not inserted           40G(D) --
Eth5/5        1       eth  access down    SFP not inserted           40G(D) --
Eth5/6        1       eth  access down    SFP not inserted           40G(D) --
Eth5/7        1       eth  access down    SFP not inserted          40G(D) --
Eth5/8        1       eth  access down    SFP not inserted          40G(D) --
Eth5/9        1       eth  access down    SFP not inserted           40G(D) --
Eth5/10       1       eth  access down    SFP not inserted           40G(D) --
Eth5/11       1       eth  access down    SFP not inserted           40G(D) --
Eth5/12       1       eth  access down    SFP not inserted           40G(D) --
Eth6/1        1       eth  access down    SFP not inserted           40G(D) --
Eth6/2        1       eth  access down    SFP not inserted           40G(D) --
Eth6/3        1       eth  access down    SFP not inserted           40G(D) --
```

```
Eth6/4        1       eth  access down    SFP not inserted           40G(D) --
Eth6/5        1       eth  access down    SFP not inserted           40G(D) --
Eth6/6        1       eth  access down    SFP not inserted           40G(D) --
Eth6/7        1       eth  access down    SFP not inserted           40G(D) --
Eth6/8        1       eth  access down    SFP not inserted           40G(D) --
Eth6/9        1       eth  access down    SFP not inserted           40G(D) --
Eth6/10       1       eth  access down    SFP not inserted           40G(D) --
Eth6/11       1       eth  access down    SFP not inserted           40G(D) --
Eth6/12       1       eth  access down    SFP not inserted           40G(D) --
Eth8/1        1       eth  access down    SFP not inserted           40G(D) --
Eth8/2        1       eth  access down    SFP not inserted           40G(D) --
Eth8/3        1       eth  access down    SFP not inserted           40G(D) --
Eth8/4        1       eth  access down    Link not connected         40G(D) --
Eth8/5        1       eth  access down    SFP not inserted           40G(D) --
Eth8/6        1       eth  access down    SFP not inserted           40G(D) --
Eth8/7        1       eth  access down    SFP not inserted           40G(D) --
Eth8/8        1       eth  access down    SFP not inserted           40G(D) --
Eth8/9        1       eth  access down    SFP not inserted           40G(D) --
Eth8/10       1       eth  access down    SFP not inserted           40G(D) --
Eth8/11       1       eth  access down    SFP not inserted           40G(D) --
Eth8/12       1       eth  access down    SFP not inserted           40G(D) --

--------------------------------------------------------------------------------
Port   VRF          Status IP Address                              Speed    MTU
--------------------------------------------------------------------------------
mgmt0  --           up 192.0.2.192                                 1000     1500
switch#
```

This example shows how to display the summary configuration information of interfaces, including routed interfaces:

```
switch# show interface brief

--------------------------------------------------------------------------------
Ethernet      VLAN   Type Mode   Status  Reason                   Speed     Port
Interface                                                                   Ch #
--------------------------------------------------------------------------------
Eth1/1        1      eth  access down    Link not connected         10G(D) --
Eth1/2        1      eth  trunk  up      none                       10G(D) --
Eth1/3        1      eth  access down    SFP not inserted           10G(D) --
Eth1/4        1      eth  access down    SFP not inserted           10G(D) --
Eth1/5        --     eth  routed up      none                       10G(D) --
Eth1/5.2      --     eth  routed down    Configuration Incomplete   10G(D) --
Eth1/6        1      eth  access up      none                       10G(D) --
Eth1/7        1      eth  access up      none                       10G(D) --
Eth1/8        1      eth  trunk  up      none                       10G(D) 100
Eth1/9        1      eth  access up      none                       10G(D) --
Eth1/10       1      eth  access down    Link not connected         10G(D) --
Eth1/11       1      eth  access down    SFP not inserted           10G(D) --
Eth1/12       1      eth  access down    SFP not inserted           10G(D) --
Eth1/13       1      eth  access down    SFP not inserted           10G(D) --
Eth1/14       1      eth  access down    SFP not inserted           10G(D) --
Eth1/15       1      eth  access down    SFP not inserted           10G(D) --
Eth1/16       1      eth  access down    SFP not inserted           10G(D) --
Eth1/17       1      eth  access up      none                       10G(D) --
Eth1/18       1      eth  access up      none                       10G(D) --
Eth1/19       1      eth  fabric up      none                       10G(D) --
Eth1/20       1      eth  access down    Link not connected         10G(D) --
Eth1/21       1      eth  access up      none                       10G(D) --
Eth1/22       1      eth  access down    Link not connected         10G(D) --
Eth1/23       1      eth  access down    SFP not inserted           10G(D) --
Eth1/24       1      eth  access down    SFP not inserted           10G(D) --
Eth1/25       1      eth  access down    Link not connected         10G(D) --
Eth1/26       1      eth  access down    SFP not inserted           10G(D) --
```

```
Eth1/27       1       eth  access down    SFP not inserted           10G(D) --
Eth1/28       1       eth  access down    SFP not inserted           10G(D) --
Eth1/29       1       eth  access down    Link not connected         10G(D) --
Eth1/30       1       eth  access down    SFP not inserted           10G(D) --
Eth1/31       1       eth  access down    SFP not inserted           10G(D) --
Eth1/32       1       eth  access up      none                       10G(D) --

--------------------------------------------------------------------------------
Port-channel VLAN  Type Mode   Status  Reason                   Speed  Protocol
Interface
--------------------------------------------------------------------------------
Po100        1     eth  trunk  up      none                     a-10G(D)  none

--------------------------------------------------------------------------------
Port   VRF          Status IP Address                              Speed    MTU
--------------------------------------------------------------------------------
mgmt0  --           up 192.0.2.33                                  1000     1500

--------------------------------------------------------------------------------
Interface Secondary VLAN(Type)                    Status Reason
--------------------------------------------------------------------------------
Vlan1     --                                      up     --
Vlan100   --                                      up     --

--------------------------------------------------------------------------------
Ethernet      VLAN   Type Mode   Status  Reason                   Speed     Port
Interface                                                                   Ch #
--------------------------------------------------------------------------------
Eth100/1/1    1       eth  access up      none                       10G(D) --
Eth100/1/2    1       eth  access down    Link not connected       auto(D) --
Eth100/1/3    1       eth  access up      none                       10G(D) --
Eth100/1/4    1       eth  access down    Link not connected       auto(D) --
Eth100/1/5    1       eth  access down    Link not connected       auto(D) --
Eth100/1/6    1       eth  access down    Link not connected       auto(D) --
Eth100/1/7    1       eth  access down    Link not connected       auto(D) --
Eth100/1/8    1       eth  access down    Link not connected       auto(D) --
Eth100/1/9    1       eth  access down    Link not connected       auto(D) --
Eth100/1/10   1       eth  access up      none                       10G(D) --
Eth100/1/11   1       eth  access down    Link not connected       auto(D) --
Eth100/1/12   1       eth  access down    Link not connected       auto(D) --
Eth100/1/13   1       eth  access down    Link not connected       auto(D) --
Eth100/1/14   1       eth  access down    Link not connected       auto(D) --
Eth100/1/15   1       eth  access up      none                       10G(D) --
Eth100/1/16   1       eth  access down    Link not connected       auto(D) --

--------------------------------------------------------------------------------
Interface     Status     Description
--------------------------------------------------------------------------------
Lo10          up         --
switch#
```

Note the following in the above display:

- Ethernet 1/5 is a Layer 3-ready interface. The following fields in the display help identify an interface as a configured Layer 3 interface:
  - Mode—routed
  - Status—up
  - Reason—none
- Ethernet 1/5.2 is a Layer 3 subinterface; however, the interface is not ready for Layer 3 configuration (Status—down).

- Interface Lo10 is a Layer 3 loopback interface.

This example shows how to display a brief summary of interfaces configured as FabricPath interfaces:

```
switch# show interface brief
--------------------------------------------------------------------------------
Ethernet      VLAN    Type Mode   Status  Reason                   Speed     Port
Interface                                                                    Ch#
--------------------------------------------------------------------------------
Eth1/1        1       eth  access down    SFP not inserted           1000(D) --
Eth1/2        --      eth  routed down    SFP not inserted           1000(D) --
Eth1/3        1       eth  access down    SFP not inserted            10G(D) --
Eth1/4        1       eth  access down    SFP not inserted            10G(D) --
Eth1/5        1       eth  f-path down    SFP not inserted            10G(D) --
Eth1/6        1       eth  access down    Link not connected          10G(D) --
Eth1/7        1       eth  fabric down    Link not connected          10G(D) --
Eth1/8        1       eth  access down    SFP not inserted            10G(D) --
Eth1/9        1       eth  access down    SFP not inserted            10G(D) --
Eth1/10       1       eth  access down    SFP not inserted            10G(D) --
Eth1/11       1       eth  access down    SFP not inserted            10G(D) --
Eth1/12       1       eth  access down    SFP not inserted            10G(D) --
Eth1/13       1       eth  access down    SFP not inserted            10G(D) --
Eth1/14       1       eth  access down    SFP not inserted            10G(D) --
Eth1/15       1       eth  pvlan  up      none                       1000(D) --
Eth1/16       1       eth  access down    SFP not inserted            10G(D) --
Eth1/17       1       eth  access down    SFP not inserted            10G(D) --
switch#
```

In the above display, Ethernet 1/5 has the mode shown as “f-path” indicating that it has been configured as a FabricPath port.

## Related Commands

| Command | Description |
|---|---|
| **interface ethernet** | Configures an Ethernet IEEE 802.3 interface. |

# show interface capabilities

To display detailed information about the capabilities of an interface, use the **show interface capabilities** command.

**show interface ethernet** *slot*/[*QSFP-module*/]*port* **capabilities**

## Syntax Description

| | |
|---|---|
| **ethernet** *slot*/[*QSFP-module*/]*port* | Specifies an Ethernet interface slot number and port number. The *slot* number is from 1 to 255. The *QSFP-module* number is from 1 to 4. The *port* number is from 1 to 128.<br>**Note** The *QSFP-module* number applies only to the QSFP+ Generic Expansion Module (GEM). |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 6.0(2)N1(1) | Support for the QSFP+ GEM was added. |
| 5.2(1)N1(1) | This command was introduced. |

## Usage Guidelines

You can use the **show interface capabilities** command only for physical interfaces.

## Examples

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

```
switch# show interface ethernet 1/1 capabilities
Ethernet1/1
  Model:                N6K-C6004-M12Q-FIX
  Type (SFP capable):   unknown
  Speed:                40000
  Duplex:               full
  Trunk encap. type:    802.1Q
  Channel:              yes
  Broadcast suppression: no
  Flowcontrol:          rx-(off/on),tx-(off/on)
  Rate mode:            none
  QOS scheduling:       rx-(6q1t),tx-(1p6q0t)
  CoS rewrite:          no
  ToS rewrite:          no
  SPAN:                 yes
  UDLD:                 yes
  MDIX:                 no
  Link Debounce:        yes
  Link Debounce Time:   yes
  Pvlan Trunk capable:  yes
  TDR capable:          no
```

```
  FabricPath capable:    yes
  Port mode:             Switched
  FEX Fabric:            yes

switch#
```

## Related Commands

| Command | Description |
|---|---|
| **interface ethernet** | Configures an Ethernet IEEE 802.3 interface. |

# show interface debounce

To display the debounce time information for all interfaces, use the **show interface debounce** command.

**show interface debounce**

## Syntax Description

This command has no arguments or keywords.

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the debounce status of all interfaces:

```
switch# show interface debounce

-------------------------------------------------------------------------------
Port          Debounce time   Value(ms)
-------------------------------------------------------------------------------
Eth1/1        enable              100
Eth1/2        enable              100
Eth1/3        enable              100
Eth1/4        enable              100
Eth1/5        enable              100
Eth1/6        enable              100
Eth1/7        enable              100
Eth1/8        enable              100
Eth1/9        enable              100
Eth1/10       enable              100
Eth1/11       enable              100
Eth1/12       enable              100
Eth5/1        enable              100
Eth5/2        enable              100
Eth5/3        enable              100
Eth5/4        enable              100
Eth5/5        enable              100
Eth5/6        enable              100
Eth5/7        enable              100
Eth5/8        enable              100
Eth5/9        enable              100
Eth5/10       enable              100
Eth5/11       enable              100
Eth5/12       enable              100
Eth6/1        enable              100
Eth6/2        enable              100
Eth6/3        enable              100
Eth6/4        enable              100
Eth6/5        enable              100
```

```
Eth6/6        enable              100
Eth6/7        enable              100
Eth6/8        enable              100
Eth6/9        enable              100
Eth6/10       enable              100
Eth6/11       enable              100
Eth6/12       enable              100
Eth8/1        enable              100
Eth8/2        enable              100
Eth8/3        enable              100
Eth8/4        enable              100
Eth8/5        enable              100
Eth8/6        enable              100
Eth8/7        enable              100
Eth8/8        enable              100
Eth8/9        enable              100
Eth8/10       enable              100
Eth8/11       enable              100
Eth8/12       enable              100
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **link debounce** | Enables the debounce timer on an interface. |

# show interface ethernet

To display information about the interface configuration, use the **show interface ethernet** command.

**show interface ethernet** *slot*/[*QSFP-module*/]*port*[.*subintf-port-no*] [**brief** | **counters** | **description** | **status** | **switchport**]

## Syntax Description

| | |
|---|---|
| *slot*/[*QSFP-module*/]*port* | Ethernet interface slot number and port number. The *slot* number is from 1 to 255. The *QSFP-module* number is from 1 to 4. The *port* number is from 1 to 128.<br>**Note** The *QSFP-module* number applies only to the QSFP+ Generic Expansion Module (GEM). |
| **.** | (Optional) Specifies the subinterface separator.<br>**Note** This keyword applies to Layer 3 interfaces. |
| *subintf-port-no* | (Optional) Port number for the subinterface. The range is from 1 to 48.<br>**Note** This argument applies to Layer 3 interfaces. |
| **brief** | (Optional) Displays brief information about the interfaces. |
| **counters** | (Optional) Displays information about the counters configured on an interface. |
| **description** | (Optional) Displays the description of an interface configuration. |
| **status** | (Optional) Displays the operational state of the interface. |
| **switchport** | (Optional) Displays the switchport information of an interface. |

## Command Default

Displays all information for the interface.

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 6.0(2)N1(1) | Support for the QSFP+ GEM was added. |
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the detailed configuration of the specified interface:

```
switch# show interface ethernet 1/1
Ethernet1/1 is up
 Dedicated Interface
  Hardware: 40000 Ethernet, address: c84c.753d.5b78 (bia c84c.753d.5b78)
  MTU 1500 bytes, BW 40000000 Kbit, DLY 10 usec
  reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA
  Port mode is access
  auto-duplex, 40 Gb/s
  Beacon is turned off
```

```
  Input flow-control is off, output flow-control is off
  Switchport monitor is off
  EtherType is 0x8100
  Last link flapped never
  Last clearing of "show interface" counters never
  0 interface resets
  30 seconds input rate 0 bits/sec, 0 packets/sec
  30 seconds output rate 0 bits/sec, 0 packets/sec
  Load-Interval #2: 5 minute (300 seconds)
    input rate 0 bps, 0 pps; output rate 0 bps, 0 pps
  RX
    0 unicast packets  0 multicast packets  0 broadcast packets
    0 input packets  0 bytes
    0 jumbo packets  0 storm suppression bytes
    0 runts  0 giants  0 CRC  0 no buffer
    0 input error  0 short frame  0 overrun   0 underrun  0 ignored
    0 watchdog  0 bad etype drop  0 bad proto drop  0 if down drop
    0 input with dribble  0 input discard
    0 Rx pause
  TX
    0 unicast packets  0 multicast packets  0 broadcast packets
    0 output packets  0 bytes
    0 jumbo packets
    0 output errors  0 collision  0 deferred  0 late collision
    0 lost carrier  0 no carrier  0 babble 0 output discard
    0 Tx pause

switch#
```

This example shows how to display the counters configured on a specified interface:

```
switch# show interface ethernet 1/1 counters
--------------------------------------------------------------------------------
Port                                   InOctets                      InUcastPkts
--------------------------------------------------------------------------------
Eth1/1                                        0                                0

--------------------------------------------------------------------------------
Port                                InMcastPkts                      InBcastPkts
--------------------------------------------------------------------------------
Eth1/1                                        0                                0

--------------------------------------------------------------------------------
Port                                  OutOctets                     OutUcastPkts
--------------------------------------------------------------------------------
Eth1/1                                        0                                0

--------------------------------------------------------------------------------
Port                               OutMcastPkts                     OutBcastPkts
--------------------------------------------------------------------------------
Eth1/1                                        0                                0
switch#
```

This example shows how to display the detailed configuration information of a specified subinterface:

```
switch# show interface ethernet 1/5.2
Ethernet1/5.2 is up
  Hardware: 1000/10000 Ethernet, address: 0005.73a6.1dbc (bia 0005.73a6.1d6c)
  Description: Eth 1/5.2 subinterfaces
  Internet Address is 192.0.2.3/24
  MTU 1500 bytes, BW 1500 Kbit, DLY 2000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation 802.1Q Virtual LAN, Vlan ID 100
  EtherType is 0x8100
```

```
switch#
```

This example shows how to display the brief configuration information of a specified subinterface:

```
switch# show interface ethernet 1/5.2 brief

--------------------------------------------------------------------------------
Ethernet      VLAN   Type Mode   Status  Reason                   Speed     Port
Interface                                                                  Ch #
--------------------------------------------------------------------------------
Eth1/5.2      100    eth  routed up      none                       10G(D) --
switch#
```

This example shows how to display the purpose of a specified subinterface:

```
switch# show interface ethernet 1/5.2 description

--------------------------------------------------------------------------------
Port          Type   Speed   Description
--------------------------------------------------------------------------------
Eth1/5.2      eth    10G     Eth 1/5.2 subinterfaces
switch#
```

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

```
switch# show interface ethernet 1/2 switchport
Name: Ethernet1/2
  Switchport: Enabled
  Switchport Monitor: Not enabled
  Operational Mode: trunk
  Access Mode VLAN: 1 (default)
  Trunking Native Mode VLAN: 1 (default)
  Trunking VLANs Enabled: 1,300-800
  Pruning VLANs Enabled: 2-1001
  Administrative private-vlan primary host-association: none
  Administrative private-vlan secondary host-association: none
  Administrative private-vlan primary mapping: none
  Administrative private-vlan secondary mapping: none
  Administrative private-vlan trunk native VLAN: none
  Administrative private-vlan trunk encapsulation: dot1q
  Administrative private-vlan trunk normal VLANs: none
  Administrative private-vlan trunk private VLANs: none
  Operational private-vlan: none
  Unknown unicast blocked: disabled
  Unknown multicast blocked: disabled
  Monitor destination rate-limit: 1G

switch#
```

## Related Commands

| Command | Description |
|---|---|
| **interface ethernet** | Configures an Ethernet IEEE 802.3 interface. |
| **interface ethernet (Layer 3)** | Configures a Layer 3 Ethernet IEEE 802.3 interface. |
| **switchport mode vntag** | Configures an Ethernet interface as a VNTag port. |
| **switchport monitor rate-limit** | Configures the rate limit for traffic on an interface. |

# show interface loopback

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

**show interface loopback** *lo-number* [**brief** | **description**]

## Syntax Description

| | |
|---|---|
| *lo-number* | Loopback interface number. The range is from 0 to 1023. |
| **brief** | (Optional) Displays a brief summary of the loopback interface information. |
| **description** | (Optional) Displays the description provided for the loopback interface. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

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

```
switch# show interface loopback 10
loopback10 is up
  Hardware: Loopback
  MTU 1500 bytes, BW 8000000 Kbit, DLY 5000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation LOOPBACK
    0 packets input 0 bytes
    0 multicast frames 0 compressed
    0 input errors 0 frame 0 overrun 0 fifo
    0 packets output 0 bytes 0 underruns
    0 output errors 0 collisions 0 fifo

switch#
```

Table 1 describes the significant fields shown in the display.

