



# I Commands

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# interface loopback

To create a loopback interface and enter interface configuration mode, use the **interface loopback** command. To remove a loopback interface, use the **no** form of this command.

**interface loopback** *number*  
**no interface loopback** *number*

## Syntax Description

<i>number</i>	Interface number; valid values are from 0 to 1023.
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## Command Default

None

## Command Modes

Global configuration mode

## Command History

Release	Modification
5.0(3)N1(1)	This command was introduced.

## Usage Guidelines

Use the **interface loopback** command to create or modify loopback interfaces.

From the loopback interface configuration mode, the following parameters are available:

- **description**—Provides a description of the purpose of the interface.
- **ip**—Configures IP features, such as the IP address for the interface, Address Resolution Protocol (ARP) attributes, load balancing, Unicast Reverse Path Forwarding (RPF) or IP Source Guard.
- **logging**—Configure logging of events.
- **shutdown**—Shut down traffic on the interface.

This command does not require a license.

## Examples

This example shows how to create a loopback interface:

```
switch(config)# interface loopback 50
switch(config-if)# ip address 10.1.1.1/24
switch(config-if)#
```

## Related Commands

Command	Description
<b>show interface loopback</b>	Displays information about the traffic on the specified loopback interface.

# interface port-channel

To create an EtherChannel interface and enter interface configuration mode, use the **interface port-channel** command. To remove an EtherChannel interface, use the **no** form of this command.

```
interface port-channel channel-number [. subintf-channel-no]
no interface port-channel channel-number [. subintf-channel-no]
```

## Syntax Description

<i>channel-number</i>	Channel number that is assigned to this EtherChannel logical interface. The range is from 1 to 4096.
.	(Optional) Specifies the subinterface separator. <b>Note</b> Applies to Layer 3 interfaces.
<i>subintf-channel-no</i>	(Optional) Port number of the EtherChannel subinterface. The range is from 1 to 4093. <b>Note</b> Applies to Layer 3 interfaces.

## Command Default

None

## Command Modes

Global configuration mode  
Interface configuration mode

## Command History

Release	Modification
4.0(0)N1(1a)	This command was introduced.
5.0(3)N1(1)	Support for Layer 3 interfaces and subinterfaces was added.

## Usage Guidelines

A port can belong to only one channel group.

When you use the **interface port-channel** command for Layer 2 interfaces, follow these guidelines:

- If you are using CDP, you must configure it only on the physical interface and not on the EtherChannel interface.
- If you do not assign a static MAC address on the EtherChannel interface, a MAC address is automatically assigned. If you assign a static MAC address and then later remove it, the MAC address is automatically assigned.
- The MAC address of the EtherChannel is the address of the first operational port added to the channel group. If this first-added port is removed from the channel, the MAC address comes from the next operational port added, if there is one.

You must use the **no switchport** command in the interface configuration mode to configure the EtherChannel interface as a Layer 3 interface. When you configure the interface as a Layer 3 interface, all Layer 2 specific configurations on this interface are deleted.

Use the **switchport** command to convert a Layer 3 EtherChannel interface into a Layer 2 interface. When you configure the interface as a Layer 2 interface, all Layer 3 specific configurations on this interface are deleted.

You can configure one or more subinterfaces on a port channel made from routed interfaces.

## Examples

This example shows how to create an EtherChannel group interface with channel-group number 50:

```
switch(config)# interface port-channel 50
switch(config-if)#
```

This example shows how to create a Layer 3 EtherChannel group interface with channel-group number 10:

```
switch(config)# interface port-channel 10
switch(config-if)# no switchport
switch(config-if)# ip address 192.0.2.1/24
switch(config-if)#
```

This example shows how to configure a Layer 3 EtherChannel subinterface with channel-group number 1 in interface configuration mode:

```
switch(config)# interface port-channel 10
switch(config-if)# no switchport
switch(config-if)# interface port-channel 10.1
switch(config-subif)# ip address 192.0.2.2/24
switch(config-subif)#
```

