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CHAPTER 1

Configuring Virtual Interfaces

This section describes the configuration of virtual interfaces on the Cisco Nexus 5000 Series switches. It includes the following sections:

- [Information About Virtual Interfaces, page 1-1](#)
- [Guidelines and Limitations, page 1-1](#)
- [Configuring Virtual Interfaces, page 1-2](#)
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Information About Virtual Interfaces

Cisco Nexus 5000 Series switches support Fibre Channel over Ethernet (FCoE), which allows Fibre Channel and Ethernet traffic to be carried on the same physical Ethernet connection between the switch and the servers. For additional information about FCoE, see [Chapter 1, “Configuring FCoE.”](#)

The Fibre Channel portion of FCoE is configured as a virtual Fibre Channel interface. Logical Fibre Channel features (such as interface mode) can be configured on virtual Fibre Channel interfaces.



Note

Virtual interfaces are created with the administrative state set to down. You need to explicitly configure the administrative state to bring the virtual interface into operation.

Guidelines and Limitations

When configuring virtual interfaces, note the following guidelines and limitations:

- Each virtual Fibre Channel interface must be bound to an FCoE-enabled Ethernet interface. FCoE is supported on 10-Gigabit Ethernet interfaces.
- Each virtual Fibre Channel interface is associated with only one VSAN.
- Any VSAN with associated virtual Fibre Channel interfaces must be mapped to a dedicated FCOE-enabled VLAN.
- FCoE is not supported on private VLANs.

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Configuring Virtual Interfaces

This section describes how to configure virtual interfaces, and it includes the following topics:

- [Creating a Virtual Fibre Channel Interface, page 1-2](#)
- [Mapping VSANs to VLANs, page 1-2](#)
- [Deleting a Virtual Fibre Channel Interface, page 1-3](#)

Creating a Virtual Fibre Channel Interface

The Ethernet interface that you bind the virtual Fibre Channel interface to must be configured as follows:

- It must be a trunk port (use the **switchport mode trunk** command)
- The FCoE VLAN that corresponds to virtual Fibre Channel's VSAN must be in the allowed VLAN list
- FCoE VLAN must not be configured as the native VLAN of the trunk port.
- The Ethernet interface must be configured as portfast (use the **spanning-tree port type edge trunk** command)

Following the above configuration guidelines will ensure a smooth upgrade to a T11 Fibre Channel Initialization Protocol (FIP) based FCoE release in the future.

To create a virtual Fibre Channel interface, perform this task:

	Command	Purpose
Step 1	<code>switch# configure terminal</code>	Enters configuration mode.
Step 2	<code>switch(config)# interface vfc vfc-id</code>	Creates a virtual Fibre Channel interface (if it does not already exist) and enters interface configuration mode. Virtual Fibre Channel interface ID is in the range of 1 to 8192.
Step 3	<code>switch(config-if)# bind interface ethernet slot/port</code>	Binds the virtual Fibre Channel interface to the specified physical Ethernet interface.

Mapping VSANs to VLANs

To create a mapping between a VSAN and its associated VLAN, perform this task:

	Command	Purpose
Step 1	<code>switch# configure terminal</code>	Enters configuration mode.
Step 2	<code>switch(config)# vlan vlan-id</code>	Enters VLAN configuration mode. VLAN number is in the range of 1 to 4096.

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	Command	Purpose
Step 3	<code>switch(config-vlan)# fcoe [vsan vsan-id]</code>	Enables FCoE for the specified VLAN. By default, a mapping is created from this VLAN to the VSAN with the same number. (Optional) Configures the mapping from this VLAN to the specified VSAN.
Step 4	<code>switch(config-vlan)# exit</code>	Exits VLAN configuration mode.
Step 5	<code>switch(config)# vsan database</code>	Enters VSAN configuration mode.
Step 6	<code>switch(config-vsan)# vsan vsan-id interface vfc vfc-id</code>	Configures the association between VSAN and virtual Fibre Channel interface. The VSAN number must map to a VLAN on the physical Ethernet interface that is bound to the virtual Fibre Channel interface.

The following example shows how to configure the VLAN on a physical Ethernet address, create virtual Fibre Channel interface 4, bind vfc 4 to the physical Ethernet interface, enable associated VLAN 200, and map VLAN 200 to VSAN 2:

```
switch# configure terminal
switch(config)# interface ethernet 1/2
switch(config-if)# switchport mode trunk
switch(config-if)# switchport trunk allowed vlan 1,200
switch(config)# interface vfc 4
switch(config-if)# bind interface ethernet 1/2
switch(config-if)# exit
switch(config)# vlan 200
switch(config-vlan)# fcoe vsan 2
switch(config-vlan)# exit
switch(config)# vsan database
switch(config-vsan)# vsan 2 interface vfc 4
```

Deleting a Virtual Fibre Channel Interface

To delete a virtual Fibre Channel interface, perform this task:

	Command	Purpose
Step 1	<code>switch# configure terminal</code>	Enters configuration mode.
Step 2	<code>switch(config)# no interface vfc vfc-id</code>	Deletes a virtual Fibre Channel interface.

The following example shows how to delete a virtual Fibre Channel interface:

```
switch# configure terminal
switch(config)# no interface vfc 4
switch(config-if)# exit
```

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Verifying Virtual Interface Information

To display configuration information about virtual interfaces, perform one of the following tasks:

Command	Purpose
switch# show interface vfc vfc-id	Displays the detailed configuration of the specified Fibre Channel interface.
switch# show interface brief	Displays the status of all interfaces.

The following example shows how to display information about a virtual Fibre Channel interface:

```
switch# show interface vfc 3
vfc3 is down
Bound interface is Ethernet3/2
  Hardware is GigabitEthernet
  Port WWN is 20:01:00:0d:ec:6d:81:3f
  Admin port mode is F
  snmp link state traps are enabled
  Port vsan is 1
  Beacon is turned unknown
  5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
  5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    0 frames input, 0 bytes
    0 discards, 0 errors
  0 frames output, 0 bytes
    0 discards, 0 errors
```

The following example shows the status of all the interfaces on the switch (some output has been removed for brevity):

```
switch# show interface brief
```

```
-----
Interface  Vsan   Admin  Admin  Status      SFP   Oper  Oper  Port
          Mode   Trunk  Mode
          Mode
-----
fc3/1      1      auto   on     trunking    swl   TE    2    --
fc3/2      1      auto   on     sfpAbsent   --   --    --    --
...
fc3/8      1      auto   on     sfpAbsent   --   --    --    --
-----
```

```
-----
Interface          Status      IP Address      Speed  MTU  Port
                  Channel
-----
Ethernet1/1        hwFailure   --              --     1500 --
Ethernet1/2        hwFailure   --              --     1500 --
Ethernet1/3        up          --              10000 1500  --
...
Ethernet1/39       sfpIsAbsen --              --     1500 --
Ethernet1/40       sfpIsAbsen --              --     1500 --
-----
```

```
-----
Interface          Status      IP Address      Speed  MTU
-----
mgmt0              up          172.16.24.41    100    1500
-----
```

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```
-----  
-----  
Interface  Vsan  Admin  Admin  Status      SFP  Oper  Oper  Port  
          Mode  Trunk  Mode  
          Mode  
-----  
vfc 1      1      F      --      down        --  --      --
```

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