***Table 1 show interface loopback Field Description***

| Field | Description |
|---|---|
| Loopback is ... | Indicates whether the interface hardware is currently active (whether carrier detect is present), is currently inactive (down), or has been taken down by an administrator (administratively down). |
| Hardware | Hardware is Loopback. |
| MTU | Maximum transmission unit (MTU) of the interface. |
| BW | Bandwidth (BW) of the interface in kilobits per second. |
| DLY | Delay (DLY) of the interface in microseconds. |

*Table 1 show interface loopback Field Description (continued)*

| Field | Description |
|---|---|
| reliability | Reliability of the interface as a fraction of 255 (255/255 is 100 percent reliability), calculated as an exponential average over 5 minutes. |
| txload | Load on the interface for transmitting packets as a fraction of 255 (255/255 is completely saturated), calculated as an exponential average over 5 minutes. |
| rxload | Load on the interface for receiving packets as a fraction of 255 (255/255 is completely saturated), calculated as an exponential average over 5 minutes. |
| Encapsulation | Encapsulation method assigned to interface. |
| LOOPBACK | Indicates whether loopback is set. |
| packets input | Total number of error-free packets received by the system. |
| bytes | Total number of bytes, including data and MAC encapsulation, in the error-free packets received by the system. |
| multicast frames | Total number of multicast frames enabled on the interface. |
| compressed | Total number of multicast frames compressed on the interface. |
| input errors | Sum of all errors that prevented the receipt of datagrams on the interface being examined. This may not balance with the sum of the enumerated output errors, because some datagrams may have more than one error and others may have errors that do not fall into any of the specifically tabulated categories. |
| frame | Number of packets received incorrectly having a CRC error and a noninteger number of octets. On a serial line, this is usually the result of noise or other transmission problems. |
| overrun | Number of times the serial receiver hardware was unable to hand received data to a hardware buffer because the input rate exceeded the receiver's ability to handle the data. |
| fifo | Number of First In, First Out (FIFO) errors in the receive direction. |
| packets output | Total number of messages transmitted by the system. |
| bytes | Total number of bytes, including data and MAC encapsulation, transmitted by the system. |
| underruns | Number of times that the far-end transmitter has been running faster than the near-end router's receiver can handle. This may never happen (be reported) on some interfaces. |
| output errors | Sum of all errors that prevented the final transmission of datagrams out of the interface being examined. Note that this may not balance with the sum of the enumerated output errors, as some datagrams may have more than one error, and others may have errors that do not fall into any of the specifically tabulated categories. |
| collisions | Loopback interface does not have collisions. |
| fifo | Number of First In, First Out (FIFO) errors in the transmit direction. |

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

```
switch# show interface loopback 10 brief

--------------------------------------------------------------------------------
Interface     Status     Description
--------------------------------------------------------------------------------
loopback10    up         --
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **interface loopback** | Configures a loopback interface. |

# show interface mac-address

To display the information about the MAC address, use the **show interface mac-address** command.

**show interface** [*type slot*/[*QSFP-module*/]*port* | *portchannel-no*] **mac-address**

## Syntax Description

| | |
|---|---|
| *type* | (Optional) Interface for which MAC addresses should be displayed. The *type* can be either Ethernet or EtherChannel. |
| *slot*/[*QSFP-module*/]*port* | Ethernet interface port number and slot number. The *slot* number is from 1 to 255. The *QSFP-module* number is from 1 to 4. The *port* number is from 1 to 128.<br>**Note** The *QSFP-module* number applies only to the QSFP+ Generic Expansion Module (GEM). |
| *portchannel-no* | EtherChannel number. The EtherChannel number is from 1 to 4096. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 6.0(2)N1(1) | Support for the QSFP+ GEM was added. |
| 5.2(1)N1(1) | This command was introduced. |

## Usage Guidelines

If you do not specify an interface, the system displays all the MAC addresses.

## Examples

This example shows how to display the information on MAC addresses for the entire switch:

```
switch# show interface mac-address

--------------------------------------------------------------------------------
Interface                   Mac-Address     Burn-in Mac-Address
--------------------------------------------------------------------------------
Ethernet1/1                 c84c.753d.5b74  c84c.753d.5b78
Ethernet1/2                 c84c.753d.5b74  c84c.753d.5b79
Ethernet1/3                 c84c.753d.5b74  c84c.753d.5b7a
Ethernet1/4                 c84c.753d.5b74  c84c.753d.5b7b
Ethernet1/5                 c84c.753d.5b74  c84c.753d.5b7c
Ethernet1/6                 c84c.753d.5b74  c84c.753d.5b7d
Ethernet1/7                 c84c.753d.5b74  c84c.753d.5b7e
Ethernet1/8                 c84c.753d.5b74  c84c.753d.5b7f
Ethernet1/9                 c84c.753d.5b74  c84c.753d.5b80
Ethernet1/10                c84c.753d.5b74  c84c.753d.5b81
Ethernet1/11                c84c.753d.5b74  c84c.753d.5b82
Ethernet1/12                c84c.753d.5b74  c84c.753d.5b83
Ethernet5/1                 c84c.753d.5b74  a44c.11e7.ea20
```

```
Ethernet5/2                c84c.753d.5b74  a44c.11e7.ea21
Ethernet5/3                c84c.753d.5b74  a44c.11e7.ea22
Ethernet5/4                c84c.753d.5b74  a44c.11e7.ea23
Ethernet5/5                c84c.753d.5b74  a44c.11e7.ea24
Ethernet5/6                c84c.753d.5b74  a44c.11e7.ea25
Ethernet5/7                c84c.753d.5b74  a44c.11e7.ea26
Ethernet5/8                c84c.753d.5b74  a44c.11e7.ea27
Ethernet5/9                c84c.753d.5b74  a44c.11e7.ea28
Ethernet5/10               c84c.753d.5b74  a44c.11e7.ea29
Ethernet5/11               c84c.753d.5b74  a44c.11e7.ea2a
Ethernet5/12               c84c.753d.5b74  a44c.11e7.ea2b
Ethernet6/1                c84c.753d.5b74  a44c.11e7.e9f0
Ethernet6/2                c84c.753d.5b74  a44c.11e7.e9f1
Ethernet6/3                c84c.753d.5b74  a44c.11e7.e9f2
Ethernet6/4                c84c.753d.5b74  a44c.11e7.e9f3
Ethernet6/5                c84c.753d.5b74  a44c.11e7.e9f4
Ethernet6/6                c84c.753d.5b74  a44c.11e7.e9f5
Ethernet6/7                c84c.753d.5b74  a44c.11e7.e9f6
Ethernet6/8                c84c.753d.5b74  a44c.11e7.e9f7
Ethernet6/9                c84c.753d.5b74  a44c.11e7.e9f8
Ethernet6/10               c84c.753d.5b74  a44c.11e7.e9f9
Ethernet6/11               c84c.753d.5b74  a44c.11e7.e9fa
Ethernet6/12               c84c.753d.5b74  a44c.11e7.e9fb
Ethernet8/1                c84c.753d.5b74  c84c.753d.5c38
Ethernet8/2                c84c.753d.5b74  c84c.753d.5c39
Ethernet8/3                c84c.753d.5b74  c84c.753d.5c3a
Ethernet8/4                c84c.753d.5b74  c84c.753d.5c3b
Ethernet8/5                c84c.753d.5b74  c84c.753d.5c3c
Ethernet8/6                c84c.753d.5b74  c84c.753d.5c3d
Ethernet8/7                c84c.753d.5b74  c84c.753d.5c3e
Ethernet8/8                c84c.753d.5b74  c84c.753d.5c3f
Ethernet8/9                c84c.753d.5b74  c84c.753d.5c40
Ethernet8/10               c84c.753d.5b74  c84c.753d.5c41
Ethernet8/11               c84c.753d.5b74  c84c.753d.5c42
Ethernet8/12               c84c.753d.5b74  c84c.753d.5c43
mgmt0                      c84c.753d.5b39  c84c.753d.5b39
switch#
```

This example shows how to display the MAC address information for a specific port channel:

```
switch# show interface port-channel 5 mac-address

--------------------------------------------------------------------------------
Interface                  Mac-Address     Burn-in Mac-Address
--------------------------------------------------------------------------------
port-channel5              0005.9b78.6e7c  0005.9b78.6e7c
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **mac address-table static** | Adds static entries to the MAC address table or configures a static MAC address with IGMP snooping disabled for that address. |
| **show mac address-table** | Displays information on the MAC address table. |

# show interface mgmt

To display the configuration information for a management interface, use the **show interface mgmt** command.

**show interface mgmt** *intf-num* [**brief** | **capabilities** | **counters** [**detailed** [**all**] | **errors** [**snmp**]] | **description** | **status**]

## Syntax Description

| | |
|---|---|
| *intf-num* | Management interface number. The value is 0. |
| **brief** | (Optional) Displays a summary of the configuration information for the management interface. |
| **capabilities** | (Optional) Displays the interface capabilities information. |
| **counters** | (Optional) Displays information about the management interface counters. |
| **detailed** | (Optional) Displays detailed information of only the nonzero interface counters. |
| **all** | (Optional) Displays all nonzero interface counters. |
| **errors** | (Optional) Displays the interface error counters, such as receive or transmit error counters. |
| **snmp** | (Optional) Displays the Simple Network Management Protocol (SNMP) MIB values for the nonzero interface counters. |
| **description** | (Optional) Displays the interface description. |
| **status** | (Optional) Displays the interface line status. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the configuration information of the management interface:

```
switch# show interface mgmt 0
mgmt0 is up
  Hardware: GigabitEthernet, address: 0005.9b74.a6c1 (bia 0005.9b74.a6c1)
  Internet Address is 192.0.2.174/21
  MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec
  reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA
  full-duplex, 1000 Mb/s
  EtherType is 0x0000
  1 minute input rate 11336 bits/sec, 9 packets/sec
  1 minute output rate 2248 bits/sec, 3 packets/sec
  Rx
    22722587 input packets 7487592 unicast packets 7082728 multicast packets
```

```
    8152267 broadcast packets 3375124199 bytes
  Tx
    7618171 output packets 7283211 unicast packets 334751 multicast packets
    209 broadcast packets 1056259251 bytes

switch#
```

This example shows how to display the summary configuration information of the management interface:

```
switch# show interface mgmt 0 brief
--------------------------------------------------------------------------------
Port   VRF          Status IP Address                              Speed    MTU
--------------------------------------------------------------------------------
mgmt0  --           up     192.0.2.192                             1000     1500
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **interface mgmt** | Configures a management interface. |

# show interface port-channel

To display the information about an EtherChannel interface configuration, use the **show interface port-channel** command.

**show interface port-channel** *number*[**.***subinterface-number*] [**brief | counters | description | status**]

## Syntax Description

| | |
|---|---|
| *number* | EtherChannel number. The range is from 1 to 4096. |
| **.***subinterface-number* | (Optional) Port-channel subinterface configuration. Use the EtherChannel number followed by a dot (.) indicator and the subinterface number. The format is:<br>*portchannel-number.subinterface-number* |
| **counters** | (Optional) Displays information about the counters configured on the EtherChannel interface. |
| **description** | (Optional) Displays the description of the EtherChannel interface configuration. |
| **status** | (Optional) Displays the operational state of the EtherChannel interface. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the configuration information of a specified EtherChannel interface:

```
switch# show interface port-channel 21
port-channel21 is up
  Hardware: Port-Channel, address: 000d.ece7.df72 (bia 000d.ece7.df72)
  MTU 1500 bytes, BW 10000000 Kbit, DLY 10 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA
  Port mode is trunk
  full-duplex, 10 Gb/s
  Beacon is turned off
  Input flow-control is on, output flow-control is on
  Switchport monitor is off
  Members in this channel: Eth2/3
  Last clearing of "show interface" counters never
  30 seconds input rate 0 bits/sec, 0 packets/sec
  30 seconds output rate 352 bits/sec, 0 packets/sec
  Load-Interval #2: 5 minute (300 seconds)
    input rate 0 bps, 0 pps; output rate 368 bps, 0 pps
  RX
    0 unicast packets  0 multicast packets  0 broadcast packets
```

```
    0 input packets  0 bytes
    0 jumbo packets  0 storm suppression packets
    0 runts  0 giants  0 CRC  0 no buffer
    0 input error  0 short frame  0 overrun   0 underrun  0 ignored
    0 watchdog  0 bad etype drop  0 bad proto drop  0 if down drop
    0 input with dribble  0 input discard
    0 Rx pause
  TX
    0 unicast packets  15813 multicast packets  9 broadcast packets
    15822 output packets  1615917 bytes
    0 jumbo packets
    0 output errors  0 collision  0 deferred  0 late collision
    0 lost carrier  0 no carrier  0 babble
    0 Tx pause
  1 interface resets

switch#
```

## Related Commands

| Command | Description |
|---|---|
| **interface port-channel** | Configures an EtherChannel interface. |

# show interface private-vlan mapping

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

**show interface private-vlan mapping**

## Syntax Description

This command has no arguments or keywords.

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Usage Guidelines

Before you can configure private VLANs, you must enable them by using the **feature private-vlan** command. The commands for configuring private VLANs are not visible until you enable private VLANs.

This command displays the mapping information between the primary and secondary VLANs that allows both VLANs to share the VLAN interface of the primary VLAN.

## Examples

This example shows how to display information about primary and secondary private VLAN mapping:

```
switch# show interface private-vlan mapping
```

## Related Commands

| Command | Description |
|---|---|
| **feature private-vlan** | Enables private VLANs. |
| **show interface switchport** | Displays information about the ports, including those in private VLANs. |
| **show vlan** | Displays summary information for all VLANs. |
| **show vlan private-vlan** | Displays information for all private VLANs on the device. |

# show interface status err-disabled

To display the error disabled state of interfaces, use the **show interface status err-disabled** command.

**show interface status err-disabled**

## Syntax Description

This command has no arguments or keywords.

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the error disabled state of interfaces:

```
switch# show interface status err-disabled

--------------------------------------------------------------------------------
Port         Name               Status   Reason
--------------------------------------------------------------------------------
Eth114/1/27  --                 down     BPDUGuard errDisable
Eth114/1/28  --                 down     BPDUGuard errDisable
Eth114/1/29  --                 down     BPDUGuard errDisable
Eth114/1/30  --                 down     BPDUGuard errDisable
Eth114/1/31  --                 down     BPDUGuard errDisable
Eth114/1/32  --                 down     BPDUGuard errDisable
Eth114/1/33  --                 down     BPDUGuard errDisable
Eth114/1/34  --                 down     BPDUGuard errDisable
Eth114/1/35  --                 down     BPDUGuard errDisable
Eth114/1/36  --                 down     BPDUGuard errDisable
Eth114/1/39  --                 down     BPDUGuard errDisable
Eth114/1/40  --                 down     BPDUGuard errDisable
Eth114/1/41  --                 down     BPDUGuard errDisable
Eth114/1/42  --                 down     BPDUGuard errDisable
Eth114/1/43  --                 down     BPDUGuard errDisable
Eth114/1/44  --                 down     BPDUGuard errDisable
Eth114/1/45  --                 down     BPDUGuard errDisable
Eth114/1/46  --                 down     BPDUGuard errDisable
Eth114/1/47  --                 down     BPDUGuard errDisable
--More--
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **errdisable detect cause** | Enables the error disabled (err-disabled) detection. |
| **errdisable recovery cause** | Enables error disabled recovery on an interface. |

# show interface switchport

To display information about all the switch port interfaces, use the **show interface switchport** command.

**show interface switchport**

## Syntax Description

This command has no arguments or keywords.

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Usage Guidelines

You can configure the rate limit on the following Cisco Nexus 5000 Series switches using the **switchport monitor rate-limit 1G** command:

- Cisco Nexus 5010 Series
- Cisco Nexus 5020 Series

This command does not require a license.

## Examples

This example shows how to display information for all Ethernet interfaces:

```
switch# show interface switchport
Name: Ethernet1/1
  Switchport: Enabled
  Switchport Monitor: Not enabled
  Operational Mode: fex-fabric
  Access Mode VLAN: 1 (default)
  Trunking Native Mode VLAN: 1 (default)
  Trunking VLANs Enabled: 1-3967,4048-4093
  Administrative private-vlan primary host-association: none
  Administrative private-vlan secondary host-association: none
  Administrative private-vlan primary mapping: none
  Administrative private-vlan secondary mapping: none
  Administrative private-vlan trunk native VLAN: none
  Administrative private-vlan trunk encapsulation: dot1q
  Administrative private-vlan trunk normal VLANs: none
  Administrative private-vlan trunk private VLANs:
  Operational private-vlan: none
  Unknown unicast blocked: disabled
  Unknown multicast blocked: disabled

Name: Ethernet1/2
  Switchport: Enabled
```

```
  Switchport Monitor: Not enabled
  Operational Mode: fex-fabric
  Access Mode VLAN: 1 (default)
  Trunking Native Mode VLAN: 1 (default)
  Trunking VLANs Enabled: 1-3967,4048-4093
  Administrative private-vlan primary host-association: none
--More--
switch#
```

This example shows how to display information for all Ethernet interfaces:

```
switch# show interface switchport
Name: Ethernet1/1
  Switchport: Enabled
  Switchport Monitor: Not enabled
  Operational Mode: fex-fabric
  Access Mode VLAN: 1 (default)
  Trunking Native Mode VLAN: 1 (default)
  Trunking VLANs Enabled: 1,300-795,900,1002-1005
  Pruning VLANs Enabled: 2-1001
  Administrative private-vlan primary host-association: none
  Administrative private-vlan secondary host-association: none
  Administrative private-vlan primary mapping: none
  Administrative private-vlan secondary mapping: none
  Administrative private-vlan trunk native VLAN: none
  Administrative private-vlan trunk encapsulation: dot1q
  Administrative private-vlan trunk normal VLANs: none
  Administrative private-vlan trunk private VLANs: none
  Operational private-vlan: none
  Unknown unicast blocked: disabled
  Unknown multicast blocked: disabled

Name: Ethernet1/2
  Switchport: Enabled
  Switchport Monitor: Not enabled
  Operational Mode: vntag
  Access Mode VLAN: 1 (default)
  Trunking Native Mode VLAN: 1 (default)
  Trunking VLANs Enabled: 1,300-795
  Pruning VLANs Enabled: 2-1001
  Administrative private-vlan primary host-association: none
  Administrative private-vlan secondary host-association: none
  Administrative private-vlan primary mapping: none
  Administrative private-vlan secondary mapping: none
  Administrative private-vlan trunk native VLAN: none
  Administrative private-vlan trunk encapsulation: dot1q
  Administrative private-vlan trunk normal VLANs: none
  Administrative private-vlan trunk private VLANs: none
  Operational private-vlan: none
  Unknown unicast blocked: disabled
  Unknown multicast blocked: disabled

Name: Ethernet1/3
  Switchport: Enabled
  Switchport Monitor: Not enabled
  Operational Mode: trunk
  Access Mode VLAN: 700 (VLAN0700)
  Trunking Native Mode VLAN: 1 (default)
  Trunking VLANs Enabled: 1,300-795
<--snip-->
:
:
Name: port-channel4000
  Switchport: Enabled
```

```
  Switchport Monitor: Not enabled
  Operational Mode: access
  Access Mode VLAN: 1 (default)
  Trunking Native Mode VLAN: 1 (default)
  Trunking VLANs Enabled: 1,300-795,900,1002-1005
  Pruning VLANs Enabled: 2-1001
  Administrative private-vlan primary host-association: none
  Administrative private-vlan secondary host-association: none
  Administrative private-vlan primary mapping: none
  Administrative private-vlan secondary mapping: none
  Administrative private-vlan trunk native VLAN: none
  Administrative private-vlan trunk encapsulation: dot1q
  Administrative private-vlan trunk normal VLANs: none
  Administrative private-vlan trunk private VLANs: none
  Operational private-vlan: none
  Unknown unicast blocked: disabled
  Unknown multicast blocked: disabled

Name: Ethernet101/1/1
  Switchport: Enabled
  Switchport Monitor: Not enabled
  Operational Mode: access
  Access Mode VLAN: 1 (default)
  Trunking Native Mode VLAN: 1 (default)
  Trunking VLANs Enabled: 1,300-795,900,1002-1005
  Pruning VLANs Enabled: 2-1001
  Administrative private-vlan primary host-association: none
<--Output truncated-->
switch#
```

This example shows how to display the rate limit status for Ethernet interface 1/2:

```
switch# show interface switchport
BEND-2(config-if)# show interface switchport
Name: Ethernet1/1
  Switchport: Enabled
  Switchport Monitor: Not enabled
  Operational Mode: fex-fabric
  Access Mode VLAN: 1 (default)
  Trunking Native Mode VLAN: 1 (default)
  Trunking VLANs Enabled: 1,300-800,900
  Pruning VLANs Enabled: 2-1001
  Administrative private-vlan primary host-association: none
  Administrative private-vlan secondary host-association: none
  Administrative private-vlan primary mapping: none
  Administrative private-vlan secondary mapping: none
  Administrative private-vlan trunk native VLAN: none
  Administrative private-vlan trunk encapsulation: dot1q
  Administrative private-vlan trunk normal VLANs: none
  Administrative private-vlan trunk private VLANs: none
  Operational private-vlan: none
  Unknown unicast blocked: disabled
  Unknown multicast blocked: disabled

Name: Ethernet1/2
  Switchport: Enabled
  Switchport Monitor: Not enabled
  Operational Mode: trunk
  Access Mode VLAN: 1 (default)
  Trunking Native Mode VLAN: 1 (default)
  Trunking VLANs Enabled: 1,300-800
  Pruning VLANs Enabled: 2-1001
  Administrative private-vlan primary host-association: none
  Administrative private-vlan secondary host-association: none
```

```
  Administrative private-vlan primary mapping: none
  Administrative private-vlan secondary mapping: none
  Administrative private-vlan trunk native VLAN: none
  Administrative private-vlan trunk encapsulation: dot1q
  Administrative private-vlan trunk normal VLANs: none
  Administrative private-vlan trunk private VLANs: none
  Operational private-vlan: none
  Unknown unicast blocked: disabled
  Unknown multicast blocked: disabled
  Monitor destination rate-limit: 1G

Name: Ethernet1/3
  Switchport: Enabled
  Switchport Monitor: Not enabled
  Operational Mode: trunk
  Access Mode VLAN: 700 (VLAN0700)
  Trunking Native Mode VLAN: 1 (default)
<--Output truncated-->
switch #
```

In the above display, the significant field for Ethernet interface 1/2 is highlighted.

This example shows how to display the voice VLAN information for an Ethernet interface:

```
switch# show interface ethernet 1/28 switchport
Name: Ethernet1/28
  Switchport: Enabled
  Switchport Monitor: Not enabled
  Operational Mode: access
  Access Mode VLAN: 3000 (VLAN3000)
  Trunking Native Mode VLAN: 1 (default)
  Trunking VLANs Enabled: 1,200,300-302,500,2001-2248,3000-3001,4049,4090
  Pruning VLANs Enabled: 2-1001
  Voice VLAN: 3
  Extended Trust State : not trusted [COS = 0]
  Administrative private-vlan primary host-association: none
  Administrative private-vlan secondary host-association: none
  Administrative private-vlan primary mapping: none
  Administrative private-vlan secondary mapping: none
  Administrative private-vlan trunk native VLAN: none
  Administrative private-vlan trunk encapsulation: dot1q
  Administrative private-vlan trunk normal VLANs: none
  Administrative private-vlan trunk private VLANs: none
  Operational private-vlan: none
  Unknown unicast blocked: disabled
  Unknown multicast blocked: disabled

switch#
```

## Related Commands

| Command | Description |
|---|---|
| **switchport access vlan** | Sets the access VLAN when the interface is in access mode. |
| **switchport monitor rate-limit** | Configures the rate limit for traffic on an interface. |

# show interface switchport backup

To display information about all the switch port Flex Links interfaces, use the **show interface switchport backup** command.

**show interface switchport backup** [**detail**]

## Syntax Description

| | |
|---|---|
| **detail** | (Optional) Displays detailed information for backup interfaces. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display information for all Flex Links:

```
switch# show interface switchport backup

Switch Backup Interface Pairs:

Active Interface        Backup Interface        State
------------------------------------------------------------------------
Ethernet1/2             Ethernet1/1             Active Down/Backup Down
Ethernet1/20            Ethernet1/21            Active Down/Backup Down
port-channel300         port-channel301         Active Up/Backup Down
port-channel500         port-channel501         Active Down/Backup Down
port-channel502         port-channel503         Active Down/Backup Down
port-channel504         Ethernet2/1             Active Down/Backup Down
switch#
```

This example shows how to display the detailed information for all Flex Links:

```
switch# show interface switchport backup detail

Switch Backup Interface Pairs:

Active Interface        Backup Interface        State
------------------------------------------------------------------------
Ethernet1/2             Ethernet1/1             Active Down/Backup Down
        Preemption Mode  : off
        Multicast Fast Convergence  : Off
        Bandwidth : 1000000 Kbit (Ethernet1/2), 10000000 Kbit (Ethernet1/1)

Ethernet1/20            Ethernet1/21            Active Down/Backup Down
        Preemption Mode  : off
        Multicast Fast Convergence  : Off
        Bandwidth : 10000000 Kbit (Ethernet1/20), 10000000 Kbit (Ethernet1/21)
```

```
port-channel300         port-channel301         Active Up/Backup Down
        Preemption Mode  : forced
        Preemption Delay : 35 seconds (default)
        Multicast Fast Convergence  : On
        Bandwidth : 20000000 Kbit (port-channel300), 10000000 Kbit (port-channel
301)

port-channel500         port-channel501         Active Down/Backup Down
        Preemption Mode  : off
        Multicast Fast Convergence  : On
        Bandwidth : 100000 Kbit (port-channel500), 100000 Kbit (port-channel501)

port-channel502         port-channel503         Active Down/Backup Down
        Preemption Mode  : off
        Multicast Fast Convergence  : Off
        Bandwidth : 100000 Kbit (port-channel502), 100000 Kbit (port-channel503)

port-channel504         Ethernet2/1             Active Down/Backup Down
        Preemption Mode  : off
        Multicast Fast Convergence  : Off
        Bandwidth : 100000 Kbit (port-channel504), 0 Kbit (Ethernet2/1)
switch#
```

Table 2 describes the significant fields displayed in the output.