This example shows how to configure a Layer 3 EtherChannel subinterface with channel-group number 20.1 in global configuration mode:

```
switch(config)# interface port-channel 20.1
switch(config-subif)# ip address 192.0.2.3/24
switch(config-subif)#
```

## Related Commands

Command	Description
<b>encapsulation</b>	(Layer 3 interfaces) Sets the encapsulation type for an interface.
<b>ip address</b>	(Layer 3 interfaces) Sets a primary or secondary IP address for an interface.
<b>no switchport</b>	(Layer 3 interfaces) Configures an interface as a Layer 3 interface.
<b>show interface</b>	Displays configuration information about interfaces.
<b>show lacp</b>	Displays LACP information.
<b>show port-channel summary</b>	Displays information on the EtherChannels.
<b>vtp (interface)</b>	Enables VLAN Trunking Protocol (VTP) on an interface.

# interface mgmt

To enter the management interface configuration mode, use the **interface mgmt** command.

```
interface mgmt mgmt-intf-num
```

## Syntax Description

<i>mgmt-intf-num</i>	Management interface number. The interface number is 0.
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## Command Default

None

## Command Modes

Global configuration mode

## Command History

Release	Modification
4.0(0)N1(1a)	This command was introduced.

## Examples

This example shows how to enter the management interface configuration mode:

```
switch# configure terminal
switch(config)# interface mgmt 0
switch(config-if)#
```

## Related Commands

Command	Description
<b>show interface mgmt</b>	Displays information about the management interface.
<b>cdp enable</b>	Enables the Cisco Discovery Protocol (CDP) on an interface.
<b>description (interface)</b>	Adds a description to an interface configuration.
<b>duplex</b>	Configures the duplex mode for an interface.
<b>lldp (interface)</b>	Enables the reception or transmission of Link Layer Discovery Protocol (LLDP) packets on an interface.
<b>rate-limit cpu direction</b>	Configures the packet per second (PPS) rate limit for an interface.
<b>snmp trap link-status</b>	Enables Simple Network Management Protocol (SNMP) link trap generation on an interface.
<b>speed</b>	Configures the transmit and receive speed for an interface.
<b>vrf member</b>	Adds an interface to a virtual routing and forwarding (VRF) instance.

# interface vethernet

To enter interface configuration mode for a virtual Ethernet (vEth) interface, use the **interface vethernet** command. To remove a virtual Ethernet interface, use the **no** form of this command.

```
interface vethernet veth-id [vethernet veth-id...]
```

```
no interface vethernet veth-id [vethernet veth-id...]
```

## Syntax Description

<i>veth-id</i>	Virtual Ethernet interface number. The range is from 1 to 1,048,575. You can specify more than one virtual Ethernet interface. Make sure you use the comma (,) separator.
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## Command Default

None

## Command Modes

Global configuration mode

## Command History

Release	Modification
5.1(3)N1(1)	This command was introduced.

## Usage Guidelines

Before you use a virtual Ethernet interface, you must enable the Cisco Virtual Machine Fabric Extender (VM-FEX) on the switch by using the **feature vmfex** command.

Before you use this command, you must enable the Adapter Fabric Extender (Adapter-FEX) on the switch by using the **feature adapter-fex** command.

You must configure a virtual Ethernet interface on each switch. The configuration in the secondary switch must be identical to that of the primary switch.

You can create a maximum of 1000 virtual Ethernet interfaces on a Cisco Nexus 5548 switch. Before you disable Adapter-FEX on the switch, make sure that you delete these interfaces. After you delete a virtual Ethernet interface, make sure that you save the running configuration of the switch to the startup configuration file.