***Table 2 show interface switchport backup Field Descriptions***

| Field | Description |
|---|---|
| Active Interface | Layer 2 interface being configured. |
| Backup Interface | Layer 2 interface to act as a backup link to the interface being configured. |
| State | Flex Links status. |
| Preemption Mode | Preemption scheme for a backup interface pair. |
| Preemption Delay | Preemption delay configured for a backup interface pair. |
| Multicast Fast Convergence | Fast convergence configured on the backup interface. |
| Bandwidth | Bandwidth configured on the backup interface. |

## Related Commands

| Command | Description |
|---|---|
| **switchport backup interface** | Configures Flex Links. |
| **show running-config backup** | Displays the running configuration information for backup interfaces. |
| **show running-config flexlink** | Displays the running configuration information for Flex Links. |

# show interface transceiver

To display the information about the transceivers connected to a specific interface, use the **show interface transceiver** command.

**show interface ethernet** *slot*/[*QSFP-module*/]*port* **transceiver** [**details**]

## Syntax Description

| | |
|---|---|
| **ethernet** *slot*/[*QSFP-module*/]*port* | Displays information about an Ethernet interface slot number and port number. The *slot* number is from 1 to 255. The *QSFP-module* number is from 1 to 4. The *port* number is from 1 to 128.<br>**Note** The *QSFP-module* number applies only to the QSFP+ Generic Expansion Module (GEM). |
| **details** | (Optional) Displays detailed information about the transceivers on an interface. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 6.0(2)N1(1) | Support for the QSFP+ GEM was added. |
| 5.2(1)N1(1) | This command was introduced. |

## Usage Guidelines

You can use the **show interface transceiver** command only for physical interfaces.

## Examples

This example shows how to display the transceivers connected to a specified Ethernet interface:

```
switch# show interface ethernet 1/1 transceiver
Ethernet1/1
    transceiver is present
    type is SFP-H10GB-CU1M
    name is CISCO-MOLEX
    part number is 74752-9044
    revision is 07
    serial number is MOC14081360
    nominal bitrate is 10300 MBit/sec
    Link length supported for copper is 1 m
    cisco id is --
    cisco extended id number is 4

switch#
```

## Related Commands

| Command | Description |
|---|---|
| **interface ethernet** | Configures an Ethernet IEEE 802.3 interface. |
| **show interface capabilities** | Displays detailed information about the capabilities of an interface. |

# show interface vethernet

To display information about a virtual Ethernet (vEth) interface configuration, use the **show interface vethernet** command.

**show interface vethernet** *veth-id* [**brief | description | detail | mac-address | status | switchport | trunk**]

## Syntax Description

| | |
|---|---|
| *veth-id* | Virtual Ethernet interface number. The range is from 1 to 1,048,575. |
| **brief** | (Optional) Displays brief information about the vEth interface. |
| **description** | (Optional) Displays the vEth interface description. |
| **detail** | (Optional) Displays detailed configuration information about the vEth interface. |
| **mac-address** | (Optional) Displays the MAC address of the vEth interface. |
| **status** | (Optional) Displays the vEth interface line status. |
| **switchport** | (Optional) Displays the vEth interface switchport information. |
| **trunk** | (Optional) Displays the vEth interface trunk information. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the configuration information of a specified virtual Ethernet interface:

```
switch# show interface vethernet 1
Vethernet1 is down (nonParticipating)
    Bound Interface is --
    Hardware is Virtual, address is 0005.9b74.a6c0
    Port mode is access
    Speed is auto-speed
    Duplex mode is auto
  300 seconds input rate 0 bits/sec, 0 packets/sec
  300 seconds output rate 0 bits/sec, 0 packets/sec
  Rx
    0 unicast packets  0 multicast packets  0 broadcast packets
    0 input packets  0 bytes
    0 input packet drops
  Tx
    0 unicast packets  0 multicast packets  0 broadcast packets
    0 output packets  0 bytes
    0 flood packets
    0 output packet drops
```

```
switch#
```

This example shows how to display a brief information about a specified virtual Ethernet interface:

```
switch# show interface vethernet 1 brief

--------------------------------------------------------------------------------
Vethernet     VLAN   Type Mode   Status  Reason                   Speed
--------------------------------------------------------------------------------
Veth1         1      virt access down    nonParticipating           auto
switch#
```

This example shows how to display the description provided for a specified virtual Ethernet interface:

```
switch# show interface vethernet 10 description

--------------------------------------------------------------------------------
Interface                Description
--------------------------------------------------------------------------------
Veth10                    Active VIF
switch#
```

This example shows how to display the switchport information of a specified virtual Ethernet interface:

```
switch# show interface vethernet 1 switchport
Name: Vethernet1
  Switchport: Enabled
  Switchport Monitor: Not enabled
  Operational Mode: access
  Access Mode VLAN: 1 (default)
  Trunking Native Mode VLAN: 1 (default)
  Trunking VLANs Allowed: 1-3967,4048-4093
  Voice VLAN: none
  Extended Trust State : not trusted [COS = 0]
  Administrative private-vlan primary host-association: none
  Administrative private-vlan secondary host-association: none
  Administrative private-vlan primary mapping: none
  Administrative private-vlan secondary mapping: none
  Administrative private-vlan trunk native VLAN: none
  Administrative private-vlan trunk encapsulation: dot1q
  Administrative private-vlan trunk normal VLANs: none
  Administrative private-vlan trunk private VLANs: none
  Operational private-vlan: none
  Unknown unicast blocked: disabled
  Unknown multicast blocked: disabled

switch#
```

## Related Commands

| Command | Description |
|---|---|
| **interface vethernet** | Configures a virtual Ethernet interface. |

# show interface vethernet counters

To display information about the virtual Ethernet (vEth) interface counters, use the **show interface vethernet counters** command.

**show interface vethernet** *veth-id* **counters** [**brief** | **detailed** [**all**] [**snmp**] | **errors** [**snmp**] | **snmp**]

## Syntax Description

| | |
|---|---|
| *veth-id* | Virtual Ethernet interface number. The range is from 1 to 1,048,575. |
| brief | (Optional) Displays brief information about the vEth interface counters. |
| **detailed** | (Optional) Displays detailed information of only the nonzero vEth interface counters. |
| **all** | (Optional) Displays all nonzero vEth interface counters. |
| **errors** | (Optional) Displays the vEth interface error counters, such as receive or transmit error counters. |
| **snmp** | (Optional) Displays the Simple Network Management Protocol (SNMP) MIB values for the nonzero vEth interface counters. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display a brief information about the counters configured on a specified virtual Ethernet interface:

```
switch# show interface vethernet 10 counters brief

--------------------------------------------------------------------------------
Interface         Input Rate (avg)    Output Rate (avg)
                  ------------------  ------------------
                  Rate     Total      Rate     Total        Rate averaging
                  MB/s     Frames     MB/s     Frames       interval (seconds)
--------------------------------------------------------------------------------
Vethernet10            0        0                 0        0
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **interface vethernet** | Configures a virtual Ethernet interface. |

# show interface virtual

To display the status of all virtual interfaces, use the **show interface virtual** command.

**show interface virtual** {{**status** | **summary**} [**adapter-fex** | **bound interface ethernet** *slot/[QSFP-module/]port* | **vm-fex**]}

## Syntax Description

| | |
|---|---|
| **status** | Displays the status of all virtual Ethernet interfaces (vEth) and floating virtual interfaces. |
| **summary** | Displays the summary information about virtual Ethernet interfaces. |
| **adapter-fex** | (Optional) Displays information about fixed virtual ethernet interfaces. |
| **bound interface** | (Optional) Displays information about virtual interfaces on a bound interface. |
| **ethernet** *slot/[QSFP-module/]port* | (Optional) Displays information about a specific ethernet interface.The *slot* number is from 1 to 255. The *QSFP-module* number is from 1 to 4. The *port* number is from 1 to 128.<br>**Note** The *QSFP-module* number applies only to the QSFP+ Generic Expansion Module (GEM). |
| **vm-fex** | (Optional) Displays information about all floating virtual interfaces. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 6.0(2)N1(1) | Support for the QSFP+ GEM was added. |
| 5.2(1)N1(1) | This command was introduced. |

## Usage Guidelines

Before you use this command, make sure that you enable Cisco Virtual Machine Fabric Extender (VM-FEX) on the switch by using the **feature vmfex** command.

## Examples

This example shows how to display brief information about the counters configured on a specified virtual Ethernet interface:

```
switch# show interface virtual status
Interface VIF-index   Bound If      Chan  Vlan  Status     Mode     Vntag
--------------------------------------------------------------------------------
Total 1 Veth interfaces
switch#
```

**Related Commands**

| Command | Description |
|---|---|
| **feature vmfex** | Enables VM-FEX on the switch. |
| **interface vethernet** | Configures a virtual Ethernet interface. |

# show interface vlan

To display brief descriptive information about specified VLANs, use the **show interface vlan** command.

**show interface vlan** *vlan-id* [**brief | private-vlan mapping**]

## Syntax Description

| | |
|---|---|
| *vlan-id* | Number of the VLAN. The range is from 1 to 4094. |
| **brief** | (Optional) Displays a summary information for the specified VLAN. |
| **private-vlan mapping** | (Optional) Displays the private VLAN mapping information, if any, for the specified VLAN. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Usage Guidelines

You must enable interface VLANs by using the **feature interface-vlan** command. The commands for configuring interface VLANs are not visible until you enable this feature.

This command displays descriptive information for the specified VLAN, including private VLANs.

The switch displays output for the **show interface vlan** *vlan-id* **private-vlan mapping** command only when you specify a primary private VLAN. If you specify a secondary private VLAN, the output is blank.

## Examples

This example shows how to display information about the specified VLAN:

```
switch# show interface vlan 10
Vlan10 is up, line protocol is up
  Hardware is EtherSVI, address is  0005.9b78.6e7c
  MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec,

switch#
```

This example shows how to display a brief description for the specified VLAN:

```
switch# show interface vlan 10 brief

--------------------------------------------------------------------------------
Interface Secondary VLAN(Type)                    Status Reason
--------------------------------------------------------------------------------
Vlan10    --                                      up     --
switch#
```

This example shows how to display the private VLAN mapping information, if any, for the VLAN:

```
switch# show interface vlan 10 private-vlan mapping
```

When you specify a primary VLAN, the switch displays all secondary VLANs mapped to that primary VLAN.

## Related Commands

| Command | Description |
|---|---|
| **show interface switchport** | Displays information about the ports, including those in private VLANs. |
| **show vlan** | Displays summary information for all VLANs. |
| **show vlan private-vlan** | Displays summary information for all private VLANs. |

# show ip igmp snooping

To display the Internet Group Management Protocol (IGMP) snooping configuration of the switch, use the **show ip igmp snooping** command.

**show ip igmp snooping** [**explicit-tracking vlan** *vlan-id* | **groups** [**detail** | **vlan** *vlan-id*] | **mrouter** [**vlan** *vlan-id*] | **querier** [**vlan** *vlan-id*] | **vlan** *vlan-id*]

## Syntax Description

| | |
|---|---|
| **explicit-tracking** | (Optional) Displays information about the explicit host-tracking status for IGMPv3 hosts. If you provide this keyword, you must specify a VLAN. |
| **vlan** *vlan-id* | (Optional) Specifies a VLAN. The VLAN ID range is from1 to 4094. |
| **groups** | (Optional) Displays information for the IGMP group address. |
| **detail** | (Optional) Displays detailed information for the group. |
| **mrouter** | (Optional) Displays information about dynamically detected multicast routers. |
| **querier** | (Optional) Displays information about the snooping querier if defined. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the IGMP snooping configuration of the switch:

```
switch# show ip igmp snooping
Global IGMP Snooping Information:
  IGMP Snooping enabled
  IGMPv1/v2 Report Suppression enabled
  IGMPv3 Report Suppression disabled
  Link Local Groups Suppression enabled

IGMP Snooping information for vlan 1
  IGMP snooping enabled
  IGMP querier none
  Switch-querier disabled
  IGMPv3 Explicit tracking enabled
  IGMPv2 Fast leave disabled
  IGMPv1/v2 Report suppression enabled
  IGMPv3 Report suppression disabled
  Link Local Groups suppression enabled
  Router port detection using PIM Hellos, IGMP Queries
  Number of router-ports: 1
  Number of groups: 0
  VLAN vPC function enabled
  Active ports:
```

```
    Po19        Po400   Eth170/1/17     Eth171/1/7
    Eth171/1/8  Eth198/1/11     Eth199/1/13
IGMP Snooping information for vlan 300
  IGMP snooping enabled
  IGMP querier none
  Switch-querier disabled
  IGMPv3 Explicit tracking enabled
--More--
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **ip igmp snooping (EXEC)** | Globally enables IGMP snooping. IGMP snooping must be globally enabled in order to be enabled on a VLAN. |
| **ip igmp snooping (VLAN)** | Enables IGMP snooping on the VLAN interface. |

# show lacp

To display Link Aggregation Control Protocol (LACP) information, use the **show lacp** command.

**show lacp** {**counters** | **interface ethernet** *slot/[QSFP-module/]port* | **neighbor** [**interface port-channel** *number*] | **port-channel** [**interface port-channel** *number*] | **system-identifier**}

## Syntax Description

| | |
|---|---|
| **counters** | Displays information about the LACP traffic statistics. |
| **interface ethernet** *slot/[QSFP-module/]port* | Displays LACP information for a specific Ethernet interface. The *slot* number is from 1 to 255. The *QSFP-module* number is from 1 to 4. The *port* number is from 1 to 128.<br>**Note** The *QSFP-module* number applies only to the QSFP+ Generic Expansion Module (GEM). |
| **neighbor** | Displays information about the LACP neighbor. |
| **port-channel** | Displays information about all EtherChannels. |
| **interface port-channel** *number* | (Optional) Displays information about a specific EtherChannel. The EtherChannel number is from 1 to 4096. |
| **system-identifier** | Displays the LACP system identification. It is a combination of the port priority and the MAC address of the device. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 6.0(2)N1(1) | Support for the QSFP+ GEM was added. |
| 5.2(1)N1(1) | This command was introduced. |

## Usage Guidelines

Use the **show lacp** command to troubleshoot problems related to LACP in a network.

## Examples

This example shows how to display the LACP system identification:

```
switch# show lacp system-identifier
32768,0-5-9b-78-6e-7c
switch#
```

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

```
switch# show lacp interface ethernet 1/1
Interface Ethernet1/1 is up
  Channel group is 1 port channel is Po1
  PDUs sent: 1684
  PDUs rcvd: 1651
  Markers sent: 0
```

```
  Markers rcvd: 0
  Marker response sent: 0
  Marker response rcvd: 0
  Unknown packets rcvd: 0
  Illegal packets rcvd: 0
Lag Id: [ [(8000, 0-5-9b-78-6e-7c, 0, 8000, 101), (8000, 0-d-ec-c9-c8-3c, 0, 800
0, 101)] ]
Operational as aggregated link since Mon Jan 30 00:37:27 2013

Local Port: Eth1/1   MAC Address= 0-5-9b-78-6e-7c
  System Identifier=0x8000,0-5-9b-78-6e-7c
  Port Identifier=0x8000,0x101
  Operational key=0
  LACP_Activity=active
  LACP_Timeout=Long Timeout (30s)
  Synchronization=IN_SYNC
  Collecting=true
  Distributing=true
  Partner information refresh timeout=Long Timeout (90s)
Actor Admin State=(Ac-1:To-1:Ag-1:Sy-0:Co-0:Di-0:De-0:Ex-0)
Actor Oper State=(Ac-1:To-0:Ag-1:Sy-1:Co-1:Di-1:De-0:Ex-0)
Neighbor: 1/1
  MAC Address= 0-d-ec-c9-c8-3c
  System Identifier=0x8000,0-d-ec-c9-c8-3c
  Port Identifier=0x8000,0x101
  Operational key=0
  LACP_Activity=active
  LACP_Timeout=Long Timeout (30s)
  Synchronization=IN_SYNC
  Collecting=true
  Distributing=true
Partner Admin State=(Ac-0:To-1:Ag-0:Sy-0:Co-0:Di-0:De-0:Ex-0)
Partner Oper State=(Ac-1:To-0:Ag-1:Sy-1:Co-1:Di-1:De-0:Ex-0)
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **clear lacp counters** | Clears LACP counters. |
| **lacp port-priority** | Sets the priority for the physical interfaces for the LACP. |
| **lacp system-priority** | Sets the system priority of the switch for the LACP. |

# show mac address-table aging-time

To display information about the time-out values for the MAC address table, use the **show mac address-table aging-time** command.

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

## Syntax Description

| | |
|---|---|
| **vlan** *vlan-id* | (Optional) Displays information for a specific VLAN. The VLAN ID range is from 1 to 4094. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display MAC address aging times:

```
switch# show mac address-table aging-time
Vlan  Aging Time
----- ----------
2023  300
2022  300
2021  300
2020  300
2019  300
2018  300
2017  300
2016  300
2015  300
2014  300
2013  300
2012  300
2011  300
2010  300
2009  300
2008  300
2007  300
2006  300
2005  300
2004  300
2003  300
--More--
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **mac address-table aging-time** | Configures the aging time for entries in the MAC address table. |
| **show mac address-table** | Displays information about the MAC address table. |

# show mac address-table count

To display the number of entries currently in the MAC address table, use the **show mac address-table count** command.

**show mac address-table count** [**address** *EEEE.EEEE.EEEE*] [**dynamic** | **static**] [**interface** {**ethernet** *slot/[QSFP-module/]port* | **port-channel** *number*}] [**vlan** *vlan-id*]

## Syntax Description

| | |
|---|---|
| **address** *EEEE.EEEE.EEEE* | (Optional) Displays a count of the MAC address table entries for a specific address. |
| **dynamic** | (Optional) Displays a count of the dynamic MAC addresses. |
| **static** | (Optional) Displays a count of the static MAC addresses. |
| **interface** | (Optional) Specifies the interface. The interface can be Ethernet or EtherChannel. |
| **ethernet** *slot/[QSFP-module/]port* | (Optional) Specifies the Ethernet interface slot number and port number. The *slot* number is from 1 to 255. The *QSFP-module* number is from 1 to 4. The *port* number is from 1 to 128.<br>**Note** The *QSFP-module* number applies only to the QSFP+ Generic Expansion Module (GEM). |
| **port-channel** *number* | (Optional) Specifies the EtherChannel interface. The EtherChannel number is from 1 to 4096. |
| **vlan** *vlan-id* | (Optional) Displays information for a specific VLAN. The range is from 1 to 4094. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 6.0(2)N1(1) | Support for the QSFP+ GEM was added. |
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the number of dynamic entries currently in the MAC address table:

```
switch# show mac address-table count dynamic
MAC Entries for all vlans:
Total MAC Addresses in Use: 7
switch#
```

**Related Commands**

| Command | Description |
|---|---|
| **show mac address-table** | Displays information about the MAC address table. |

# show mac address-table notification

To display notifications about the MAC address table, use the **show mac address-table notification** command.

**show mac address-table notification** {**mac-move** | **threshold**}

## Syntax Description

| | |
|---|---|
| **mac-move** | Displays notification messages about MAC addresses that were moved. |
| **threshold** | Displays notification messages sent when the MAC address table threshold was exceeded. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display MAC address move notifications:

```
switch# show mac address-table notification mac-move
MAC Move Notify : disabled
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **show mac address-table** | Displays information about the MAC address table. |

# show mac address-table

To display the information about the MAC address table, use the **show mac address-table** command.

**show mac address-table** [**address** *mac-address*] [**dynamic | multicast | static**] [**interface** {**ethernet** *slot/[QSFP-module/]port* **| port-channel** *number*}] [**vlan** *vlan-id*]

## Syntax Description

| | |
|---|---|
| **address** *mac-address* | (Optional) Displays information about a specific MAC address. |
| **dynamic** | (Optional) Displays information about the dynamic MAC address table entries only. |
| **interface** | (Optional) Specifies the interface. The interface can be either Ethernet or EtherChannel. |
| **ethernet** *slot/[QSFP-module/]port* | (Optional) Specifies the Ethernet interface slot number and port number. The *slot* number is from 1 to 255. The *QSFP-module* number is from 1 to 4. The *port* number is from 1 to 128.<br>**Note** The *QSFP-module* number applies only to the QSFP+ Generic Expansion Module (GEM). |
| **port-channel** *number* | (Optional) Specifies the EtherChannel interface. The EtherChannel number is from 1 to 4096. |
| **multicast** | (Optional) Displays information about the multicast MAC address table entries only. |
| **static** | (Optional) Displays information about the static MAC address table entries only. |
| **vlan** *vlan-id* | (Optional) Displays information for a specific VLAN. The VLAN ID range is from 1 to 4094. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 6.0(2)N1(1) | Support for the QSFP+ GEM was added. |
| 5.2(1)N1(1) | This command was introduced. |

## Usage Guidelines

The switch maintains static MAC address entries that are saved in its startup configuration across reboots and flushes the dynamic entries.

## Examples

This example shows how to display information about the entries for the MAC address table:

```
switch# show mac address-table
Legend:
```

```
        * - primary entry, G - Gateway MAC, (R) - Routed MAC, O - Overlay MAC
        age - seconds since last seen,+ - primary entry using vPC Peer-Link
   VLAN     MAC Address      Type      age     Secure NTFY    Ports
---------+-----------------+--------+---------+------+----+------------------
+ 100      0000.0001.0003    dynamic   0          F    F  Po1
+ 100      0000.0001.0004    dynamic   0          F    F  Po1
+ 100      0000.0001.0009    dynamic   0          F    F  Po1
+ 100      0000.0001.0010    dynamic   0          F    F  Po1
* 1        001d.7172.6c40    dynamic   300        F    F  Eth100/1/20
switch#
```

This example shows how to display information about the entries for the MAC address table for a specific MAC address:

```
switch# show mac address-table address 0018.bad8.3fbd
```

This example shows how to display information about the dynamic entries for the MAC address table:

```
switch# show mac address-table dynamic
Legend:
        * - primary entry, G - Gateway MAC, (R) - Routed MAC, O - Overlay MAC
        age - seconds since last seen,+ - primary entry using vPC Peer-Link
   VLAN     MAC Address      Type      age     Secure NTFY    Ports
---------+-----------------+--------+---------+------+----+------------------
+ 100      0000.0001.0003    dynamic   0          F    F  Po1
+ 100      0000.0001.0004    dynamic   0          F    F  Po1
+ 100      0000.0001.0009    dynamic   0          F    F  Po1
+ 100      0000.0001.0010    dynamic   0          F    F  Po1
* 1        001d.7172.6c40    dynamic   300        F    F  Eth100/1/20
switch#
```

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

```
switch# show mac address-table interface ethernet 1/3
```

This example shows how to display static entries in the MAC address table:

```
switch# show mac address-table static
```

This example shows how to display entries in the MAC address table for a specific VLAN:

```
switch# show mac address-table vlan 1
Legend:
        * - primary entry, G - Gateway MAC, (R) - Routed MAC, O - Overlay MAC
        age - seconds since last seen,+ - primary entry using vPC Peer-Link
   VLAN     MAC Address      Type      age     Secure NTFY    Ports
---------+-----------------+--------+---------+------+----+------------------
* 1        001d.7172.6c40    dynamic   60         F    F  Eth100/1/20
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **mac address-table static** | Adds static entries to the MAC address table or configures a static MAC address with IGMP snooping disabled for that address. |
| **show mac address-table aging-time** | Displays information about the time-out values for the MAC address table. |

| Command | Description |
|---|---|
| **show mac address-table count** | Displays the number of entries currently in the MAC address table. |
| **show mac address-table notifications** | Displays information about notifications for the MAC address table. |

# show monitor session

To display information about the Switched Port Analyzer (SPAN) or Encapsulated Remote Switched Port Analyzer (ERSPAN) sessions, use the **show monitor session** command.

**show monitor session** [*session* | **all** [**brief**] | **range** *range* [**brief**] | **status**]

## Syntax Description

| | |
|---|---|
| *session* | (Optional) Number of the session. The range is from 1 to 18. |
| **all** | (Optional) Displays all sessions. |
| **brief** | (Optional) Displays a brief summary of the information. |
| **range** *range* | (Optional) Displays a range of sessions. The range is from 1 to 18. |
| **status** | (Optional) Displays the operational state of all sessions.<br>**Note** This keyword applies only to SPAN sessions. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display information about SPAN session 1:

```
switch# show monitor session 1
session 1
---------------
description       : A Local SPAN session
type              : local
state             : down (No operational src/dst)
source intf       :
    rx            : Eth1/5
    tx            : Eth1/5
    both          : Eth1/5
source VLANs      :
    rx            :
source VSANs      :
    rx            :
destination ports : Eth1/21

Legend: f = forwarding enabled, l = learning enabled

switch#
```

This example shows how to display a brief information about a SPAN session:

```
switch# show monitor session range 1 brief
session 1
---------------
```

```
description       : A Local SPAN session
type              : local
state             : down (No operational src/dst)
source intf       :
    rx            : Eth1/5
    tx            : Eth1/5
    both          : Eth1/5
source VSANs      :
destination ports : Eth1/21

Legend: f = forwarding enabled, l = learning enabled

switch#
```

This example shows how to display the information about an ERSPAN session:

```
switch# show monitor session 1
session 1
---------------
description       : ERSPAN Source configuration
type              : erspan-source
state             : down (No valid global IP Address)
flow-id           : 1
vrf-name          : default
destination-ip    : 192.0.2.1
ip-ttl            : 255
ip-dscp            : 0
origin-ip         : origin-ip not specified
source intf       :
    rx            : Eth1/5
    tx            : Eth1/5
    both          : Eth1/5
source VLANs      :
    rx            : 5

switch#
```

## Related Commands

| Command | Description |
|---|---|
| **monitor session** | Creates a new Switched Port Analyzer (SPAN) session configuration. |
| **show running-config monitor** | Displays the running configuration information about SPAN sessions. |

# show mvr

To display information about Multicast VLAN Registration (MVR), use the **show mvr** command.

**show mvr**

## Syntax Description

This command has no arguments or keywords.

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display information about MVRs:

```
switch# show mvr
MVR Status          : enabled
Global MVR VLAN     : 5
Number of MVR VLANs : 1
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **mvr group** | Configures an MVR group for an interface. |
| **mvr type** | Configures an MVR port type for an interface. |
| **mvr vlan** | Configures an MVR VLAN for an interface. |
| **show mvr groups** | Displays the MVR groups. |
| **show mvr members** | Displays the active MVR groups. |

# show mvr groups

To display information about Multicast VLAN Registration (MVR) groups, use the **show mvr groups** command.

**show mvr groups**

## Syntax Description

This command has no arguments or keywords.

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display information about MVR groups:

```
switch# show mvr groups
```

## Related Commands

| Command | Description |
|---|---|
| **mvr group** | Configures an MVR group for an interface. |
| **mvr type** | Configures an MVR port type for an interface. |
| **mvr vlan** | Configures an MVR VLAN for an interface. |
| **show mvr members** | Displays the active MVR groups. |

# show mvr interface

To display information about Multicast VLAN Registration (MVR) interfaces, use the **show mvr interfaces** command.

**show mvr interface** [**ethernet** *slot/[QSFP-module/]port* | **port-channel** *channel-num* | **vethernet** *veth-num*]

## Syntax Description

| | |
|---|---|
| **ethernet** *slot/[QSFP-module/]port* | (Optional) Displays information about Ethernet IEEE 802.3z interfaces.The *slot* number is from 1 to 255. The *QSFP-module* number is from 1 to 4. The *port* number is from 1 to 128.<br>**Note** The *QSFP-module* number applies only to the QSFP+ Generic Expansion Module (GEM). |
| **port-channel** *channel-num* | (Optional) Displays information about EtherChannel interfaces. The range is from 1 to 4096. |
| **vethernet** *veth-num* | (Optional) Displays information about virtual Ethernet interfaces. The range is from 1 to 1048575. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 6.0(2)N1(1) | Support for the QSFP+ GEM was added. |
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display information about MVR interfaces:

```
switch# show mvr interface
a) Interface is not a switchport.
b) MVR receiver is not in access, pvlan host or pvlan promiscuous mode.
c) MVR source is in fex-fabric mode.
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **mvr group** | Configures an MVR group for an interface. |
| **mvr type** | Configures an MVR port type for an interface. |
| **mvr vlan** | Configures an MVR VLAN for an interface. |
| **show mvr members** | Displays the active MVR groups. |

# show mvr members

To display the active Multicast VLAN Registration (MVR) groups and receiver members, use the **show mvr members** command.

**show mvr members** [**count** | **interface** [**ethernet** *slot/[QSFP-module/]port* | **port-channel** *channel-num* | **vethernet** *veth-num*] | **vlan** *vlan-ID*]

## Syntax Description

| | |
|---|---|
| **count** | (Optional) Displays the active MVR groups on each MVR VLAN. |
| **interface** | (Optional) Displays the active MVR groups configured on an interface. |
| **ethernet** *slot/[QSFP-module/]port* | (Optional) Displays the active MVR groups configured on an Ethernet IEEE 802.3z interface.The *slot* number is from 1 to 255. The *QSFP-module* number is from 1 to 4. The *port* number is from 1 to 128.<br>**Note** The *QSFP-module* number applies only to the QSFP+ Generic Expansion Module (GEM). |
| **port-channel** *channel-num* | (Optional) Displays the active MVR groups configured on an EtherChannel interface. The range is from 1 to 4096. |
| **vethernet** *veth-num* | (Optional) Displays the active MVR groups configured on a virtual Ethernet interface. The range is from 1 to 1048575. |
| **vlan** *vlan-ID* | (Optional) Displays the active MVR groups on VLANs. The range is from 1 to 4094. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 6.0(2)N1(1) | Support for the QSFP+ GEM was added. |
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the active MVR groups:

```
switch# show mvr members
```

## Related Commands

| Command | Description |
|---|---|
| **mvr group** | Configures an MVR group for an interface. |
| **mvr type** | Configures an MVR port type for an interface. |
| **mvr vlan** | Configures an MVR VLAN for an interface. |
| **show mvr** | Displays general information about MVRs. |

# show mvr receiver-ports

To display the Multicast VLAN Registration (MVR) receiver ports, use the **show mvr receiver-ports** command.

**show mvr receiver-ports** [**ethernet** *slot/[QSFP-module/]port* | **port-channel** *channel-num* | **vethernet** *veth-num*]

## Syntax Description

| | |
|---|---|
| **ethernet** *slot/[QSFP-module/]port* | (Optional) Displays the MVR receiver ports on an Ethernet IEEE 802.3z interface.The *slot* number is from 1 to 255. The *QSFP-module* number is from 1 to 4. The *port* number is from 1 to 128.<br>**Note** The *QSFP-module* number applies only to the QSFP+ Generic Expansion Module (GEM). |
| **port-channel** *channel-num* | (Optional) Displays the MVR receiver ports on an EtherChannel interface. The range is from 1 to 4096. |
| **vethernet** *veth-num* | (Optional) Displays the MVR receiver ports on a virtual Ethernet interface. The range is from 1 to 1048575. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 6.0(2)N1(1) | Support for the QSFP+ GEM was added. |
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the MVR receiver ports:

```
switch# show mvr receiver-ports
```

## Related Commands

| Command | Description |
|---|---|
| **mvr group** | Configures an MVR group for an interface. |
| **mvr type** | Configures an MVR port type for an interface. |
| **mvr vlan** | Configures an MVR VLAN for an interface. |
| **show mvr** | Displays general information about MVRs. |
| **show mvr members** | Displays the active MVR groups. |

# show mvr source-ports

To display the Multicast VLAN Registration (MVR) source ports, use the **show mvr source-ports** command.

**show mvr source-ports** [**ethernet** *slot/[QSFP-module/]port* | **port-channel** *channel-num* | **vethernet** *veth-num*]

## Syntax Description

| | |
|---|---|
| **ethernet** *slot/[QSFP-module/]port* | (Optional) Displays the MVR source ports on an Ethernet IEEE 802.3z interface.The *slot* number is from 1 to 255. The *QSFP-module* number is from 1 to 4. The *port* number is from 1 to 128.<br>**Note** The *QSFP-module* number applies only to the QSFP+ Generic Expansion Module (GEM). |
| **port-channel** *channel-num* | (Optional) Displays the MVR source ports on an EtherChannel interface. The range is from 1 to 4096. |
| **vethernet** *veth-num* | (Optional) Displays the MVR source ports on a virtual Ethernet interface. The range is from 1 to 1048575. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 6.0(2)N1(1) | Support for the QSFP+ GEM was added. |
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the MVR source ports:

```
switch# show mvr source-ports
```

## Related Commands

| Command | Description |
|---|---|
| **mvr group** | Configures an MVR group for an interface. |
| **mvr type** | Configures an MVR port type for an interface. |
| **mvr vlan** | Configures an MVR VLAN for an interface. |
| **show mvr** | Displays general information about MVRs. |
| **show mvr members** | Displays the active MVR groups. |
| **show mvr receiver-ports** | Displays the MVR receiver ports. |

# show port-channel capacity

To display the total number of EtherChannel interfaces and the number of free or used EtherChannel interfaces, use the **show port-channel capacity** command.

**show port-channel capacity**

## Syntax Description

This command has no arguments or keywords.

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the EtherChannel capacity:

```
switch# show port-channel capacity
Port-channel resources
    768 total    29 used    739 free    3% used
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **port-channel load-balance ethernet** | Configures the load-balancing algorithm for EtherChannels. |
| **show tech-support port-channel** | Displays Cisco Technical Support information about EtherChannels. |

# show port-channel compatibility-parameters

To display the parameters that must be the same among the member ports in order to join an EtherChannel interface, use the **show port-channel compatibility-parameters** command.

**show port-channel compatibility-parameters**

## Syntax Description

This command has no arguments or keywords.

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the EtherChannel interface parameters:

```
switch# show port-channel compatibility-parameters
* port mode

Members must have the same port mode configured.

* port mode

Members must have the same port mode configured, either E,F or AUTO. If
they are configured in AUTO port mode, they have to negotiate E or F mode
when they come up. If a member negotiates a different mode, it will be
suspended.

* speed

Members must have the same speed configured. If they are configured in AUTO
speed, they have to negotiate the same speed when they come up. If a member
negotiates a different speed, it will be suspended.

* MTU

Members have to have the same MTU configured. This only applies to ethernet
port-channel.

* shut lan

Members have to have the same shut lan configured. This only applies to
ethernet port-channel.

* MEDIUM

Members have to have the same medium type configured. This only applies to
ethernet port-channel.
```

```
* Span mode

Members must have the same span mode.

* load interval

Member must have same load interval configured.
--More--
<---output truncated--->
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **port-channel load-balance ethernet** | Configures the load-balancing algorithm for EtherChannels. |
| **show tech-support port-channel** | Displays Cisco Technical Support information about EtherChannels. |

# show port-channel database

To display the aggregation state for one or more EtherChannel interfaces, use the **show port-channel database** command.

**show port-channel database** [**interface port-channel** *number*[*.subinterface-number*]]

## Syntax Description

| | |
|---|---|
| **interface** | (Optional) Displays information for an EtherChannel interface. |
| **port-channel** *number* | (Optional) Displays aggregation information for a specific EtherChannel interface. The *number* range is from 1 to 4096. |
| *.subinterface-number* | (Optional) Subinterface number. Use the EtherChannel number followed by a dot (.) indicator and the subinterface number. The format is *portchannel-number.subinterface-number*. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the aggregation state of all EtherChannel interfaces:

```
switch# show port-channel database
port-channel19
    Last membership update is successful
    4 ports in total, 4 ports up
    First operational port is Ethernet199/1/24
    Age of the port-channel is 0d:09h:11m:30s
    Time since last bundle is 0d:09h:12m:20s
    Last bundled member is
    Ports:   Ethernet199/1/24  [active ] [up] *
             Ethernet199/1/28  [active ] [up]
             Ethernet199/1/30  [active ] [up]
             Ethernet199/1/31  [active ] [up]

port-channel21
    Last membership update is successful
    1 ports in total, 1 ports up
    First operational port is Ethernet2/3
    Age of the port-channel is 0d:09h:11m:30s
    Time since last bundle is 0d:09h:12m:20s
    Last bundled member is
    Ports:   Ethernet2/3     [on] [up] *

port-channel50
    Last membership update is successful
--More--
<---output truncated--->
```

```
switch#
```

This example shows how to display the aggregation state for a specific EtherChannel interface:

```
switch# show port-channel database interface port-channel 21
port-channel21
    Last membership update is successful
    1 ports in total, 1 ports up
    First operational port is Ethernet2/3
    Age of the port-channel is 0d:09h:13m:14s
    Time since last bundle is 0d:09h:14m:04s
    Last bundled member is
    Ports:   Ethernet2/3     [on] [up] *

switch#
```

## Related Commands

| Command | Description |
|---|---|
| **port-channel load-balance ethernet** | Configures the load-balancing algorithm for EtherChannels. |
| **show tech-support port-channel** | Displays Cisco Technical Support information about EtherChannels. |

# show port-channel load-balance

To display information about EtherChannel load balancing, use the **show port-channel load-balance** command.

**show port-channel load-balance** [**forwarding-path interface port-channel** *number* {**.** | **vlan** *vlan_ID*} [**dst-ip** *ipv4-addr*] [**dst-ipv6** *ipv6-addr*] [**dst-mac** *dst-mac-addr*] [**l4-dst-port** *dst-port*] [**l4-src-port** *src-port*] [**src-ip** *ipv4-addr*] [**src-ipv6** *ipv6-addr*] [**src-mac** *src-mac-addr*]]

## Syntax Description

| | |
|---|---|
| **forwarding-path interface port-channel** | (Optional) Identifies the port in the EtherChannel interface that forwards the packet. |
| *number* | EtherChannel number for the load-balancing forwarding path that you want to display. The range is from 1 to 4096. |
| **.** | (Optional) Subinterface number separator. Use the EtherChannel number followed by a dot (.) indicator and the subinterface number. The format is *portchannel-number.subinterface-number*. |
| **vlan** | (Optional) Identifies the VLAN for hardware hashing. |
| *vlan_ID* | VLAN ID. The range is from 1 to 3967 and 4048 to 4093. |
| **dst-ip** | (Optional) Displays the load distribution on the destination IP address. |
| *ipv4-addr* | IPv4 address to specify a source or destination IP address. The format is *A.B.C.D*. |
| **dst-ipv6** | (Optional) Displays the load distribution on the destination IPv6 address. |
| *ipv6-addr* | IPv6 address to specify a source or destination IP address. The format is *A:B::C:D*. |
| **dst-mac** | (Optional) Displays the load distribution on the destination MAC address. |
| *dst-mac-addr* | Destination MAC address. The format is *AAAA:BBBB:CCCC*. |
| **l4-dst-port** | (Optional) Displays the load distribution on the destination port. |
| *dst-port* | Destination port number. The range is from 0 to 65535. |
| **l4-src-port** | (Optional) Displays the load distribution on the source port. |
| *src-port* | Source port number. The range is from 0 to 65535. |
| **src-ip** | (Optional) Displays the load distribution on the source IP address. |
| **src-ipv6** | (Optional) Displays the load distribution on the source IPv6 address. |
| **src-mac** | (Optional) Displays the load distribution on the source MAC address. |
| *src-mac-addr* | source MAC address. The format is *AA:BB:CC:DD:EE:FF*. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Usage Guidelines

You must use the **vlan** keyword to determine the use of hardware hashing.

When you do not use hardware hashing, the output displays all parameters used to determine the outgoing port ID. Missing parameters are shown as zero values in the output.

If you do not use hardware hashing, the outgoing port ID is determined by using control-plane selection. Hardware hashing is not used in the following scenarios:

- The specified VLAN contains an unknown unicast destination MAC address.
- The specified VLAN contains a known or an unknown multicast destination MAC or destination IP address.
- The specified VLAN contains a broadcast MAC address.
- The EtherChannel has only one active member.
- The destination MAC address is unknown when the load distribution is configured on the source IP address (src-ip), source port (l4-src-port), or source MAC address (src-mac).
- If multichassis EtherChannel trunk (MCT) is enabled and the traffic flows from a virtual port channel (vPC) peer link, the output displays “Outgoing port id (vPC peer-link traffic)”.

To get accurate results, you must do the following:

- (For unicast frames) Provide the destination MAC address (dst-mac) and the VLAN for hardware hashing (vlan). When the destination MAC address is not provided, hardware hashing is assumed.
- (For multicast frames) For IP multicast, provide either the destination IP address (dst-ip) or destination MAC address (dst-mac) with the VLAN for hardware hashing (vlan). For non-ip multicast, provide the destination MAC address with the VLAN for hardware hashing.
- (For broadcast frames) Provide the destination MAC address (dst-mac) and the VLAN for hardware hashing (vlan).

## Examples

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

```
switch# show port-channel load-balance
Port Channel Load-Balancing Configuration:
System: source-dest-ip

Port Channel Load-Balancing Addresses Used Per-Protocol:
Non-IP: source-dest-mac
IP: source-dest-ip source-dest-mac

switch#
```

Table 3 describes the fields shown in the display.

*Table 3 show port-channel load-balance Field Descriptions*

| Field | Description |
|---|---|
| System | The load-balancing method configured on the switch. |
| Non-IP | The field that will be used to calculate the hash value for non-IP traffic. |
| IP | The fileds used for IPv4 and IPv6 traffic. |

This example shows how to display the port channel load-balancing information when hardware hashing is not used:

```
switch# show port-channel load-balance forwarding-path interface port-channel 5 vlan 3
dst-ip 192.0.2.37
Missing params will be substituted by 0's.
Load-balance Algorithm on FEX: source-dest-ip
crc8_hash: Not Used     Outgoing port id: Ethernet133/1/3
Param(s) used to calculate load-balance (Unknown unicast, multicast and broadcas
t packets):
        dst-mac:  0000.0000.0000
        vlan id:  3
switch#
```

This example shows how to display the port channel load-balancing information when hardware hashing is not used to determine the outgoing port ID:

```
switch# show port-channel load-balance forwarding-path interface port-channel 10 vlan 1
dst-ip 192.0.2.25 src-ip 192.0.2.10 dst-mac ffff.ffff.ffff src-mac aa:bb:cc:dd:ee:ff
l4-src-port 0 l4-dst-port 1
Missing params will be substituted by 0's.
Load-balance Algorithm on switch: source-dest-port
crc8_hash: Not Used     Outgoing port id: Ethernet1/1
Param(s) used to calculate load-balance (Unknown unicast, multicast and broadcast
packets):
        dst-mac:  ffff.ffff.ffff
        vlan id:  1

switch#
```

This example shows how to display the port channel load-balancing information when MCT is enabled and traffic flows from a vPC peer link:

```
switch# show port-channel load-balance forwarding-path interface port-channel 10 vlan 1
dst-ip 192.0.2.25 src-ip 192.0.2.10 dst-mac ffff.ffff.ffff src-mac aa:bb:cc:dd:ee:ff
l4-src-port 0 l4-dst-port 1
Missing params will be substituted by 0's.
Load-balance Algorithm on switch: source-dest-port
crc8_hash: Not Used     Outgoing port id (non vPC peer-link traffic): ethernet1/2
crc8_hash: Not Used     Outgoing port id (vPC peer-link traffic): Ethernet1/1
Param(s) used to calculate load-balance (Unknown unicast, multicast and broadcast
packets):
        dst-mac:  ffff.ffff.ffff
        vlan id:  1

switch#
```

This example shows how to display the port channel load-balancing information when hardware hashing is used to determine the outgoing port ID:

```
switch# show port-channel load-balance forwarding-path interface port-channel 10 vlan 1
dst-ip 192.0.2.25 src-ip 192.0.2.10 src-mac aa:bb:cc:dd:ee:ff l4-src-port 0 l4-dst-port 1
```

```
Missing params will be substituted by 0's.
Load-balance Algorithm on switch: source-dest-port
crc8_hash: 204  Outgoing port id: Ethernet1/1
Param(s) used to calculate load-balance:
        dst-port: 1
        src-port: 0
        dst-ip:       192.0.2.25
        src-ip:       192.0.2.10
        dst-mac:  0000.0000.0000
       src-mac:  aabb.ccdd.eeff

switch#
```

## Related Commands

| Command | Description |
|---|---|
| **port-channel load-balance ethernet** | Configures the load-balancing method among the interfaces in the channel-group bundle. |

# show port-channel summary

To display summary information about EtherChannels, use the **show port-channel summary** command.

**show port-channel summary**

## Syntax Description

This command has no arguments or keywords.

## Command Default

None

## Command Modes

Global configuration mode
EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Usage Guidelines

Before you use this command, you must configure an EtherChannel group using the **interface port-channel** command.