## Examples

This example shows how to enter configuration mode for virtual Ethernet interface 10:

```
switch# configure terminal
switch(config)# interface vethernet 10
switch(config-if)#
```

This example shows how to enter configuration mode for multiple virtual Ethernet interfaces:

```
switch# configure terminal
switch(config)# interface vethernet 10, vethernet 2
switch(config-if-range)#
```

This example shows how to bind an interface, configure a vEthernet access interface, assign the access VLAN for that interface, and then assign a port profile named ppVEth, and a class of service (CoS) value 3 to a virtual Ethernet interface:

```

switch# configure terminal
switch(config)# port-profile type vethernet ppVEth
switch(config-port-prof)# switchport mode access
switch(config-port-prof)# service-policy type qos input my_policy1
switch(config-port-prof)# exit
switch(config)# interface vethernet 10
switch(config-if)# bind interface ethernet 1/5 channel 10
switch(config-if)# inherit port-profile ppVEth
switch(config-if)# untagged cos 3
switch(config-if)#

```

This example shows how to remove a virtual Ethernet interface:

```

switch# configure terminal
switch(config)# no interface vethernet 2
switch(config)#

```

### Related Commands

Command	Description
<code>bind</code>	Binds an interface to a virtual Ethernet interface.
<code>feature adapter-fex</code>	Enables Adapter-FEX on the switch.
<code>feature vmfex</code>	enables VM-FEX on the switch.
<code>port-profile</code>	Configures a port profile.
<code>show interface ethernet</code>	Displays information about Ethernet interfaces.
<code>show interface vethernet</code>	Displays various parameters of a virtual Ethernet interface.
<code>show running-config interface</code>	Displays the running configuration of an interface.
<code>vethernet auto-create</code>	Sets the default policy to enable auto creation of virtual Ethernet interfaces.

# interface vlan

To create a VLAN interface and enter interface configuration mode, use the **interface vlan** command. To remove a VLAN interface, use the **no** form of this command.

```
interface vlan vlan-id
no interface vlan vlan-id
```

## Syntax Description

<i>vlan-id</i>	VLAN to set when the interface is in access mode; valid values are from 1 to 4094, except for the VLANs reserved for the internal switch use.
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## Command Default

None

## Command Modes

Global configuration mode

## Command History

Release	Modification
4.0(0)N1(1a)	This command was introduced.

## Usage Guidelines

Before you use this command, enable the interface-vlan feature by using the **feature interface-vlan** command.

Use the **interface vlan** command to create or modify VLAN interfaces.

The VLAN interface is created the first time that you enter the **interface vlan** command for a particular VLAN. The *vlan-id* argument corresponds to the VLAN tag that is associated with the data frames on an IEEE 802.1Q-encapsulated trunk, or the VLAN ID that is configured for an access port.

This command does not require a license.

## Examples

This example shows how to create a VLAN interface for VLAN 50:

```
switch(config)# interface vlan 50
switch(config-if)#
```

## Related Commands

Command	Description
<b>feature interface-vlan</b>	Enables the ability to create VLAN interfaces.
<b>show interface vlan</b>	Displays information about the traffic on the specified VLAN interface.



## ip igmp snooping (EXEC)

To enable Internet Group Management Protocol (IGMP), use the **ip igmp snooping** command. To disable IGMP snooping, use the **no** form of this command.

**ip igmp snooping**  
**no ip igmp snooping**

**Syntax Description** This command has no arguments or keywords.

**Command Default** IGMP snooping is enabled.



**Note** If the global setting is disabled, then all VLANs are treated as disabled, whether they are enabled or not.

**Command Modes** EXEC mode

Command History	Release	Modification
	4.0(0)N1(1a)	This command was introduced.

**Examples** This example shows how to enable IGMP snooping:

```
switch# ip igmp snooping
```

Related Commands	Command	Description
	<b>show ip igmp snooping</b>	Displays IGMP snooping information and configuration.

## ip igmp snooping (VLAN)

To configure Internet Group Management Protocol (IGMP) on a VLAN, use the **ip igmp snooping** command. To negate the command or return to the default settings, use the **no** form of this command

**ip igmp snooping** *parameter*

**no ip igmp snooping** *parameter*

### Syntax Description

<i>parameter</i>	Parameter to configure. See the “Usage Guidelines” section for additional information.
------------------	--

### Command Default

The default settings are as follows:

- **explicit-tracking**—enabled
- **fast-leave**—disabled for all VLANs
- **last-member-query-interval** *seconds* —1
- **querier** *IP-address* —disabled
- **report-suppression**—enabled

### Command Modes

VLAN configuration mode

### Command History

Release	Modification
4.0(0)N1(1a)	This command was introduced.
5.1(3)N1(1)	Support for this command was introduced for the Cisco Adapter Fabric Extender (Adapter-FEX).