## Examples

This example shows how to display summary information about EtherChannels:

```
switch# show port-channel summary
Flags:  D - Down        P - Up in port-channel (members)
        I - Individual  H - Hot-standby (LACP only)
        s - Suspended   r - Module-removed
        S - Switched    R - Routed
        U - Up (port-channel)
--------------------------------------------------------------------------------
Group Port-       Type     Protocol  Member Ports
      Channel
--------------------------------------------------------------------------------
1     Po1(SU)     Eth      LACP      Eth1/1(P)    Eth1/2(P)    Eth1/3(P)
                                     Eth1/4(P)    Eth1/21(P)   Eth1/22(P)
                                     Eth1/23(P)   Eth1/24(P)   Eth1/25(P)
                                     Eth1/26(P)   Eth1/27(P)   Eth1/28(P)
                                     Eth1/29(P)   Eth1/30(P)   Eth1/31(P)
                                     Eth1/32(P)
3     Po3(SU)     Eth      NONE      Eth1/9(P)    Eth1/10(P)   Eth1/13(P)
                                     Eth1/14(P)   Eth1/40(P)
5     Po5(SU)     Eth      NONE      Eth3/5(P)    Eth3/6(P)
6     Po6(SU)     Eth      NONE      Eth1/5(P)    Eth1/6(P)    Eth1/7(P)
                                     Eth1/8(P)
12    Po12(SU)    Eth      NONE      Eth3/3(P)    Eth3/4(P)
15    Po15(SD)    Eth      NONE      --
20    Po20(SU)    Eth      NONE      Eth1/17(P)   Eth1/18(P)   Eth1/19(D)
                                     Eth1/20(P)
24    Po24(SU)    Eth      LACP      Eth105/1/27(P)  Eth105/1/28(P)  Eth105/1/29
(P)
```

```
                                        Eth105/1/30(P)  Eth105/1/31(P)  Eth105/1/32
(P)
25    Po25(SU)    Eth      LACP         Eth105/1/23(P)  Eth105/1/24(P)  Eth105/1/25
(P)
                                        Eth105/1/26(P)
33    Po33(SD)    Eth      NONE         --
41    Po41(SD)    Eth      NONE         --
44    Po44(SD)    Eth      NONE         --
48    Po48(SD)    Eth      NONE         --
100   Po100(SD)   Eth      NONE         --
101   Po101(SD)   Eth      NONE         --
102   Po102(SU)   Eth      LACP         Eth102/1/2(P)
103   Po103(SU)   Eth      LACP         Eth102/1/3(P)
104   Po104(SU)   Eth      LACP         Eth102/1/4(P)
105   Po105(SU)   Eth      LACP         Eth102/1/5(P)
106   Po106(SU)   Eth      LACP         Eth102/1/6(P)
107   Po107(SU)   Eth      LACP         Eth102/1/7(P)
108   Po108(SU)   Eth      LACP         Eth102/1/8(P)
109   Po109(SU)   Eth      LACP         Eth102/1/9(P)
110   Po110(SU)   Eth      LACP         Eth102/1/10(P)
111   Po111(SU)   Eth      LACP         Eth102/1/11(P)
<---output truncated--->
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **channel-group (Ethernet)** | Assigns and configures a physical interface to an EtherChannel. |
| **interface port-channel** | Creates an EtherChannel interface and enters interface configuration mode. |

# show port-channel traffic

To display the traffic statistics for EtherChannels, use the **show port-channel traffic** command.

**show port-channel traffic [interface port-channel** *number*[**.***subinterface-number*]]

## Syntax Description

| | |
|---|---|
| **interface** | (Optional) Displays traffic statistics for a specified interface. |
| **port-channel** *number* | (Optional) Displays information for a specified EtherChannel. The range is from 1 to 4096. |
| *.subinterface-number* | (Optional) Subinterface number. Use the EtherChannel number followed by a dot (.) indicator and the subinterface number. The format is *portchannel-number.subinterface-number*. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the traffic statistics for all EtherChannels:

```
switch# show port-channel traffic
ChanId      Port Rx-Ucst Tx-Ucst Rx-Mcst Tx-Mcst Rx-Bcst Tx-Bcst
------ --------- ------- ------- ------- ------- ------- -------
    10    Eth1/7    0.0%    0.0%    0.0%    0.0%    0.0%    0.0%
    10    Eth1/8    0.0%    0.0%    0.0%    0.0%    0.0%    0.0%
    10    Eth1/9    0.0%    0.0%    0.0%    0.0%    0.0%    0.0%
    10   Eth1/10    0.0%    0.0%    0.0%    0.0%    0.0%    0.0%
------ --------- ------- ------- ------- ------- ------- -------
  4000    Eth1/1    0.0%    0.0%  99.64%  99.81%    0.0%    0.0%
  4000    Eth1/2    0.0%    0.0%   0.06%   0.06%    0.0%    0.0%
  4000    Eth1/3    0.0%    0.0%   0.23%   0.06%    0.0%    0.0%
  4000    Eth1/4    0.0%    0.0%   0.06%   0.06%    0.0%    0.0%
switch#
```

This example shows how to display the traffic statistics for a specific EtherChannel:

```
switch# show port-channel traffic interface port-channel 10
ChanId      Port Rx-Ucst Tx-Ucst Rx-Mcst Tx-Mcst Rx-Bcst Tx-Bcst
------ --------- ------- ------- ------- ------- ------- -------
    10    Eth1/7    0.0%    0.0%    0.0%    0.0%    0.0%    0.0%
    10    Eth1/8    0.0%    0.0%    0.0%    0.0%    0.0%    0.0%
    10    Eth1/9    0.0%    0.0%    0.0%    0.0%    0.0%    0.0%
    10   Eth1/10    0.0%    0.0%    0.0%    0.0%    0.0%    0.0%
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **port-channel load-balance ethernet** | Configures the load-balancing algorithm for EtherChannels. |
| **show tech-support port-channel** | Displays Cisco Technical Support information about EtherChannels. |

# show port-channel usage

To display the range of used and unused EtherChannel numbers, use the **show port-channel usage** command.

**show port-channel usage**

## Syntax Description

This command has no arguments or keywords.

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the EtherChannel usage information:

```
switch# show port-channel usage
Total 29 port-channel numbers used
============================================
Used  :   19 , 21 , 50 , 100 , 150 , 170 - 171 , 198 - 199 , 256
          301 , 400 - 401 , 1032 - 1033 , 1111 , 1504 , 1511 , 1514 , 1516 - 1520
          1532 , 1548 , 1723 , 1905 , 1912
Unused:   1 - 18 , 20 , 22 - 49 , 51 - 99 , 101 - 149 , 151 - 169
          172 - 197 , 200 - 255 , 257 - 300 , 302 - 399 , 402 - 1031
          1034 - 1110 , 1112 - 1503 , 1505 - 1510 , 1512 - 1513 , 1515 , 1521 - 1531
          1533 - 1547 , 1549 - 1722 , 1724 - 1904 , 1906 - 1911 , 1913 - 4096
          (some numbers may be in use by SAN port channels)

switch#
```

## Related Commands

| Command | Description |
|---|---|
| **port-channel load-balance ethernet** | Configures the load-balancing algorithm for EtherChannels. |
| **show tech-support port-channel** | Displays Cisco Technical Support information about EtherChannels. |

# show port-security

To display the port security configuration on an interface, use the **show port-security** command.

**show port-security** [**address** [**interface** {**ethernet** *slot/[QSFP-module/]port* | **port-channel** *channel-num*}] | **interface** {**ethernet** *slot/[QSFP-module/]port* | **port-channel** *channel-num*} | **state**]

## Syntax Description

| | |
|---|---|
| **address** | (Optional) Displays the secure MAC address of a port. |
| **interface** | (Optional) Displays the secure address for an interface. |
| **ethernet** *slot/[QSFP-module/]port* | (Optional) Displays the secure address for an Ethernet interface.The *slot* number is from 1 to 255. The *QSFP-module* number is from 1 to 4. The *port* number is from 1 to 128.<br>**Note** The *QSFP-module* number applies only to the QSFP+ Generic Expansion Module (GEM). |
| **port-channel** *channel-num* | (Optional) Displays the secure address for an EtherChannel interface. The channel number is from 1 to 4096. |
| **state** | (Optional) Displays whether a port is secure. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 6.0(2)N1(1) | Support for the QSFP+ GEM was added. |
| 5.2(1)N1(1) | This command was introduced. |

## Usage Guidelines

This command does not require a license.

## Examples

This example shows how to display the port security configuration on an interface:

```
switch# show port-security


Total Secured Mac Addresses in System (excluding one mac per port)     : 0
Max Addresses limit in System (excluding one mac per port) : 8192

--------------------------------------------------------------------------------
Secure Port  MaxSecureAddr  CurrentAddr  SecurityViolation  Security Action
               (Count)       (Count)          (Count)
--------------------------------------------------------------------------------
Ethernet1/5          10              0              0              Shutdown
================================================================================
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **clear port-security dynamic** | Clears the dynamically secured addresses on a port. |
| **show running-config port-security** | Displays the port security configuration information. |
| **switchport port-security** | Configures the switchport parameters to establish port security. |

# show provision

To display information about provision, use the **show provision** command.

**show provision failed-config** *slot-number*

## Syntax Description

| | |
|---|---|
| **failed-config** | Displays the configuration that failed to be applied to the slot. |
| *slot-number* | Slot number in the chassis. The range is from 2 to 199. |

## Command Default

None

## Command Modes

EXEC mode
Configuration synchronization mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the preprovisioning configuration that failed to be applied to slot 2:

```
switch# show provision failed-config 2
Config has not been applied yet for this slot.

switch#
```

This example shows how to display the preprovisioning configuration that failed to be applied to slot 2 in a switch profile:

```
switch(config-sync)# show provision failed-config 2
Config has not been applied yet for this slot.

switch(config-sync)#
```

## Related Commands

| Command | Description |
|---|---|
| **provision** | Preprovisions a module in a slot. |
| **show running-config exclude-provision** | Displays the running configuration excluding the preprovisioned features. |
| **slot** | Enables a slot for preprovisioning a module. |

# show resource

To display the number of resources currently available in the system, use the **show resource** command.

**show resource** [*resource*]

## Syntax Description

| | |
|---|---|
| *resource* | Resource name, which can be one of the following:<br>• **port-channel**—Displays the number of EtherChannels available in the system.<br>• **vlan**—Displays the number of VLANs available in the system.<br>• **vrf**—Displays the number of virtual routing and forwardings (VRFs) available in the system. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the resources available in the system:

```
switch# show resource

     Resource              Min       Max      Used    Unused     Avail
    -----------           -----     -----    ------  --------   -------
     vlan                 16        4094       509         0         3
     monitor-session       0           2         0         0         2
     vrf                   2        1000         2         0       998
     port-channel          0         768         2         0       766
     u4route-mem          32          32         1        31        31
     u6route-mem          16          16         1        15        15
     m4route-mem          58          58         0        58        58
     m6route-mem           8           8         0         8         8
     bundle-map            0          16         2         0        14

switch#
```

## Related Commands

| Command | Description |
|---|---|
| **show interface port-channel** | Displays information about EtherChannels. |

# show running-config

To display the contents of the currently running configuration file, use the **show running-config** command.

**show running-config** [**all**]

| Syntax Description | | |
|---|---|---|
| | **all** | (Optional) Displays the full operating information including default settings. |

**Command Default** None

**Command Modes** EXEC mode

| Command History | Release | Modification |
|---|---|---|
| | 5.2(1)N1(1) | This command was introduced. |

**Examples** This example shows how to display information on the running configuration:

```
switch# show running-config
```

This example shows how to display detailed information on the running configuration:

```
switch# show running-config all
```

| Related Commands | Command | Description |
|---|---|---|
| | **show startup-config** | Displays the contents of the startup configuration file. |

# show running-config backup

To display the running configuration for backup interfaces, use the **show running-config backup** command.

**show running-config backup** [**all**]

## Syntax Description

| | |
|---|---|
| **all** | (Optional) Displays backup interface information including default settings. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the running configuration for backup interfaces:

```
switch# show running-config backup

!Command: show running-config backup
!Time: Mon Jan 30 00:37:27 2013

version 6.0(2)N1(1)
feature flexlink

logging level Flexlink 5

interface port-channel300
  switchport backup interface port-channel301 preemption mode forced
  switchport backup interface port-channel301 multicast fast-convergence

interface port-channel500
  switchport backup interface port-channel501 preemption delay 36
  switchport backup interface port-channel501 multicast fast-convergence

interface port-channel502
  switchport backup interface port-channel503

interface port-channel504
  switchport backup interface Ethernet2/1

interface Ethernet1/2
  switchport backup interface Ethernet1/1

interface Ethernet1/20
  switchport backup interface Ethernet1/21

interface Ethernet2/2
```

```
  switchport backup interface port-channel507 preemption mode forced

switch#
```

This example shows how to display the detailed running configuration for backup interfaces:

```
switch# show running-config backup all

!Command: show running-config backup all
!Time: Mon Jan 30 00:37:27 2013

version 6.0(2)N1(1)
feature flexlink

logging level Flexlink 5

interface port-channel300
  switchport backup interface port-channel301 preemption mode forced
  switchport backup interface port-channel301 preemption delay 35
  switchport backup interface port-channel301 multicast fast-convergence

interface port-channel500
  switchport backup interface port-channel501 preemption mode off
  switchport backup interface port-channel501 preemption delay 36
  switchport backup interface port-channel501 multicast fast-convergence

interface port-channel502
  switchport backup interface port-channel503 preemption mode off
  switchport backup interface port-channel503 preemption delay 35

interface port-channel504
  switchport backup interface Ethernet2/1 preemption mode off
  switchport backup interface Ethernet2/1 preemption delay 35

interface Ethernet1/2
  switchport backup interface Ethernet1/1 preemption mode off
  switchport backup interface Ethernet1/1 preemption delay 35

interface Ethernet1/20
  switchport backup interface Ethernet1/21 preemption mode off
  switchport backup interface Ethernet1/21 preemption delay 35

interface Ethernet2/2
  switchport backup interface port-channel507 preemption mode forced
  switchport backup interface port-channel507 preemption delay 35

switch#
```

## Related Commands

| Command | Description |
|---|---|
| **show running-config flexlink** | Displays the Flex Links running configuration. |
| **show startup-config backup** | Displays the startup configuration for backup interfaces. |
| **show startup-config flexlink** | Displays the startup configuration for Flex Links. |

| Command | Description |
|---|---|
| **show tech-support backup** | Displays troubleshooting information for backup interfaces. |
| **show tech-support flexlink** | Displays troubleshooting information for Flex Links. |

# show running-config exclude-provision

To display the running configuration without the configuration for offline preprovisioned interfaces, use the **show running-config exclude-provision** command.

**show running-config exclude-provision**

## Syntax Description

This command has no arguments or keywords.

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the running configuration without the offline preprovisioned interfaces:

```
switch# show running-config exclude-provision

!Command: show running-config exclude-provision
!Time: Mon Jan 30 00:37:27 2013

version 6.0(2)N1(1)
feature fcoe

feature telnet
feature tacacs+
cfs ipv4 distribute
cfs eth distribute
feature udld
feature interface-vlan
feature lacp
feature vpc
feature lldp
feature vtp
feature fex

username admin password 5 $1$wmFN7Wly$/pjqx1DfAkCCAg/KyxbUz/  role network-admin
username install password 5 !  role network-admin
username praveena password 5 !  role network-operator
no password strength-check
ip domain-lookup
ip domain-lookup
tacacs-server host 192.0.2.54 key 7 "wawy1234"
tacacs-server host 192.0.2.37
tacacs-server host 192.0.2.37 test username user1
aaa group server tacacs+ t1
    server 192.0.2.54
```

```
aaa group server tacacs+ tacacs
radius-server host 192.168.128.5 key 7 "KkwyCet" authentication accounting
aaa group server radius r1
    server 192.0.2.5
hostname BEND-2
vlan dot1Q tag native
logging event link-status default
logging event trunk-status default
no service recover-errdisable
errdisable recovery interval 600
no errdisable detect cause link-flap
errdisable recovery cause link-flap
errdisable recovery cause udld
--More--
<--output truncated-->
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **copy running-config startup-config** | Copies the running configuration to the startup configuration. |
| **provision** | Preprovisions a module in a slot. |
| **show provision** | Displays the preprovisioned module information. |
| **show startup-config exclude-provision** | Displays the startup configuration without the preprovisioning information for offline interfaces. |
| **slot** | Configures a chassis slot for a predefined module. |

# show running-config flexlink

To display the running configuration for Flex Links, use the **show running-config flexlink** command.

**show running-config flexlink** [**all**]

## Syntax Description

| | |
|---|---|
| **all** | (Optional) Displays Flex Links information including default settings. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the running configuration for Flex Links:

```
switch# show running-config flexlink

!Command: show running-config flexlink
!Time: Mon Jan 30 00:37:27 2013

version 6.0(2)N1(1)
feature flexlink

logging level Flexlink 5

interface port-channel300
  switchport backup interface port-channel301 preemption mode forced
  switchport backup interface port-channel301 multicast fast-convergence

interface port-channel500
  switchport backup interface port-channel501 preemption delay 36
  switchport backup interface port-channel501 multicast fast-convergence

interface port-channel502
  switchport backup interface port-channel503

interface port-channel504
  switchport backup interface Ethernet2/1

interface Ethernet1/2
  switchport backup interface Ethernet1/1

interface Ethernet1/20
  switchport backup interface Ethernet1/21

interface Ethernet2/2
  switchport backup interface port-channel507 preemption mode forced

switch#
```

This example shows how to display the detailed running configuration for Flex Links:

```
switch# show running-config flexlink all

!Command: show running-config flexlink all
!Time: Mon Jan 30 00:37:27 2013

version 6.0(2)N1(1)
feature flexlink

logging level Flexlink 5

interface port-channel300
  switchport backup interface port-channel301 preemption mode forced
  switchport backup interface port-channel301 preemption delay 35
  switchport backup interface port-channel301 multicast fast-convergence

interface port-channel500
  switchport backup interface port-channel501 preemption mode off
  switchport backup interface port-channel501 preemption delay 36
  switchport backup interface port-channel501 multicast fast-convergence

interface port-channel502
  switchport backup interface port-channel503 preemption mode off
  switchport backup interface port-channel503 preemption delay 35

interface port-channel504
  switchport backup interface Ethernet2/1 preemption mode off
  switchport backup interface Ethernet2/1 preemption delay 35

interface Ethernet1/2
  switchport backup interface Ethernet1/1 preemption mode off
  switchport backup interface Ethernet1/1 preemption delay 35

interface Ethernet1/20
  switchport backup interface Ethernet1/21 preemption mode off
  switchport backup interface Ethernet1/21 preemption delay 35

interface Ethernet2/2
  switchport backup interface port-channel507 preemption mode forced
  switchport backup interface port-channel507 preemption delay 35

switch#
```

## Related Commands

| Command | Description |
|---|---|
| **show running-config backup** | Displays the running configuration information for backup interfaces. |
| **show startup-config backup** | Displays the startup configuration for backup interfaces. |
| **show startup-config flexlink** | Displays the startup configuration for Flex Links. |
| **show tech-support backup** | Displays troubleshooting information for backup interfaces. |
| **show tech-support flexlink** | Displays troubleshooting information for Flex Links. |

# show running-config interface

To display the running configuration for a specific port channel, use the **show running-config interface** command.

**show running-config interface** [{**ethernet** *slot/[QSFP-module/]port* | **fc** *slot/port* | **loopback** *number* | **mgmt** *0* | **port-channel** *channel-number* [**membership**] | **vethernet** *veth-id*| **vlan** *vlan-id*}] [**all** | **expand-port-profile**]

## Syntax Description

| | |
|---|---|
| **ethernet** *slot/[QSFP-module/]port* | (Optional) Displays the Ethernet interface slot number and port number.The *slot* number is from 1 to 255. The *QSFP-module* number is from 1 to 4. The *port* number is from 1 to 128.<br>**Note** The *QSFP-module* number applies only to the QSFP+ Generic Expansion Module (GEM). |
| **fc** *slot/port* | (Optional) Displays the configuration information of the Fibre Channel interface. The slot number is from 1 to 2 and the port number is from 1 to 48. |
| **loopback** *number* | (Optional) Displays the number of the loopback interface. The range of values is from 1 to 4096. |
| **mgmt** *0* | (Optional) Displays the configuration information of the management interface. |
| **port-channel** *channel-number* | (Optional) Displays the number of the port-channel group. The range of values is from 0 to 1023. |
| **membership** | Displays the membership of the specified port channel. |
| **vethernet** *veth-id* | (Optional) Displays the configuration information of the virtual Ethernet interface. The range is from 1 to 1048575. |
| **vlan** *vlan-id* | (Optional) Displays the configuration information of the VLAN. The range of values is from 1 to 4096. |
| **all** | (Optional) Displays configured and default information. |
| **expand-port-profile** | (Optional) Displays the configuration information of port profiles. |

## Command Default

None

## Command Modes

Any command mode

## Command History

| Release | Modification |
|---|---|
| 6.0(2)N1(1) | Support for the QSFP+ GEM was added. |
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the running configuration for port channel 10:

```
switch(config)# show running-config interface port-channel 10
```

```
version 6.0(2)

interface port-channel10
  switchport
  switchport mode trunk

switch(config)#
```

This example shows how to display the running configuration for a virtual Ethernet interface:

```
switch# show running-config interface vethernet 10

!Command: show running-config interface Vethernet10
!Time: Mon Jan 30 00:37:27 2013

version 6.0(2)N1(1)

interface Vethernet10
  inherit port-profile ppVEth
  untagged cos 3
  switchport access vlan 101
  bind interface Ethernet1/5 channel 10

switch#
```

This example shows how to display the running configuration for VLAN 5 that has been configured as an SVI to be used for in-band management:

```
switch# show running-config interface vlan 5

!Command: show running-config interface Vlan5
!Time: Mon Jan 30 00:37:27 2013

version 6.0(2)N1(1)

interface Vlan5
  management

switch#
```

## Related Commands

| Command | Description |
|---|---|
| **show startup-config** | Displays the running configuration on the device. |

# show running-config monitor

To display the running configuration for the Switched Port Analyzer (SPAN) or Encapsulated Remote Switched Port Analyzer (ERSPAN) session, use the **show running-config monitor** command.

**show running-config monitor** [**all**]

## Syntax Description

| | |
|---|---|
| **all** | (Optional) Displays current SPAN configuration information including default settings. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display information on the running SPAN configuration:

```
switch# show running-config monitor

!Command: show running-config monitor
!Time: Mon Jan 30 00:37:27 2013

version 6.0(2)N1(1)
monitor session 1
  description A Local SPAN session
  source interface Ethernet1/5 both
  destination interface Ethernet1/21
  no shut

switch#
```

This example shows how to display detailed information on the running SPAN configuration:

```
switch# show running-config monitor all

!Command: show running-config monitor all
!Time: Mon Jan 30 00:37:27 2013

version 6.0(2)N1(1)
monitor session 1 type local
  description A Local SPAN session
  source interface Ethernet1/5 both
  destination interface Ethernet1/21
  no shut

switch#
```

**Related Commands**

| Command | Description |
|---|---|
| **monitor session** | Configures SPAN or ERSPAN sessions. |
| **show monitor session** | Displays information about SPAN or ERSPAN sessions. |

# show running-config port-security

To display the running system configuration information about secure ports, use the **show running-config port-security** command.

**show running-config port-security** [**all**]

| Syntax Description | | |
|---|---|---|
| | **all** | (Optional) Displays detailed information about secure ports, including default settings. |

**Command Default** None

**Command Modes** EXEC mode

| Command History | Release | Modification |
|---|---|---|
| | 5.2(1)N1(1) | This command was introduced. |

**Usage Guidelines** This command does not require a license.

**Examples** This example shows how to display the running system configuration of all secure ports on an interface:

```
switch# show running-config port-security

!Command: show running-config port-security
!Time: Mon Jan 30 00:37:27 2013


version 6.0(2)N1(1)
feature port-security


interface Ethernet1/5
  switchport port-security
  switchport port-security aging time 3
  switchport port-security maximum 10
  switchport port-security mac-address sticky

switch#
```

## Related Commands

| Command | Description |
|---|---|
| **clear port-security dynamic** | Clears the dynamically secured addresses on a port. |
| **show startup-config port-security** | Displays the configuration information in the startup file. |

# show running-config spanning-tree

To display the running configuration for the Spanning Tree Protocol (STP), use the **show running-config spanning-tree** command.

**show running-config spanning-tree** [**all**]

## Syntax Description

| | |
|---|---|
| **all** | (Optional) Displays current STP operating information including default settings. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display information on the running STP configuration:

```
switch# show running-config spanning-tree
```

This example shows how to display detailed information on the running STP configuration:

```
switch# show running-config spanning-tree all
```

**Note** Display output differs slightly depending on whether you are running Rapid Per VLAN Spanning Tree Plus (Rapid PVST+) or Multiple Spanning Tree (MST).

This example shows how to display information on the running STP configuration, including the spanning tree pseudo information:

```
switch# show running-config spanning-tree
spanning-tree domain 1
spanning-tree pseudo-information
  mst 1 root priority 4096
  mst 2 designated priority 4096
interface port-channel1
  spanning-tree port type network
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **show spanning-tree** | Displays information about STP. |

# show running-config vlan

To display the running configuration for a specified VLAN, use the **show running-config vlan** command.

**show running-config vlan** *vlan-id*

| Syntax Description | | |
|---|---|---|
| | *vlan-id* | Number of VLAN or range of VLANs. Valid numbers are from 1 to 4096. |

**Command Default** None

**Command Modes** EXEC mode

| Command History | Release | Modification |
|---|---|---|
| | 5.2(1)N1(1) | This command was introduced. |

**Usage Guidelines** This command provides information on the specified VLAN, including private VLANs.

The display varies with your configuration. If you have configured the VLAN name, shutdown status, or suspended status, these are also displayed.

**Examples** This example shows how to display the running configuration for VLAN 5:

```
switch# show running-config vlan 5
```

| Related Commands | Command | Description |
|---|---|---|
| | **show vlan** | Displays information about all the VLANs on the switch. |

# show running-config vtp

To display the VLAN Trunking Protocol (VTP) running configuration, use the **show running-config vtp** command.

**show running-config vtp**

## Syntax Description

This command has no arguments or keywords.

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the VTP running configuration on the switch:

```
switch# show running-config vtp

!Command: show running-config vtp
!Time: Mon Jan 30 00:37:27 2013

version 6.0(2)N1(1)

feature vtp

vtp mode transparent
vtp domain MyDomain
vtp file bootflash:/myvtp.txt


switch#
```

## Related Commands

| Command | Description |
|---|---|
| **copy running-config startup-config** | Copies the running configuration to the startup configuration file. |
| **feature vtp** | Enables VTP on the switch. |
| **vtp domain** | Configures the VTP administrative domain. |
| **vtp file** | Stores the VTP configuration in a file. |
| **vtp mode** | Configures a VTP device mode. |

# show spanning-tree

To display information about the Spanning Tree Protocol (STP), use the **show spanning-tree** command.

**show spanning-tree** [**blockedports** | **inconsistentports** | **pathcost method**]

## Syntax Description

| | |
|---|---|
| **blockedports** | (Optional) Displays the alternate ports blocked by STP. |
| **inconsistentports** | (Optional) Displays the ports that are in an inconsistent STP state. |
| **pathcost method** | (Optional) Displays whether short or long path cost method is used. The method differs for Rapid Per VLAN Spanning Tree Plus (Rapid PVST+) (configurable, default is short) and Multiple Spanning Tree (MST) (nonconfigurable, operational value is always long). |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Usage Guidelines

The STP port type displays only when you have configured the port as either an STP edge port or an STP network port. If you have not configured the STP port type, no port type displays.

Table 4 describes the fields that are displayed in the output of **show spanning-tree** commands.

*Table 4 show spanning-tree Command Output Fields*

| Field | Definition |
|---|---|
| Role | Current port STP role. Valid values are as follows:<br>• Desg (designated)<br>• Root<br>• Altn (alternate)<br>• Back (backup) |

*Table 4 show spanning-tree Command Output Fields (continued)*

| Field | Definition |
|---|---|
| Sts | Current port STP state. Valid values are as follows:<br>• BLK (blocking)<br>• DIS (disabled)<br>• LRN (learning)<br>• FWD (forwarding) |
| Type | Status information. Valid values are as follows:<br>• P2p/Shr—The interface is considered as a point-to-point (shared) interface by the spanning tree.<br>• Edge—The port is configured as an STP edge port (either globally using the **default** command or directly on the interface) and no BPDU has been received.<br>• Network—The port is configured as an STP network port (either globally using the **default** command or directly on the interface).<br>• *ROOT_Inc, *LOOP_Inc, *PVID_Inc, *BA_Inc, and *TYPE_Inc—The port is in a broken state (BKN*) for an inconsistency. The broken states are Root inconsistent, Loopguard inconsistent, PVID inconsistent, Bridge Assurance inconsistent, or Type inconsistent. |

**Note** Display output differs slightly depending on whether you are running Rapid Per VLAN Spanning Tree Plus (Rapid PVST+) or Multiple Spanning Tree (MST).

## Examples

This example shows how to display spanning tree information:

```
switch# show spanning-tree

VLAN0001
  Spanning tree enabled protocol rstp
  Root ID    Priority    1
             Address     000d.ecb0.fdbc
             Cost        2
             Port        4096 (port-channel1)
             Hello Time  2  sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID  Priority    61441  (priority 61440 sys-id-ext 1)
             Address     0005.9b78.6e7c
             Hello Time  2  sec  Max Age 20 sec  Forward Delay 15 sec

Interface        Role Sts Cost      Prio.Nbr Type
---------------- ---- --- --------- -------- --------------------------------
Po1              Root FWD 1         128.4096 (vPC peer-link) Network P2p
Po3              Root FWD 1         128.4098 (vPC) P2p
Po123            Desg FWD 4         128.4218 Edge P2p
Eth1/11          Desg BKN*2         128.139  P2p *TYPE_Inc
Eth1/12          Desg BKN*2         128.140  P2p *TYPE_Inc
Eth1/15          Desg BKN*2         128.143  P2p *TYPE_Inc
Eth1/16          Desg BKN*2         128.144  P2p *TYPE_Inc
Eth1/33          Desg FWD 2         128.161  Edge P2p
Eth1/35          Desg FWD 2         128.163  Edge P2p
```

```
Eth1/36          Desg FWD 2         128.164  Edge P2p
Eth1/38          Desg FWD 2         128.166  Edge P2p
Eth100/1/1       Desg FWD 1         128.1025 (vPC) Edge P2p
Eth100/1/2       Desg FWD 1         128.1026 (vPC) Edge P2p
Eth100/1/3       Desg FWD 1         128.1027 (vPC) Edge P2p
Eth100/1/4       Desg FWD 1         128.1028 (vPC) Edge P2p
--More--
switch#
```

This example shows how to display the blocked ports in spanning tree:

```
switch# show spanning-tree blockedports

Name                 Blocked Interfaces List
-------------------- ------------------------------------
VLAN0001             Eth1/11, Eth1/12, Eth1/15, Eth1/16


Number of blocked ports (segments) in the system : 4

switch#
```

This example shows how to determine if any ports are in any STP-inconsistent state:

```
switch# show spanning-tree inconsistentports

Name                 Interface              Inconsistency
-------------------- ---------------------- ------------------
VLAN0001             Eth1/11                Port Type Inconsistent
VLAN0001             Eth1/12                Port Type Inconsistent
VLAN0001             Eth1/15                Port Type Inconsistent
VLAN0001             Eth1/16                Port Type Inconsistent


Number of inconsistent ports (segments) in the system : 4

switch#
```

This example shows how to display the path cost method:

```
switch(config)# show spanning-tree pathcost method
Spanning tree default pathcost method used is short
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **show spanning-tree active** | Displays information about STP active interfaces only. |
| **show spanning-tree bridge** | Displays the bridge ID, timers, and protocol for the local bridge on the switch. |
| **show spanning-tree brief** | Displays a brief summary about STP. |
| **show spanning-tree detail** | Displays detailed information about STP. |
| **show spanning-tree interface** | Displays the STP interface status and configuration of specified interfaces. |
| **show spanning-tree mst** | Displays information about Multiple Spanning Tree (MST) STP. |

| Command | Description |
|---|---|
| **show spanning-tree root** | Displays the status and configuration of the root bridge for the STP instance to which this switch belongs. |
| **show spanning-tree summary** | Displays summary information about STP. |
| **show spanning-tree vlan** | Displays STP information for specified VLANs. |

# show spanning-tree active

To display Spanning Tree Protocol (STP) information on STP-active interfaces only, use the **show spanning-tree active** command.

**show spanning-tree active** [**brief** | **detail**]

## Syntax Description

| | |
|---|---|
| **brief** | (Optional) Displays a brief summary of STP interface information. |
| **detail** | (Optional) Displays a detailed summary of STP interface information. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display STP information on the STP-active interfaces:

```
switch# show spanning-tree active
```

## Related Commands

| Command | Description |
|---|---|
| **show spanning-tree** | Displays information about STP. |
| **show spanning-tree bridge** | Displays the bridge ID, timers, and protocol for the local bridge on the switch. |
| **show spanning-tree brief** | Displays a brief summary about STP. |
| **show spanning-tree detail** | Displays detailed information about STP. |
| **show spanning-tree interface** | Displays the STP interface status and configuration of specified interfaces. |
| **show spanning-tree mst** | Displays information about Multiple Spanning Tree (MST) STP. |
| **show spanning-tree root** | Displays the status and configuration of the root bridge for the STP instance to which this switch belongs. |
| **show spanning-tree summary** | Displays summary information about STP. |
| **show spanning-tree vlan** | Displays STP information for specified VLANs. |

# show spanning-tree bridge

To display the status and configuration of the local Spanning Tree Protocol (STP) bridge, use the **show spanning-tree bridge** command.

**show spanning-tree bridge** [**address** | **brief** | **detail** | **forward-time** | **hello-time** | **id** | **max-age** | **priority** [**system-id**] | **protocol**]

## Syntax Description

| | |
|---|---|
| **address** | (Optional) Displays the MAC address for the STP local bridge. |
| **brief** | (Optional) Displays a brief summary of the status and configuration for the STP bridge. |
| **detail** | (Optional) Displays a detailed summary of the status and configuration for the STP bridge. |
| **forward-time** | (Optional) Displays the STP forward delay interval for the bridge. |
| **hello-time** | (Optional) Displays the STP hello time for the bridge. |
| **id** | (Optional) Displays the STP bridge identifier for the bridge. |
| **max-age** | (Optional) Displays the STP maximum-aging time for the bridge. |
| **priority** | (Optional) Displays the bridge priority for this bridge. |
| **system-id** | (Optional) Displays the bridge priority with the system ID extension for this bridge. |
| **protocol** | (Optional) Displays whether the Rapid Per VLAN Spanning Tree Plus (Rapid PVST+) or Multiple Spanning Tree (MST) protocol is active. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display STP information for the bridge:

```
switch# show spanning-tree bridge

                                                     Hello  Max  Fwd
Vlan                        Bridge ID                 Time  Age  Dly  Protocol
---------------- --------------------------------- -----  ---  ---  --------
VLAN0001            32769 (32768,1) 0005.9b74.a6fc    2    20   15  rstp
VLAN0005            32773 (32768,5) 0005.9b74.a6fc    2    20   15  rstp
switch#
```

This example shows how to display detailed STP information for the bridge:

```
switch# show spanning-tree bridge detail
```

```
VLAN0001
  Bridge ID  Priority    32769  (priority 32768 sys-id-ext 1)
             Address     0005.9b74.a6fc
             Hello Time  2  sec  Max Age 20 sec  Forward Delay 15 sec
VLAN0005
  Bridge ID  Priority    32773  (priority 32768 sys-id-ext 5)
             Address     0005.9b74.a6fc
             Hello Time  2  sec  Max Age 20 sec  Forward Delay 15 sec
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **spanning-tree bridge assurance** | Enables Bridge Assurance on all network ports on the switch. |
| **show spanning-tree summary** | Displays summary information about STP. |

# show spanning-tree brief

To display a brief summary of the Spanning Tree Protocol (STP) status and configuration on the switch, use the **show spanning-tree brief** command.

**show spanning-tree brief** [**active**]

## Syntax Description

| | |
|---|---|
| **active** | (Optional) Displays information about STP active interfaces only. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

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

```
switch(config)# show spanning-tree brief

VLAN0001
  Spanning tree enabled protocol rstp
  Root ID    Priority    32769
             Address     000d.ecb0.fc7c
             Cost        1
             Port        4495 (port-channel400)
             Hello Time  2  sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID  Priority    32769  (priority 32768 sys-id-ext 1)
             Address     000d.ece7.df7c
             Hello Time  2  sec  Max Age 20 sec  Forward Delay 15 sec

Interface        Role Sts Cost      Prio.Nbr Type
---------------- ---- --- --------- -------- --------------------------------
Po19             Desg FWD 1         128.4114 Edge P2p
Po400            Root FWD 1         128.4495 (vPC peer-link) Network P2p
Eth170/1/17      Desg FWD 2         128.3857 Edge P2p
Eth171/1/7       Desg FWD 1         128.3975 (vPC) Edge P2p
Eth171/1/8       Desg FWD 1         128.3976 (vPC) Edge P2p
Eth198/1/11      Desg FWD 1         128.1291 (vPC) Edge P2p
Eth199/1/13      Desg FWD 2         128.1677 Edge P2p


VLAN0300
  Spanning tree enabled protocol rstp
  Root ID    Priority    4396
--More--
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **show spanning-tree** | Displays information about STP. |
| **show spanning-tree active** | Displays information about STP active interfaces only. |
| **show spanning-tree bridge** | Displays the bridge ID, timers, and protocol for the local bridge on the switch. |
| **show spanning-tree detail** | Displays detailed information about STP. |
| **show spanning-tree interface** | Displays the STP interface status and configuration of specified interfaces. |
| **show spanning-tree mst** | Displays information about Multiple Spanning Tree (MST) STP. |
| **show spanning-tree root** | Displays the status and configuration of the root bridge for the STP instance to which this switch belongs. |
| **show spanning-tree summary** | Displays summary information about STP. |
| **show spanning-tree vlan** | Displays STP information for specified VLANs. |

# show spanning-tree detail

To display detailed information on the Spanning Tree Protocol (STP) status and configuration on the switch, use the **show spanning-tree detail** command.

**show spanning-tree detail** [**active**]

## Syntax Description

| | |
|---|---|
| **active** | (Optional) Displays information about STP active interfaces only. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display detailed information on the STP configuration:

```
switch# show spanning-tree detail

 VLAN0001 is executing the rstp compatible Spanning Tree protocol
  Bridge Identifier has priority 32768, sysid 1, address 0005.9b23.407c
  Configured hello time 2, max age 20, forward delay 15
  We are the root of the spanning tree
  Topology change flag not set, detected flag not set
  Number of topology changes 0 last change occurred 663:31:38 ago
  Times:  hold 1, topology change 35, notification 2
          hello 2, max age 20, forward delay 15
  Timers: hello 0, topology change 0, notification 0

 Port 159 (Ethernet1/31) of VLAN0001 is designated forwarding
   Port path cost 2, Port priority 128, Port Identifier 128.159
   Designated root has priority 32769, address 0005.9b23.407c
   Designated bridge has priority 32769, address 0005.9b23.407c
   Designated port id is 128.159, designated path cost 0
   Timers: message age 0, forward delay 0, hold 0
   Number of transitions to forwarding state: 1
   The port type is edge by port type edge trunk configuration
   Link type is point-to-point by default
   Bpdu guard is enabled
   Bpdu filter is enabled
   BPDU: sent 0, received 0

switch#
```

## Related Commands

| Command | Description |
|---|---|
| **show spanning-tree** | Displays information about STP. |
| **show spanning-tree active** | Displays information about STP active interfaces only. |
| **show spanning-tree bridge** | Displays the bridge ID, timers, and protocol for the local bridge on the switch. |
| **show spanning-tree brief** | Displays a brief summary about STP. |
| **show spanning-tree interface** | Displays the STP interface status and configuration of specified interfaces. |
| **show spanning-tree mst** | Displays information about Multiple Spanning Tree (MST) STP. |
| **show spanning-tree root** | Displays the status and configuration of the root bridge for the STP instance to which this switch belongs. |
| **show spanning-tree summary** | Displays summary information about STP. |
| **show spanning-tree vlan** | Displays STP information for specified VLANs. |

# show spanning-tree interface

To display information on the Spanning Tree Protocol (STP) interface status and configuration of specified interfaces, use the **show spanning-tree interface** command.

**show spanning-tree interface** {**ethernet** *slot/[QSFP-module/]port* | **port-channel** *number*} [**active** [**brief** | **detail**] | **brief** [**active**] | **cost** | **detail** [**active**] | **edge** | **inconsistency** | **priority** | **rootcost** | **state**]

## Syntax Description

| | |
|---|---|
| **interface** | Specifies the interface. The interface can be Ethernet or EtherChannel. |
| **ethernet** *slot/[QSFP-module/]port* | Specifies the Ethernet interface slot number and port number. The *slot* number is from 1 to 255. The *QSFP-module* number is from 1 to 4. The *port* number is from 1 to 128.<br>**Note** The *QSFP-module* number applies only to the QSFP+ Generic Expansion Module (GEM). |
| **port-channel** *number* | Specifies the EtherChannel interface and number. The EtherChannel number is from 1 to 4096. |
| **active** | (Optional) Displays information about STP active interfaces only on the specified interfaces. |
| **brief** | (Optional) Displays brief summary of STP information on the specified interfaces. |
| **detail** | (Optional) Displays detailed STP information about the specified interfaces. |
| **cost** | (Optional) Displays the STP path cost for the specified interfaces. |
| **edge** | (Optional) Displays the STP-type edge port information for the specified interfaces. |
| **inconsistency** | (Optional) Displays the port STP inconsistency state for the specified interfaces. |
| **priority** | (Optional) Displays the STP port priority for the specified interfaces. |
| **rootcost** | (Optional) Displays the path cost to the root for specified interfaces. |
| **state** | (Optional) Displays the current port STP state. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 6.0(2)N1(1) | Support for the QSFP+ GEM was added. |
| 5.2(1)N1(1) | This command was introduced. |

## Usage Guidelines

The STP port type displays only when you have configured the port as either an STP edge port or an STP network port. If you have not configured the STP port type, no port type displays.

If you specify an interface that is not running STP, the switch returns an error message.

When you are running Multiple Spanning Tree (MST), this command displays the Per VLAN Spanning Tree (PVST) simulation setting.

**Note** If you are running Multiple Spanning Tree (MST), use the **show spanning-tree mst** command to show more detail on the specified interfaces.

## Examples

This example shows how to display STP information on a specified interface:

```
switch(config)# show spanning-tree interface ethernet 1/3
```

This example shows how to display detailed STP information on a specified interface:

```
switch(config)# show spanning-tree interface ethernet 1/3 detail
```

## Related Commands

| Command | Description |
|---|---|
| **show spanning-tree** | Displays information about STP. |
| **show spanning-tree active** | Displays information about STP active interfaces only. |
| **show spanning-tree bridge** | Displays the bridge ID, timers, and protocol for the local bridge on the switch. |
| **show spanning-tree brief** | Displays a brief summary about STP. |
| **show spanning-tree detail** | Displays detailed information about STP. |
| **show spanning-tree mst** | Displays information about Multiple Spanning Tree (MST) STP. |
| **show spanning-tree root** | Displays the status and configuration of the root bridge for the STP instance to which this switch belongs. |
| **show spanning-tree summary** | Displays summary information about STP. |
| **show spanning-tree vlan** | Displays STP information for specified VLANs. |

# show spanning-tree mst

To display information on Multiple Spanning Tree (MST) status and configuration, use the **show spanning-tree mst** command.

**show spanning-tree mst** [*instance-id* [**detail | interface** {**ethernet** *slot/[QSFP-module/]port* | **port-channel** *number*} [**detail**]]

**show spanning-tree mst** [**configuration** [**digest**]]

**show spanning-tree mst** [**detail | interface** {**ethernet** *slot/[QSFP-module/]port* | **port-channel** *number*} [**detail**]]

## Syntax Description

| | |
|---|---|
| *instance-id* | (Optional) Multiple Spanning Tree (MST) instance range that you want to display. For example, 0 to 3, 5, 7 to 9. |
| **detail** | (Optional) Displays detailed Multiple Spanning Tree (MST) information. |
| **interface** | (Optional) Specifies the interface. The interface can be Ethernet or EtherChannel. |
| **ethernet** *slot/[QSFP-module/]port* | (Optional) Specifies the Ethernet interface and its slot number and port number. The *slot* number is from 1 to 255. The *QSFP-module* number is from 1 to 4. The *port* number is from 1 to 128.<br>**Note** The *QSFP-module* number applies only to the QSFP+ Generic Expansion Module (GEM). |
| **port-channel** *number* | (Optional) Specifies the EtherChannel interface and number. The EtherChannel number is from 1 to 4096. |
| **configuration** | (Optional) Displays current Multiple Spanning Tree (MST) regional information including the VLAN-to-instance mapping of all VLANs. |
| **digest** | (Optional) Displays information about the MD5 digest. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 6.0(2)N1(1) | Support for the QSFP+ GEM was added. |
| 5.2(1)N1(1) | This command was introduced. |

## Usage Guidelines

If the switch is not running in STP Multiple Spanning Tree (MST) mode when you enter this command, it returns the following message:

```
ERROR: Switch is not in mst mode
```

## Examples

This example shows how to display STP information about Multiple Spanning Tree (MST) instance information for the VLAN ports that are currently active:

```
switch# show spanning-tree mst
```

This example shows how to display STP information about a specific Multiple Spanning Tree (MST) instance:

```
switch)# show spanning-tree mst 0
```

This example shows how to display detailed STP information about the Multiple Spanning Tree (MST) protocol:

```
switch)# show spanning-tree mst detail
```

This example shows how to display STP information about specified Multiple Spanning Tree (MST) interfaces:

```
switch)# show spanning-tree mst interface ethernet 8/2
```

This example shows how to display information about the Multiple Spanning Tree (MST) configuration:

```
switch)# show spanning-tree mst configuration
```

This example shows how to display the MD5 digest included in the current Multiple Spanning Tree (MST) configuration:

```
switch)# show spanning-tree mst configuration digest
```

See Table 4 on page 371 for descriptions of the fields that are displayed in the output of the **show spanning-tree** commands.