### Usage Guidelines

The following table lists the valid values for *parameter*:

**Table 1: IGMP Snooping Parameters**

Keyword and Argument	Description
<b>explicit-tracking</b>	Enables tracking IGMPv3 membership reports for each port on a per-VLAN basis. The default is enabled on all VLANs.
<b>fast-leave</b>	Enables IGMPv3 snooping fast-leave processing. The default is disabled for all VLANs.
<b>last-member-query-interval</b> <i>seconds</i>	Removes the group if no hosts respond to an IGMP query message. Valid value is from 1 to 25 seconds. The default is 1 second.
<b>mrouter interface</b> <i>interface</i>	Configures a static connection to a multicast router. The specified interface is Ethernet or EtherChannel.
<b>querier</b> <i>IP-address</i>	Configures a snooping querier. The IP address is used as the source in messages. The default is disabled.

Keyword and Argument	Description
<b>report-suppression</b>	Limits the membership report traffic sent to multicast-capable routers. When you disable report suppression, all IGMP reports are sent as is to multicast-capable routers. The default is enabled.
<b>static-group</b> <i>group-ip-addr</i> [ <b>source</b> <i>source-ip-addr</i> ] <b>interface</b> <i>interface</i>	Configures an interface belonging to a VLAN as a static member of a multicast group. The specified interface is Ethernet or EtherChannel, or virtual Ethernet.

### Examples

This example shows how to configure IGMP snooping parameters for VLAN 5:

```
switch# configure terminal
switch(config)# vlan 5
switch(config-vlan)# ip igmp snooping last-member-query-interval 3
switch(config-vlan)# ip igmp snooping querier 192.168.2.106
switch(config-vlan)# ip igmp snooping explicit-tracking
switch(config-vlan)# ip igmp snooping fast-leave
switch(config-vlan)# ip igmp snooping report-suppression
switch(config-vlan)# ip igmp snooping mrouter interface ethernet 1/10
switch(config-vlan)# ip igmp snooping static-group 192.0.2.1 interface ethernet 1/10
switch(config-vlan)# ip igmp snooping static-group 192.0.2.12 interface vethernet 4/1
switch(config-vlan)#
```

### Related Commands

Command	Description
<b>show ip igmp snooping</b>	Displays the IGMP snooping information and configuration.

# install feature-set virtualization

To install the Cisco virtual machine feature set on the switch, use the **install feature-set virtualization** command. To remove the Cisco virtual machine feature set, use the **no** form of this command.

**install feature-set virtualization**  
**no install feature-set virtualization**

**Syntax Description** This command has no arguments or keywords.

**Command Default** Disabled

**Command Modes** Global configuration mode

Command History	Release	Modification
	5.1(3)N1(1)	This command was introduced.

## Usage Guidelines



**Note** The Cisco virtual machine feature is supported only on the Cisco Nexus 5500 Series switches.

This command requires an Enhanced Layer 2 license.

## Examples

This example shows how to install the Cisco virtual machine feature set on the switch:

```
switch# configure terminal
switch(config)# install feature-set virtualization
switch(config)#
```

## Related Commands

Command	Description
<b>feature vmfex</b>	Enables or disables Cisco Virtual Machine Fabric Extender (VM-FEX) on the switch.
<b>feature-set virtualization</b>	Enables the Cisco virtual machine feature set on the switch.
<b>show feature-set</b>	Displays the status of the virtualization feature set.
<b>show running-config</b>	Displays the running system configuration information.

# install certificate

To install a certificate that is used to connect to a vCenter Server, use the **install certificate** command. To remove a certificate, use the **no** form of this command.

```
install certificate {bootflash:[// server/]|default}
```

**no install certificate**

## Syntax Description

<b>bootflash:</b> [// <i>server</i> /] /]	Specifies the source or destination URL for boot flash memory to install the certificate. The <i>server</i> argument value is <b>module-1</b> , <b>sup-1</b> , <b>sup-active</b> , or <b>sup-local</b> .
<b>default</b>	Specifies the default path.