## Related Commands

| Command | Description |
|---|---|
| **show spanning-tree** | Displays information about STP. |
| **show spanning-tree active** | Displays information about STP active interfaces only. |
| **show spanning-tree bridge** | Displays the bridge ID, timers, and protocol for the local bridge on the switch. |
| **show spanning-tree brief** | Displays a brief summary about STP. |
| **show spanning-tree detail** | Displays detailed information about STP. |
| **show spanning-tree interface** | Displays the STP interface status and configuration of specified interfaces. |
| **show spanning-tree root** | Displays the status and configuration of the root bridge for the STP instance to which this switch belongs. |
| **show spanning-tree summary** | Displays summary information about STP. |
| **show spanning-tree vlan** | Displays STP information for specified VLANs. |

# show spanning-tree root

To display the status and configuration of the Spanning Tree Protocol (STP) root bridge, use the **show spanning-tree root** command.

**show spanning-tree root** [**address** | **brief** | **cost** | **detail** | **forward-time** | **hello-time** | **id** | **max-age** | **port** | **priority** [**system-id**]]

## Syntax Description

| | |
|---|---|
| **address** | (Optional) Displays the MAC address for the STP root bridge. |
| **brief** | (Optional) Displays a brief summary of the status and configuration for the root bridge. |
| **cost** | (Optional) Displays the path cost from the root to this bridge. |
| **detail** | (Optional) Displays detailed information on the status and configuration for the root bridge. |
| **forward-time** | (Optional) Displays the STP forward delay interval for the root bridge. |
| **hello-time** | (Optional) Displays the STP hello time for the root bridge. |
| **id** | (Optional) Displays the STP bridge identifier for the root bridge. |
| **max-age** | (Optional) Displays the STP maximum-aging time for the root bridge. |
| **port** | (Optional) Displays which port is the root port. |
| **priority** | (Optional) Displays the bridge priority for the root bridge. |
| **system-id** | (Optional) Displays the bridge identifier with the system ID extension for the root bridge. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display information for the root bridge:

```
switch(config)# show spanning-tree root
```

## Related Commands

| Command | Description |
|---|---|
| **show spanning-tree** | Displays information about STP. |
| **show spanning-tree active** | Displays information about STP active interfaces only. |

| Command | Description |
|---|---|
| **show spanning-tree bridge** | Displays the bridge ID, timers, and protocol for the local bridge on the switch. |
| **show spanning-tree brief** | Displays a brief summary of STP information. |
| **show spanning-tree detail** | Displays detailed information about STP. |
| **show spanning-tree interface** | Displays the STP interface status and configuration of specified interfaces. |
| **show spanning-tree mst** | Displays information about Multiple Spanning Tree (MST) STP. |
| **show spanning-tree summary** | Displays summary information about STP. |
| **show spanning-tree vlan** | Displays STP information for specified VLANs. |

# show spanning-tree summary

To display summary Spanning Tree Protocol (STP) information on the switch, use the **show spanning-tree summary** command.

**show spanning-tree summary** [**totals**]

## Syntax Description

| | |
|---|---|
| **totals** | (Optional) Displays totals only of STP information. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Usage Guidelines

The display output for this command differs when you are running Rapid Per VLAN Spanning Tree Plus (Rapid PVST+) or Multiple Spanning Tree (MST).

## Examples

This example shows how to display a summary of STP information on the switch:

```
switch# show spanning-tree summary
Switch is in rapid-pvst mode
Root bridge for: VLAN0001, VLAN0005
Port Type Default                        is disable
Edge Port [PortFast] BPDU Guard Default  is disabled
Edge Port [PortFast] BPDU Filter Default is disabled
Bridge Assurance                         is enabled
Loopguard Default                        is disabled
Pathcost method used                     is short

Name                   Blocking Listening Learning Forwarding STP Active
---------------------- -------- --------- -------- ---------- ----------
VLAN0001                    2         0        0          5          7
VLAN0005                    1         0        0          0          1
---------------------- -------- --------- -------- ---------- ----------
2 vlans                     3         0        0          5          8
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **show spanning-tree** | Displays information about STP. |

# show spanning-tree vlan

To display Spanning Tree Protocol (STP) information for specified VLANs, use the **show spanning-tree vlan** command.

**show spanning-tree vlan** {*vlan-id*} [**active** [**brief** | **detail**]]

**show spanning-tree vlan** {*vlan-id*} [**blockedports**]

**show spanning-tree vlan** {*vlan-id*} [**bridge** [**address**] | **brief** | **detail** | **forward-time** | **hello-time** | **id** | **max-age** | **priority** [**system-id**] | **protocol**]

**show spanning-tree vlan** {*vlan-id*} [**brief** [**active**]]

**show spanning-tree vlan** {*vlan-id*} [**detail** [**active**]]

**show spanning-tree vlan** {*vlan-id*} [**inconsistentports**]

**show spanning-tree vlan** {*vlan-id*} [**interface** {**ethernet** *slot/[QSFP-module/]port* | **port-channel** *number*} [**active** [**brief** | **detail**]] | **brief** [**active**] | **cost** | **detail** [**active**] | **edge** | **inconsistency** | **priority** | **rootcost** | **state**]]

**show spanning-tree vlan** {*vlan-id*} [**root** [**address** | **brief** | **cost** | **detail** | **forward-time** | **hello-time** | **id** | **max-age** | **port** | **priority** [**system-id**]]

**show spanning-tree vlan** {*vlan-id*} [**summary**]

## Syntax Description

| | |
|---|---|
| *vlan-id* | VLAN or range of VLANs that you want to display. |
| **active** | (Optional) Displays information about STP VLANs and active ports. |
| **brief** | (Optional) Displays a brief summary of STP information for the specified VLANs. |
| **detail** | (Optional) Displays detailed STP information for the specified VLANs. |
| **blockedports** | (Optional) Displays the STP alternate ports in the blocked state for the specified VLANs. |
| **bridge** | (Optional) Displays the status and configuration of the bridge for the specified VLANs. |
| **address** | (Optional) Displays the MAC address for the specified STP bridge for the specified VLANs. |
| **forward-time** | (Optional) Displays the STP forward delay interval for the bridge for the specified VLANs. |
| **hello-time** | (Optional) Displays the STP hello time for the bridge for the specified VLANs. |
| **id** | (Optional) Displays the STP bridge identifier for the specified VLANs. |
| **max-age** | (Optional) Displays the STP maximum-aging time for the specified VLANs. |
| **priority** | (Optional) Displays the STP priority for the specified VLANs. |
| **system-id** | (Optional) Displays the bridge identification with the system ID added for the specified VLANs. |

| | |
|---|---|
| **protocol** | (Optional) Displays which STP protocol is active on the switch. |
| **inconsistentports** | (Optional) Displays the ports that are in an inconsistent STP state for specified VLANs. |
| **interface** | (Optional) Specifies the interface. The interface can be Ethernet or EtherChannel. |
| **ethernet** *slot/[QSFP-module/]port* | (Optional) Specifies the Ethernet interface and its slot number and port number. The *slot* number is from 1 to 255. The *QSFP-module* number is from 1 to 4. The *port* number is from 1 to 128.<br>**Note** The *QSFP-module* number applies only to the QSFP+ Generic Expansion Module (GEM). |
| **port-channel** *number* | (Optional) Specifies the EtherChannel interface and number. The EtherChannel number is from 1 to 4096. |
| **cost** | (Optional) Displays the STP path cost for the specified VLANs. |
| **edge** | (Optional) Displays the STP-type edge port information for the specified interface for the specified VLANs. |
| **inconsistency** | (Optional) Displays the STP port inconsistency state for the specified interface for the specified VLANs. |
| **priority** | (Optional) Displays the STP priority for the specified VLANs. |
| **rootcost** | (Optional) Displays the path cost to the root for specified interfaces for the specified VLANs. |
| **state** | (Optional) Displays the current port STP state. Valid values are blocking, disabled, learning, and forwarding. |
| **port** | (Optional) Displays information about the root port for the specified VLANs. |
| **summary** | (Optional) Displays summary STP information on the specified VLANs. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 6.0(2)N1(1) | Support for the QSFP+ GEM was added. |
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display STP information on VLAN 1:

```
switch# show spanning-tree vlan 1
```

## Related Commands

| Command | Description |
|---|---|
| **show spanning-tree** | Displays information about STP. |
| **show spanning-tree active** | Displays information about STP active interfaces only. |
| **show spanning-tree bridge** | Displays the bridge ID, timers, and protocol for the local bridge on the switch. |
| **show spanning-tree brief** | Displays a brief summary about STP. |
| **show spanning-tree detail** | Displays detailed information about STP. |
| **show spanning-tree interface** | Displays the STP interface status and configuration of specified interfaces. |
| **show spanning-tree mst** | Displays information about Multiple Spanning Tree (MST) STP. |
| **show spanning-tree root** | Displays the status and configuration of the root bridge for the STP instance to which this switch belongs. |
| **show spanning-tree summary** | Displays summary information about STP. |

# show startup-config

To display the contents of the currently running configuration file, use the **show startup-config** command.

**show startup-config**

## Syntax Description

This command has no arguments or keywords.

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display information from the startup configuration file:

```
switch# show startup-config
```

## Related Commands

| Command | Description |
|---|---|
| **show running-config** | Displays the contents of the currently running configuration file. |

# show startup-config backup

To display the startup configuration for backup interfaces, use the **show startup-config backup** command.

**show startup-config backup** [**all**]

## Syntax Description

| | |
|---|---|
| **all** | (Optional) Displays backup interface information including default settings. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the startup configuration for backup interfaces:

```
switch# show startup-config backup

!Command: show startup-config backup
!Time: Mon Jan 30 00:37:27 2013
!Startup config saved at: Mon Jan 30 03:40:28 2013

version 6.0(2)N1(1)
feature flexlink

logging level Flexlink 5

interface port-channel300
  switchport backup interface port-channel301 preemption mode forced

interface port-channel500
  switchport backup interface port-channel501 preemption delay 36
  switchport backup interface port-channel501 multicast fast-convergence

interface port-channel502
  switchport backup interface port-channel503

interface port-channel504
  switchport backup interface Ethernet2/1

interface Ethernet1/2
  switchport backup interface Ethernet1/1

interface Ethernet1/20
  switchport backup interface Ethernet1/21

interface Ethernet2/2
```

```
  switchport backup interface port-channel507 preemption mode forced

switch#
```

This example shows how to display the detailed startup configuration for backup interfaces:

```
switch# show startup-config backup all

!Command: show startup-config backup all
!Time: Wed Jan  30 06:29:17 2013
!Startup config saved at: Sun Jan 27 03:40:28 2013

version 6.0(2)N1(1)
feature flexlink

logging level Flexlink 5

interface port-channel300
  switchport backup interface port-channel301 preemption mode forced
  switchport backup interface port-channel301 preemption delay 35

interface port-channel500
  switchport backup interface port-channel501 preemption mode off
  switchport backup interface port-channel501 preemption delay 36
  switchport backup interface port-channel501 multicast fast-convergence

interface port-channel502
  switchport backup interface port-channel503 preemption mode off
  switchport backup interface port-channel503 preemption delay 35

interface port-channel504
  switchport backup interface Ethernet2/1 preemption mode off
  switchport backup interface Ethernet2/1 preemption delay 35

interface Ethernet1/2
  switchport backup interface Ethernet1/1 preemption mode off
  switchport backup interface Ethernet1/1 preemption delay 35

interface Ethernet1/20
  switchport backup interface Ethernet1/21 preemption mode off
  switchport backup interface Ethernet1/21 preemption delay 35

interface Ethernet2/2
  switchport backup interface port-channel507 preemption mode forced
  switchport backup interface port-channel507 preemption delay 35

switch#
```

## Related Commands

| Command | Description |
|---|---|
| **copy running-config startup-config** | Copies the running configuration information to the startup configuration file. |
| **show running-config backup** | Displays the running configuration information for backup interfaces. |
| **show running-config flexlink** | Displays Flex Links running configuration information. |

| Command | Description |
|---|---|
| **show tech-support backup** | Displays troubleshooting information for backup interfaces. |
| **show tech-support flexlink** | Displays troubleshooting information for Flex Links. |

# show startup-config exclude-provision

To display the startup configuration that excludes the configuration for offline preprovisioned interfaces, use the **show startup-config exclude-provision** command.

**show startup-config exclude-provision**

## Syntax Description

This command has no arguments or keywords.

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the startup configuration without the offline preprovisioned interfaces:

```
switch# show startup-config exclude-provision

!Command: show startup-config exclude-provision
!Time: Wed Jan 30 08:24:27 2013
!Startup config saved at: Mon Jan 30 08:20:52 2013

version 6.0(2)N1(1)
feature fcoe

feature telnet
feature tacacs+
cfs ipv4 distribute
cfs eth distribute
feature udld
feature interface-vlan
feature lacp
feature vpc
feature lldp
feature vtp
feature fex

username admin password 5 $1$wmFN7W1y$/pjqx1DfAkCCAg/KyxbUz/  role network-admin
username install password 5 !  role network-admin
username ciscoUser1 password 5 !  role network-operator
no password strength-check
ip domain-lookup
ip domain-lookup
tacacs-server host 192.0.2.54 key 7 "wawy1234"
tacacs-server host 192.0.2.37
tacacs-server host 192.0.2.37 test username user1
```

```
aaa group server tacacs+ t1
    server 192.0.2.54
aaa group server tacacs+ tacacs
radius-server host 1192.0.2.5 key 7 "KkwyCet" authentication accounting
aaa group server radius r1
    server 192.0.2.5
hostname BEND-2
vlan dot1Q tag native
logging event link-status default
logging event trunk-status default
no service recover-errdisable
errdisable recovery interval 600
no errdisable detect cause link-flap
errdisable recovery cause link-flap
--More--
<--output truncated-->
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **provision** | Preprovisions a module in a slot. |
| **show provision** | Displays the preprovisioned module information. |
| **show running-config exclude-provision** | Displays the running configuration excluding the preprovisioned features. |
| **slot** | Configures a chassis slot for a predefined module. |

# show startup-config flexlink

To display the startup configuration for Flex Links, use the **show startup-config flexlink** command.

**show startup-config flexlink** [**all**]

## Syntax Description

| | |
|---|---|
| **all** | (Optional) Displays information about Flex Links including default settings. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the startup configuration for Flex Links:

```
switch# show startup-config flexlink

!Command: show startup-config flexlink
!Time: Wed Jan 30 00:37:27 2013
!Startup config saved at: Sun Jan 27 03:40:28 2013

version 6.0(2)N1(1)
feature flexlink

logging level Flexlink 5

interface port-channel300
  switchport backup interface port-channel301 preemption mode forced

interface port-channel500
  switchport backup interface port-channel501 preemption delay 36
  switchport backup interface port-channel501 multicast fast-convergence

interface port-channel502
  switchport backup interface port-channel503

interface port-channel504
  switchport backup interface Ethernet2/1

interface Ethernet1/2
  switchport backup interface Ethernet1/1

interface Ethernet1/20
  switchport backup interface Ethernet1/21

interface Ethernet2/2
  switchport backup interface port-channel507 preemption mode forced
```

```
switch#
```

This example shows how to display the detailed startup configuration for Flex Links:

```
switch# show startup-config flexlink all

!Command: show startup-config flexlink all
!Time: Wed Jan 30 00:37:27 2013
!Startup config saved at: Sun Jan 27 03:40:28 2013

version 6.0(2)N1(1)
feature flexlink

logging level Flexlink 5

interface port-channel300
  switchport backup interface port-channel301 preemption mode forced
  switchport backup interface port-channel301 preemption delay 35

interface port-channel500
  switchport backup interface port-channel501 preemption mode off
  switchport backup interface port-channel501 preemption delay 36
  switchport backup interface port-channel501 multicast fast-convergence

interface port-channel502
  switchport backup interface port-channel503 preemption mode off
  switchport backup interface port-channel503 preemption delay 35

interface port-channel504
  switchport backup interface Ethernet2/1 preemption mode off
  switchport backup interface Ethernet2/1 preemption delay 35

interface Ethernet1/2
  switchport backup interface Ethernet1/1 preemption mode off
  switchport backup interface Ethernet1/1 preemption delay 35

interface Ethernet1/20
  switchport backup interface Ethernet1/21 preemption mode off
  switchport backup interface Ethernet1/21 preemption delay 35

interface Ethernet2/2
  switchport backup interface port-channel507 preemption mode forced
  switchport backup interface port-channel507 preemption delay 35

switch#
```

## Related Commands

| Command | Description |
|---|---|
| **copy running-config startup-config** | Copies the running configuration information to the startup configuration file. |
| **show running-config backup** | Displays the running configuration information for backup interfaces. |
| **show running-config flexlink** | Displays Flex Links running configuration information. |

| Command | Description |
|---|---|
| **show tech-support backup** | Displays troubleshooting information for backup interfaces. |
| **show tech-support flexlink** | Displays troubleshooting information for Flex Links. |

# show startup-config port-security

To display the secure ports configuration information in the startup configuration file, use the **show startup-config port-security** command.

**show startup-config port-security** [**all**]

## Syntax Description

| | |
|---|---|
| **all** | (Optional) Displays detailed information about secure ports, including default settings. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Usage Guidelines

This command does not require a license.

## Examples

This example shows how to display the information from the startup configuration file for all secure ports configured on an interface:

```
switch# show startup-config port-security
```

## Related Commands

| Command | Description |
|---|---|
| **clear port-security dynamic** | Clears the dynamically secured addresses on a port. |

# show startup-config vtp

To display the VLAN Trunking Protocol (VTP) configuration from the startup configuration file, use the **show startup-config vtp** command.

**show startup-config vtp**

## Syntax Description

This command has no arguments or keywords.

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the VTP configuration stored in the startup configuration file:

```
switch# show startup-config vtp

!Command: show startup-config vtp
!Time: Wed Jan 30 08:45:33 2013
!Startup config saved at: Wed Jan 30 08:45:03 2013

version 6.0(2)N1(1)
feature vtp

vtp mode transparent
vtp domain MyDomain
vtp file bootflash:/myvtp.txt


switch#
```

## Related Commands

| Command | Description |
|---|---|
| **copy running-config startup-config** | Copies the running configuration to the startup configuration file. |
| **feature vtp** | Enables VTP on the switch. |
| **vtp domain** | Configures the VTP administrative domain. |
| **vtp file** | Stores the VTP configuration in a file. |
| **vtp mode** | Configures a VTP device mode. |

# show svs connections

To display the current SVS connections to the Cisco Nexus 5000 Series switch for verification, use the **show svs connections** command.

**show svs connections** [*conn_name*]

## Syntax Description

| | |
|---|---|
| *conn-name* | (Optional) Name of the SVS connection. The name can be a maximum of 64 alphanumeric characters. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Usage Guidelines

This command does not require a license.

## Examples

This example shows how to display information about the local and remote SVS connections:

```
switch# show svs connections

Local Info:
-----------
connection SVSConn:
    ip address: 192.0.2.12
    remote port: 21
    vrf: default
    protocol: vmware-vim https
    certificate: default
    datacenter name: DCName
    extension key: Cisco_Nexus_1000V_1155927
    dvs name: DVS_DC
    DVS uuid: -
    config status: Disabled
    operational status: Disconnected
    sync status: -
    version: -


Peer Info:
----------
    hostname: -
    ip address: -
    vrf:
    protocol: -
    extension key: -
```

```
    certificate: -
    certificate match: -
    datacenter name: -
    dvs name: -
    DVS uuid: -
    config status: Disabled
    operational status: Connected
switch#
```

This example shows how to display the SVS information of the local machine:

```
switch# show svs connections SVSConn

Local Info:
-----------
connection SVSConn:
    ip address: 10.0.0.1
    remote port: 21
    vrf: default
    protocol: vmware-vim https
    certificate: default
    datacenter name: DCName
    extension key: Cisco_Nexus_1000V_1199955927
    dvs name: DVS_DC
    DVS uuid: -
    config status: Disabled
    operational status: Disconnected
    sync status: -
    version: -
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **svs connection** | Enables an SVS connection. |

# show system vlan reserved

To display the system reserved VLAN range , use the **show system vlan reserved** command.

**show system vlan reserved**

## Syntax Description

This command has no arguments or keywords.

## Command Default

None

## Command Modes

Any command mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the system reserved VLAN range:

```
switch# show system vlan reserved
system current running vlan reservation: 3968-4095
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **system vlan reserve** | Confiugres the reserved VLAN range. |
| **write erase** | Reverts to the default reserved VLAN range. |

# show tech-support

To display troubleshooting information about backup interfaces or Flex Links, use the **show tech-support** command.