## Command Default

None

## Command Modes

SVS connection configuration mode

## Command History

Release	Modification
5.1(3)N1(1)	This command was introduced.

## Usage Guidelines

This command does not require a license.

## Examples

This example shows how to install a certificate to the boot flash memory:

```
switch# configure terminal
switch(config)# svcs connection SVSConn
switch(config-svs-conn)# install certificate bootflash:///
switch(config-svs-conn)#
```

This example shows how to remove a certificate:

```
switch# configure terminal
switch(config)# svcs connection SVSConn
switch(config-svs-conn)# no install certificate
switch(config-svs-conn)#
```

## Related Commands

Command	Description
<b>show svcs connections</b>	Displays SVS connection information.
<b>svcs connection</b>	Enables an SVS connection.

# instance vlan

To map a VLAN or a set of VLANs to a Multiple Spanning Tree instance (MSTI), use the **instance vlan** command. To delete the instance and return the VLANs to the default instance (Common and Internal Spanning Tree [CIST]), use the **no** form of this command.

**instance** *instance-id* **vlan** *vlan-id*  
**no instance** *instance-id* [**vlan** *vlan-id*]

## Syntax Description

<i>instance-id</i>	Instances to which the specified VLANs are mapped. The range is from 0 to 4094.
<b>vlan</b> <i>vlan-id</i>	Specifies the number of the VLANs that you are mapping to the specified MSTI. The VLAN ID range is from 1 to 4094.

## Command Default

No VLANs are mapped to any MST instance (all VLANs are mapped to the CIST instance).

## Command Modes

MST configuration mode

## Command History

Release	Modification
4.0(0)N1(1a)	This command was introduced.

## Usage Guidelines

The VLAN identifier is entered as a single value or a range.

The mapping is incremental, not absolute. When you enter a range of VLANs, this range is added to or removed from the existing instances.

Any unmapped VLAN is mapped to the CIST instance.



### Caution

When you change the VLAN-to-MSTI mapping, the system restarts MST.

## Examples

This example shows how to map a range of VLANs to MSTI 4:

```
switch(config)# spanning-tree mst configuration
switch(config-mst)# instance 4 vlan 100-200
```

## Related Commands

Command	Description
<b>show spanning-tree mst configuration</b>	Displays information about the MST protocol.
<b>spanning-tree mst configuration</b>	Enters MST configuration mode.

# interface ethernet

To enter interface configuration mode for an Ethernet IEEE 802.3 interface, use the **interface ethernet** command.

```
interface ethernet [chassis_ID /] slot /[QSFP-module /] port
```

Syntax Description	
<i>chassis_ID</i>	(Optional) Specifies the Fabric Extender chassis ID. The chassis ID is from 100 to 199. <b>Note</b> This argument is not optional when addressing the host interfaces of a Cisco Nexus 2000 Series Fabric Extender.
<i>slot</i>	Slot from 1 to 3. The following list defines the slots available: <ul style="list-style-type: none"> <li>• Slot 1 includes all the fixed ports. A Fabric Extender only has one slot.</li> <li>• Slot 2 includes the ports on the upper expansion module (if populated).</li> <li>• Slot 3 includes the ports on the lower expansion module (if populated).</li> </ul>
<i>port</i>	Port number within a particular slot. The port number is from 1 to 128.

**Command Default** None

**Command Modes** Global configuration mode

Command History	Release	Modification
	4.0(0)N1(1a)	This command was introduced.
	4.0(1a)N2(1)	This command was modified to provide the chassis ID argument.
	5.0(3)N1(1)	Support for Layer 3 interfaces was added.

## Examples

This example shows how to enter configuration mode for Ethernet interface 1/4:

```
switch(config)# interface ethernet 1/4
switch(config-if)#
```

This example shows how to enter configuration mode for a host interface on a Fabric Extender:

```
switch(config)# interface ethernet 101/1/1
switch(config-if)#
```

Related Commands	Command	Description
	<b>interface vethernet</b>	Configures a virtual Ethernet interface.
	<b>show fex</b>	Displays all configured Fabric Extender chassis connected to the switch.
	<b>show interface ethernet</b>	Displays various parameters of an Ethernet IEEE 802.3 interface.

Command	Description
speed	Sets the speed on the interface.
vtp (interface)	Enables VLAN Trunking Protocol (VTP) on an interface.



## interface ethernet (Layer 3)

To configure a Layer 3 Ethernet IEEE 802.3 routed interface, use the **interface ethernet** command.

```
interface ethernet [chassis_ID /] slot/[QSFP-module/] port [. subintf-port-no]
```

Syntax Description	
<i>chassis_ID</i>	(Optional) Specifies the Fabric Extender chassis ID. The chassis ID is from 100 to 199. <b>Note</b> This argument is not optional when addressing the host interfaces of a Cisco Nexus 2000 Series Fabric Extender.
<i>slot</i>	Slot from 1 to 3. The following list defines the slots available: <ul style="list-style-type: none"> <li>• Slot 1 includes all the fixed ports. A Fabric Extender only has one slot.</li> <li>• Slot 2 includes the ports on the upper expansion module (if populated).</li> <li>• Slot 3 includes the ports on the lower expansion module (if populated).</li> </ul>
<i>port</i>	Port number within a particular slot. The port number is from 1 to 128.
.	(Optional) Specifies the subinterface separator.
<i>subintf-port-no</i>	(Optional) Port number for the subinterface. The range is from 1 to 48.

**Command Default** None

**Command Modes** Global configuration mode  
Interface configuration mode

Command History	Release	Modification
	5.0(3)N1(1)	This command was introduced.

**Usage Guidelines** You must use the **no switchport** command in the interface configuration mode to configure the interface as a Layer 3 routed interface. When you configure the interface as a Layer 3 interface, all Layer 2 specific configurations on this interface are deleted.

Use the **switchport** command to convert a Layer 3 interface into a Layer 2 interface. When you configure the interface as a Layer 2 interface, all Layer 3 specific configurations on this interface are deleted.

### Examples

This example shows how to enter configuration mode for a Layer 3 Ethernet interface 1/5:

```
switch(config)# interface ethernet 1/5
switch(config-if)# no switchport
switch(config-if)# ip address 10.1.1.1/24
switch(config-if)#
```

This example shows how to configure a Layer 3 subinterface for Ethernet interface 1/5 in the global configuration mode:

```
switch(config)# interface ethernet 1/5.2
```

```
switch(config-if)# no switchport
switch(config-subif)# ip address 10.1.1.1/24
switch(config-subif)#
```

This example shows how to configure a Layer 3 subinterface in interface configuration mode:

```
switch(config)# interface ethernet 1/5
switch(config-if)# no switchport
switch(config-if)# interface ethernet 1/5.1
switch(config-subif)# ip address 10.1.1.1/24
switch(config-subif)#
```

This example shows how to convert a Layer 3 interface to a Layer 2 interface:

```
switch(config)# interface ethernet 1/5
switch(config-if)# no switchport
switch(config-if)# ip address 10.1.1.1/24
switch(config-if)# switchport
switch(config-if)#
```

#### Related Commands

Command	Description
<b>bandwidth</b>	Sets the bandwidth parameters for an interface.
<b>delay</b>	Configures the interface throughput delay value.
<b>encapsulation</b>	Sets the encapsulation type for an interface.
<b>ip address</b>	Sets a primary or secondary IP address for an interface.
<b>inherit</b>	Assigns a port profile to an interface.
<b>interface vethernet</b>	Configures a virtual Ethernet interface.
<b>no switchport</b>	Configures an interface as a Layer 3 interface.
<b>service-policy</b>	Configures a service policy for an interface.
<b>show fex</b>	Displays all configured Fabric Extender chassis connected to the switch.
<b>show interface ethernet</b>	Displays various parameters of an Ethernet IEEE 802.3 interface.