**show tech-support** {**backup** | **flexlink**}

## Syntax Description

| | |
|---|---|
| **backup** | Displays troubleshooting information about backup interfaces. |
| **flexlink** | Displays troubleshooting information about Flex Links. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the troubleshooting information about backup interfaces:

```
switch# show tech-support backup
`show interface switchport backup detail`


Switch Backup Interface Pairs:

Active Interface        Backup Interface        State
------------------------------------------------------------------------------
Ethernet1/2             Ethernet1/1             Active Down/Backup Down
        Preemption Mode  : off
        Multicast Fast Convergence  : Off
        Bandwidth : 1000000 Kbit (Ethernet1/2), 10000000 Kbit (Ethernet1/1)

Ethernet1/20            Ethernet1/21            Active Down/Backup Down
        Preemption Mode  : off
        Multicast Fast Convergence  : Off
        Bandwidth : 10000000 Kbit (Ethernet1/20), 10000000 Kbit (Ethernet1/21)

port-channel300         port-channel301         Active Up/Backup Down
        Preemption Mode  : forced
        Preemption Delay : 35 seconds (default)
        Multicast Fast Convergence  : On
        Bandwidth : 20000000 Kbit (port-channel300), 10000000 Kbit (port-channel
301)

port-channel500         port-channel501         Active Down/Backup Down
        Preemption Mode  : off
        Multicast Fast Convergence  : On
        Bandwidth : 100000 Kbit (port-channel500), 100000 Kbit (port-channel501)
```

```
port-channel502         port-channel503         Active Down/Backup Down
        Preemption Mode  : off
        Multicast Fast Convergence  : Off
        Bandwidth : 100000 Kbit (port-channel502), 100000 Kbit (port-channel503)

port-channel504         Ethernet2/1             Active Down/Backup Down
        Preemption Mode  : off
        Multicast Fast Convergence  : Off
        Bandwidth : 100000 Kbit (port-channel504), 0 Kbit (Ethernet2/1)
`show platform backup internal trace`
FLEXLINK Trace Dump in FIFO order
================================
Trace Buffer Size: 5 MB; Num of times buffer wrapped 0; Max Rec-Size 156; Rec_id
 for next Msg 6219
================================================================================

::0::[Thu Jan  1 00:01:21 2009 594649 usecs] flexlink_db_initialize: timer libra
ry initialization successful

::1::[Thu Jan  1 00:01:21 2009 594702 usecs] flexlink_db_initialize: starting VD
C 1

::2::[Thu Jan  1 00:01:21 2009 594752 usecs] flexlink_initialize: flexlink_db_in
itialize done

::3::[Thu Jan  1 00:01:21 2009 594946 usecs] flexlink_mts_queue_initialize: mts
bind for flexlink_q_mts(7) successful

::4::[Thu Jan  1 00:01:21 2009 595015 usecs] flexlink_mts_queue_initialize: regi
stered MTS_OPC_SDWRAP_DEBUG_DUMP(1530) with flexlink_q_mts

::5::[Thu Jan  1 00:01:21 2009 595064 usecs] flexlink_mts_queue_initialize: regi
stered MTS_OPC_SYSLOG_FACILITY_OPR(185) with flexlink_q_mts

::6::[Thu Jan  1 00:01:21 2009 595113 usecs] flexlink_mts_queue_initialize: regi
stered MTS_OPC_SYSMGR_CFG_ACTION(1360) with flexlink_q_mts

::7::[Thu Jan  1 00:01:21 2009 595161 usecs] flexlink_mts_queue_initialize: regi
stered MTS_OPC_SYSMGR_CFG_SAVED(1361) with flexlink_q_mts

::8::[Thu Jan  1 00:01:21 2009 595209 usecs] flexlink_mts_queue_initialize: regi
stered MTS_OPC_VSH_CMD_TLV(7679) with flexlink_q_mts

::9::[Thu Jan  1 00:01:21 2009 595257 usecs] flexlink_mts_queue_initialize: regi
stered MTS_OPC_VSH_CMD_TLV_SYNC(7682) with flexlink_q_mts

::10::[Thu Jan  1 00:01:21 2009 595304 usecs] flexlink_mts_queue_initialize: reg
istered MTS_OPC_FM_SRV_ENABLE_FEATURE(8925) with flexlink_q_mts

::11::[Thu Jan  1 00:01:21 2009 595351 usecs] flexlink_mts_queue_initialize: reg
istered MTS_OPC_FM_SRV_DISABLE_FEATURE(8926) with flexlink_q_mts

::12::[Thu Jan  1 00:01:21 2009 595400 usecs] flexlink_mts_queue_initialize: reg
istered MTS_OPC_IM_IF_CREATED(62467) with flexlink_q_mts

::13::[Thu Jan  1 00:01:21 2009 595448 usecs] flexlink_mts_queue_initialize: reg
istered MTS_OPC_IM_IF_REMOVED(62468) with flexlink_q_mts

::14::[Thu Jan  1 00:01:21 2009 595495 usecs] flexlink_mts_queue_initialize: reg
<--Output truncated-->
switch#
```

This example shows how to display the troubleshooting information for Flex Links:

```
switch# show tech-support flexlink
`show interface switchport backup detail`


Switch Backup Interface Pairs:

Active Interface        Backup Interface        State
------------------------------------------------------------------------
Ethernet1/2             Ethernet1/1             Active Down/Backup Down
        Preemption Mode  : off
        Multicast Fast Convergence  : Off
        Bandwidth : 1000000 Kbit (Ethernet1/2), 10000000 Kbit (Ethernet1/1)

Ethernet1/20            Ethernet1/21            Active Down/Backup Down
        Preemption Mode  : off
        Multicast Fast Convergence  : Off
        Bandwidth : 10000000 Kbit (Ethernet1/20), 10000000 Kbit (Ethernet1/21)

port-channel300         port-channel301         Active Up/Backup Down
        Preemption Mode  : forced
        Preemption Delay : 35 seconds (default)
        Multicast Fast Convergence  : On
        Bandwidth : 20000000 Kbit (port-channel300), 10000000 Kbit (port-channel
301)

port-channel500         port-channel501         Active Down/Backup Down
        Preemption Mode  : off
        Multicast Fast Convergence  : On
        Bandwidth : 100000 Kbit (port-channel500), 100000 Kbit (port-channel501)

port-channel502         port-channel503         Active Down/Backup Down
        Preemption Mode  : off
        Multicast Fast Convergence  : Off
        Bandwidth : 100000 Kbit (port-channel502), 100000 Kbit (port-channel503)

port-channel504         Ethernet2/1             Active Down/Backup Down
        Preemption Mode  : off
        Multicast Fast Convergence  : Off
        Bandwidth : 100000 Kbit (port-channel504), 0 Kbit (Ethernet2/1)
`show platform backup internal trace`
FLEXLINK Trace Dump in FIFO order
================================
Trace Buffer Size: 5 MB; Num of times buffer wrapped 0; Max Rec-Size 156; Rec_id
 for next Msg 6225
================================================================================

::0::[Thu Jan  1 00:01:21 2009 594649 usecs] flexlink_db_initialize: timer libra
ry initialization successful

::1::[Thu Jan  1 00:01:21 2009 594702 usecs] flexlink_db_initialize: starting VD
C 1

::2::[Thu Jan  1 00:01:21 2009 594752 usecs] flexlink_initialize: flexlink_db_in
itialize done

::3::[Thu Jan  1 00:01:21 2009 594946 usecs] flexlink_mts_queue_initialize: mts
bind for flexlink_q_mts(7) successful

::4::[Thu Jan  1 00:01:21 2009 595015 usecs] flexlink_mts_queue_initialize: regi
stered MTS_OPC_SDWRAP_DEBUG_DUMP(1530) with flexlink_q_mts
```

```
::5::[Thu Jan  1 00:01:21 2009 595064 usecs] flexlink_mts_queue_initialize: regi
stered MTS_OPC_SYSLOG_FACILITY_OPR(185) with flexlink_q_mts

::6::[Thu Jan  1 00:01:21 2009 595113 usecs] flexlink_mts_queue_initialize: regi
stered MTS_OPC_SYSMGR_CFG_ACTION(1360) with flexlink_q_mts

::7::[Thu Jan  1 00:01:21 2009 595161 usecs] flexlink_mts_queue_initialize: regi
stered MTS_OPC_SYSMGR_CFG_SAVED(1361) with flexlink_q_mts

::8::[Thu Jan  1 00:01:21 2009 595209 usecs] flexlink_mts_queue_initialize: regi
stered MTS_OPC_VSH_CMD_TLV(7679) with flexlink_q_mts

::9::[Thu Jan  1 00:01:21 2009 595257 usecs] flexlink_mts_queue_initialize: regi
stered MTS_OPC_VSH_CMD_TLV_SYNC(7682) with flexlink_q_mts

::10::[Thu Jan  1 00:01:21 2009 595304 usecs] flexlink_mts_queue_initialize: reg
istered MTS_OPC_FM_SRV_ENABLE_FEATURE(8925) with flexlink_q_mts

::11::[Thu Jan  1 00:01:21 2009 595351 usecs] flexlink_mts_queue_initialize: reg
istered MTS_OPC_FM_SRV_DISABLE_FEATURE(8926) with flexlink_q_mts

::12::[Thu Jan  1 00:01:21 2009 595400 usecs] flexlink_mts_queue_initialize: reg
istered MTS_OPC_IM_IF_CREATED(62467) with flexlink_q_mts
<--Output truncated-->
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **show running-config backup** | Displays the running configuration information for backup interfaces. |
| **show running-config flexlink** | Displays Flex Links running configuration information. |

# show tech-support port-channel

To display troubleshooting information about EtherChannel interfaces, use the **show tech-support port-channel** command.

**show tech-support port-channel**

## Syntax Description

This command has no arguments and keywords.

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Usage Guidelines

The output from the **show tech-support port-channel** command is very long. To better manage this output, you can redirect the output to a file.

## Examples

This example shows how to display Cisco technical support information for EtherChannel interfaces:

```
switch# show tech-support port-channel
`show port-channel internal event-history all`
Low Priority Pending queue: len(0), max len(2) [Thu Jul  8 04:05:04 2010]
High Priority Pending queue: len(0), max len(32) [Thu Jul  8 04:05:04 2010]
PCM Control Block info:
pcm_max_channels        : 4096
pcm_max_channel_in_use  : 1912
pc count                : 29
hif-pc count            : 20
Max PC Cnt              : 768
==================================================
PORT CHANNELS:

port-channel19
channel       : 19
bundle        : 65535
ifindex       : 0x16000012
admin mode    : active
oper mode     : active
fop ifindex   : 0x1fc605c0
nports        : 4
active        : 4
pre cfg       : 0
ltl:          : 0
lif:          : 0
iod:          : 43
global id     : 1
```

```
flag          : 0
--More--
<---output truncated--->
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **port-channel load-balance ethernet** | Configures the load-balancing method among the interfaces in the channel-group bundle. |
| **show port-channel load-balance** | Displays information on EtherChannel load balancing. |

# show udld

To display the Unidirectional Link Detection (UDLD) information for a switch, use the **show udld** command.

**show udld** [**ethernet** *slot/[QSFP-module/]port* | **global** | **neighbors**]

## Syntax Description

| | |
|---|---|
| **ethernet** *slot/[QSFP-module/]port* | Displays UDLD information for an Ethernet IEEE 802.3z interface. The *slot* number is from 1 to 255. The *QSFP-module* number is from 1 to 4. The *port* number is from 1 to 128.<br>**Note** The *QSFP-module* number applies only to the QSFP+ Generic Expansion Module (GEM). |
| **global** | Displays the UDLD global status and configuration information on all interfaces. |
| **neighbors** | Displays information about UDLD neighbor interfaces. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 6.0(2)N1(1) | Support for the QSFP+ GEM was added. |
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display UDLD information for all interfaces:

```
switch# show udld

Interface Ethernet1/1
---------------------------------
Port enable administrative configuration setting: device-default
Port enable operational state: enabled
Current bidirectional state: bidirectional
Current operational state:  advertisement - Single neighbor detected
Message interval: 15
Timeout interval: 5

        Entry 1
        ----------------
        Expiration time: 41
        Cache Device index: 1
        Current neighbor state: bidirectional
        Device ID: FLC12280095
        Port ID: Ethernet1/1
        Neighbor echo 1 devices: SSI130205RT
        Neighbor echo 1 port: Ethernet1/1
```

```
        Message interval: 15
        Timeout interval: 5
        CDP Device name: N5Kswitch-2(FLC12280095)


Interface Ethernet1/2
------------------------------
Port enable administrative configuration setting: device-default
Port enable operational state: enabled
Current bidirectional state: bidirectional
Current operational state:  advertisement - Single neighbor detected
Message interval: 15
Timeout interval: 5

        Entry 1
        ----------------
--More--
switch#
```

This example shows how to display the UDLD information for a specified interface:

```
switch# show udld ethernet 1/1

Interface Ethernet1/1
------------------------------
Port enable administrative configuration setting: device-default
Port enable operational state: enabled
Current bidirectional state: bidirectional
Current operational state:  advertisement - Single neighbor detected
Message interval: 15
Timeout interval: 5

        Entry 1
        ----------------
        Expiration time: 41
        Cache Device index: 1
        Current neighbor state: bidirectional
        Device ID: FLC12280095
        Port ID: Ethernet1/1
        Neighbor echo 1 devices: SSI130205RT
        Neighbor echo 1 port: Ethernet1/1

        Message interval: 15
        Timeout interval: 5
        CDP Device name: N5Kswitch-2(FLC12280095)

switch#
```

This example shows how to display the UDLD global status and configuration on all interfaces:

```
switch# show udld global

UDLD global configuration mode: enabled
UDLD global message interval: 15
switch#
```

This example shows how to display the UDLD neighbor interfaces:

```
switch# show udld neighbors
Port             Device Name    Device ID   Port ID         Neighbor State
--------------------------------------------------------------------------------
Ethernet1/1      FLC12280095    1           Ethernet1/1     bidirectional
Ethernet1/2      FLC12280095    1           Ethernet1/2     bidirectional
Ethernet1/3      FLC12280095    1           Ethernet1/3     bidirectional
Ethernet1/4      FLC12280095    1           Ethernet1/4     bidirectional
```

```
Ethernet1/7      JAF1346000H    1           Ethernet1/7     bidirectional
Ethernet1/8      JAF1346000H    1           Ethernet1/8     bidirectional
Ethernet1/9      JAF1346000C    1           Ethernet1/9     bidirectional
Ethernet1/10     JAF1346000C    1           Ethernet1/10    bidirectional

switch#
```

## Related Commands

| Command | Description |
|---|---|
| **udld (configuration mode)** | Configures the UDLD protocol on the switch. |
| **udld (Ethernet)** | Configures the UDLD protocol on an Ethernet interface. |

# show vlan

To display VLAN information, use the **show vlan** command.

**show vlan** [**brief** | **name** {*name*} | **summary**]

## Syntax Description

| | |
|---|---|
| **brief** | (Optional) Displays only a single line for each VLAN, naming the VLAN, status, and ports. |
| **name** *name* | (Optional) Displays information about a single VLAN that is identified by the VLAN name. |
| **summary** | (Optional) Displays the number of existing VLANs on the switch. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Usage Guidelines

This command displays information for all VLANs, including private VLANs, on the switch.

Each access port can belong to only one VLAN. Trunk ports can be on multiple VLANs.

**Note** Although a port can be associated with a VLAN as an access VLAN, a native VLAN, or one of the trunk allowed ports, only access VLANS are shown under Ports in the display.

If you shut down a VLAN using the **state suspend** or the **state active** command, these values appear in the Status field:

- suspended—VLAN is suspended.
- active—VLAN is active.

If you shut down a VLAN using the **shutdown** command, these values appear in the Status field:

- act/lshut—VLAN status is active but shut down locally.
- sus/lshut—VLAN status is suspended but shut down locally.

If a VLAN is shut down internally, these values appear in the Status field:

- act/ishut—VLAN status is active but shut down internally.
- sus/ishut—VLAN status is suspended but shut down internally.

If a VLAN is shut down locally and internally, the value that is displayed in the Status field is act/ishut or sus/ishut. If a VLAN is shut down locally only, the value that is displayed in the Status field is act/lshut or sus/lshut.

## Examples

This example shows how to display information for all VLANs on the switch:

```
switch# show vlan
```

This example shows how to display the VLAN name, status, and associated ports only:

```
switch# show vlan brief
```

This example shows how to display the VLAN information for a specific VLAN by name:

```
switch# show vlan name test
```

This example shows how to display information about the number of VLANs configured on the switch:

```
switch# show vlan summary
```

## Related Commands

| Command | Description |
|---|---|
| **show interface switchport** | Displays information about the ports, including those in private VLANs. |
| **show vlan private-vlan** | Displays private VLAN information. |

# show vlan dot1Q tag native

To display the status of tagging on the native VLANs, use the **show vlan dot1Q tag native** command.

**show vlan dot1Q tag native**

## Syntax Description

This command has no arguments or keywords.

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display the status of 802.1Q tagging on the native VLANs:

```
switch# show vlan dot1Q tag native
vlan dot1q native tag is enabled
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **vlan dot1q tag native** | Enables dot1q (IEEE 802.1Q) tagging for all native VLANs on all trunked ports on the switch. |

# show vlan id

To display information and statistics for an individual VLAN or a range of VLANs, use the **show vlan id** command.

**show vlan id** {*vlan-id*}

## Syntax Description

| | |
|---|---|
| *vlan-id* | VLAN or range of VLANs that you want to display. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Usage Guidelines

Use this command to display information and statistics on an individual VLAN or a range of VLANs, including private VLANs.

**Note** You can also display information about individual VLANs using the **show vlan name** command.

## Examples

This example shows how to display information for the individual VLAN 5:

```
switch# show vlan id 5
```

## Related Commands

| Command | Description |
|---|---|
| **show vlan** | Displays information about VLANs on the switch. |

# show vlan private-vlan

To display private VLAN information, use the **show vlan private-vlan** command.

**show vlan** [**id** {*vlan-id*}] **private-vlan** [**type**]

## Syntax Description

| | |
|---|---|
| **id** *vlan-id* | (Optional) Displays private VLAN information for the specified VLAN. |
| **type** | (Optional) Displays the private VLAN type (primary, isolated, or community). |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Examples

This example shows how to display information on all private VLANs on the switch:

```
switch(config)# show vlan private-vlan
```

This example shows how to display information for a specific private VLAN:

```
switch(config)# show vlan id 42 private-vlan
```

This example shows how to display information on the types of all private VLANs on the switch:

```
switch(config)# show vlan private-vlan type
```

This example shows how to display information on the type for the specified private VLAN:

```
switch(config)# show vlan id 42 private-vlan type
```

## Related Commands

| Command | Description |
|---|---|
| **show interface private-vlan mapping** | Displays information about the private VLAN mapping between the primary and secondary VLANs so that both VLANs share the same primary VLAN interface. |
| **show interface switchport** | Displays information about the ports, including those in private VLANs. |
| **show vlan** | Displays information about all the VLANs on the switch. |

# show vtp counters

To display the VLAN Trunking Protocol (VTP) statistics, use the **show vtp counters** command.

**show vtp counters**

## Syntax Description

This command has no arguments or keywords.

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Usage Guidelines

Before you use this command, you must enable VTP on the switch by using the **feature vtp** command.

## Examples

This example shows how to display the VTP counters:

```
switch# show vtp counters
VTP statistics:
Summary advertisements received    : 0
Subset advertisements received     : 0
Request advertisements received    : 0
Summary advertisements transmitted : 0
Subset advertisements transmitted  : 0
Request advertisements transmitted : 0
Number of config revision errors   : 0
Number of config digest errors     : 0
Number of V1 summary errors        : 0


VTP pruning statistics:

Trunk            Join Transmitted Join Received    Summary advts received from
                                                   non-pruning-capable device
---------------- ---------------- ---------------- ---------------------------
port-channel23      0                0                0
port-channel67      0                0                0
port-channel400     0                0                0
port-channel1504    0                0                0
Ethernet1/2         0                0                0
Ethernet1/12        0                0                0
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **feature vtp** | Enables VTP on the switch. |
| **vtp** | Enables VTP on an interface. |
| **vtp mode** | Configures the VTP device mode. |

# show vtp interface

To display the VLAN Trunking Protocol (VTP) interface status and configuration information, use the **show vtp interface** command.

**show vtp interface** [**ethernet** *slot/[QSFP-module/]port* | **port-channel** *channel-no*]

## Syntax Description

| | |
|---|---|
| **ethernet** *slot/[QSFP-module/]port* | (Optional) Displays the VTP configuration on Ethernet interfaces. The *slot* number is from 1 to 255. The *QSFP-module* number is from 1 to 4. The *port* number is from 1 to 128.<br>**Note** The *QSFP-module* number applies only to the QSFP+ Generic Expansion Module (GEM). |
| **port-channel** *channel-no* | (Optional) Displays the VTP configuration on EtherChannel interfaces. The EtherChannel number can be from 1 to 4096. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 6.0(2)N1(1) | Support for the QSFP+ GEM was added. |
| 5.2(1)N1(1) | This command was introduced. |

## Usage Guidelines

Before you use this command, you must enable VTP on the switch by using the **feature vtp** command.

## Examples

This example shows how to display the VTP configuration information on all interfaces:

```
switch# show vtp interface

 Interface         VTP Status
--------------------------------
port-channel23      Enabled
port-channel67      Enabled
port-channel400     Enabled
port-channel1504    Enabled
Ethernet1/2         Enabled
Ethernet1/12        Enabled
switch#
```

This example shows how to display the VTP configuration information for an Ethernet interface:

```
switch# show vtp interface ethernet 1/12

 Interface         VTP Status
--------------------------------
Ethernet1/12        Enabled
```

```
switch#
```

This example shows how to display the VTP configuration information for an EtherChannel interface:

```
switch# show vtp interface port-channel 23

 Interface         VTP Status
--------------------------------
port-channel23      Enabled
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **feature vtp** | Enables VTP on the switch. |
| **show interface ethernet** | Displays the Ethernet interfaces configured on the switch. |
| **show interface port-channel** | Displays the EtherChannels configured on the switch. |
| **show vtp status** | Displays the VTP configuration status. |
| **vtp** | Enables VTP on an interface. |

# show vtp password

To display the VLAN Trunking Protocol (VTP) administrative password, use the **show vtp password** command.

**show vtp password** [**domain** *domain-id*]

## Syntax Description

| | |
|---|---|
| **domain** | (Optional) Specifies the VTP administrative domain. |
| *domain-id* | VTP domain ID. The ID can be from 0 to 4294967295. |

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Usage Guidelines

Before you use this command, you must enable VTP on the switch by using the **feature vtp** command.

## Examples

This example shows how to display the VTP password configured for administrative domain 1:

```
switch# show vtp password domain 1
VTP password: cisco
switch#
```

## Related Commands

| Command | Description |
|---|---|
| **feature vtp** | Enables VTP on the switch. |
| **vtp domain** | Configures the VTP domain. |
| **vtp password** | Configures the VTP administrative password. |

# show vtp status

To display the VLAN Trunking Protocol (VTP) domain status information, use the **show vtp status** command.

**show vtp status**

## Syntax Description

This command has no arguments or keywords.

## Command Default

None

## Command Modes

EXEC mode

## Command History

| Release | Modification |
|---|---|
| 5.2(1)N1(1) | This command was introduced. |

## Usage Guidelines

Before you use this command, you must enable VTP on the switch by using the **feature vtp** command.

## Examples

This example shows how to display the VTP domain status on a Cisco NX-OS Release 4.2(1)N1(1):

```
switch# show vtp status
VTP Version                     : 1
Configuration Revision          : 0
Maximum VLANs supported locally : 1005
VTP Operating Mode              : Transparent
VTP Domain Name                 :
VTP Pruning Mode                : Disabled
VTP V2 Mode                     : Disabled
VTP Traps Generation            : Disabled
switch#
```

This example shows how to display the VTP domain status in Cisco NX-OS Release 5.0(2)N1(1):

```
switch# show vtp status
VTP Status Information
----------------------
VTP Version                     : 2 (capable)
Configuration Revision          : 0
Maximum VLANs supported locally : 1005
Number of exisiting VLANs       : 504
VTP Operating Mode              : Transparent
VTP Domain Name                 : MyDomain
VTP Pruning Mode                : Disabled (Operationally Disabled)
VTP V2 Mode                     : Disabled
VTP Traps Generation            : Enabled
MD5 Digest                      : 0x55 0xDE 0xF3 0x03 0x0F 0xE5 0x9D 0x6B
Configuration last modified by 0.0.0.0 at 0-0-00 00:00:00
VTP version running             : 1
Local updater ID is 5.1.1.4
```

```
switch#
```

This example shows how to display the VTP domain status in Cisco NX-OS Release 5.0(2)N2(1):

```
switch# show vtp status
VTP Status Information
----------------------
VTP Version                     : 2 (capable)
Configuration Revision          : 0
Maximum VLANs supported locally : 1005
Number of existing VLANs        : 14
VTP Operating Mode              : Server
VTP Domain Name                 : cisco
VTP Pruning Mode                : Disabled (Operationally Disabled)
VTP V2 Mode                     : Disabled
VTP Traps Generation            : Disabled
MD5 Digest                      : 0x70 0x06 0xAE 0x94 0x0B 0x33 0xFB 0xD4
Configuration last modified by 0.0.0.0 at 0-0-00 00:00:00
Local updater ID is 0.0.0.0
VTP version running             : 1

switch#
```

## Related Commands

| Command | Description |
|---|---|
| **feature vtp** | Enables VTP on the switch. |
| **vtp domain** | Configures the VTP domain. |
| **vtp mode** | Configures the VTP device mode. |
| **vtp version** | Configures the VTP version. |