



## FCoE Over FEX

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## Information About FCoE Over FEX

The Fibre Channel over Ethernet (FCoE) over Fabric Extenders (FEX) feature allows Fibre Channel traffic to be carried on a FEX port. To enable this feature, the FEX port is shared with the storage Virtual Device Context (VDC). The FEX is connected to the Cisco Nexus 7000/7700 device through a Fabric Port Channel (FPC). FCoE over FEX enables provision of FCoE on host connections.

## FCoE Over FEX With Physical Port vPC

The FCoE over FEX with Virtual PortChannel (vPC) feature allows Fibre Channel traffic to be carried over a FEX using a physical port virtual PortChannel (vPC). To enable this feature, the FEX port is shared with the storage VDC.

## LAN Shutdown

The LAN Shutdown feature detects the capability of the FCoE host to support Data Center Bridging Exchange (DCBX). DCBX allows the switch to send LAN Logical Link Status (LLS) messages in a type-length-value (TLV) format. The LAN shutdown feature enables bring up and bring down of LAN links on a unified link carrying both FCoE and LAN traffic. When you enable the **shutdown lan** command, only the LAN traffic stops while the FCoE traffic continues.

## Default Settings for FCoE

This table lists the default settings for FCoE parameters.

*Table 1: Default FCoE Parameter Settings*

Parameters	Default
FCoE feature	Not installed, disabled
FC-Map	0E.FC.00
Fabric priority	128
Advertisement interval	8 seconds

## Guidelines and Limitations

### FCoE Over FEX

FCoE over FEX has the following guidelines and limitations:

- FCoE over FEX is supported with 2232PP, B22-HP, N2348UPQ FEX.
- To enable FCoE over FEX on the storage VDC, use the **feature-set fex** command in the storage VDC.
- FCoE license should be enabled on the FEX uplink port on the parent switch.
- To enable support of FCoE over FEX on the parent switch explicitly, use the **hardware qos fcoe-fex** command.
- Inter VSAN route (IVR) zone configuration is not supported for FCoE over FEX.
- Custom QoS policy cannot be applied on the uplink interfaces of the FEX Port channel.
- FCoE over host interface port channel (HIF-PC) is not supported.
- If you connect a FEX with FPC ports that is sharing its ports with a storage VDC to an F2e module that is also sharing its ports with the same storage VDC, the port manager times out when you reload the F2e module. The ports on the F2e module that were shared with the storage VDC will be in the removed state in the storage VDC. You will have to reload the switch to recover from this state.
- FCoE over FEX is not supported on Active/Active FEX.



#### Note

For more information about FEX, refer

[http://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus2000/sw/configuration/guide/tel\\_4\\_0\\_1a/NX2000CLIConfig/FEX-features.html](http://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus2000/sw/configuration/guide/tel_4_0_1a/NX2000CLIConfig/FEX-features.html)

## FCoE over FEX with Physical Port vPC

FCoE over FEX with Physical Port vPC has the following guidelines and limitations:

- FCoE over physical port vPC+ is supported.
- FCoE over physical port vPC is supported on shared interfaces.
- FCoE over physical port vPC is supported only on host facing links.
- Port channel vPC does not support FCoE.
- Both vPC legs should be shared between the ethernet VDC and the storage VDC.

## LAN Shutdown

The LAN Shutdown feature has the following guidelines and limitations:

- LAN shutdown is supported only on shared interfaces in the parent virtual device context (VDC).
- LAN shutdown requires Link Layer Discovery Protocol (LLDP) to run in the parent VDC.

## FCoE Over FEX

### Bringing up FEX in Ethernet VDC

Refer [Configuring the Fabric Extender](#) section.

### Configuring FCoE over FEX

#### SUMMARY STEPS

1. **configure terminal**
2. **hardware qos fcoe-fex**
3. **license fcoe module** *module-number*
4. **exit**
5. **switchto vdc** *ethernet-vdc-name*
6. **configure terminal**
7. **interface port-channel** *channel-number*
8. **switchport**
9. **switchport mode fex-fabric**
10. **priority-flow-control mode** {**auto** | **off** | **on**}
11. **fex associate** *chassis-id*
12. **no shutdown**
13. **interface ethernet** *slot/port-list*
14. **switchport**
15. **switchport mode fex-fabric**

16. **priority-flow-control mode** {auto | off | on}
17. **fex associate** *chassis-id*
18. **channel-group** *number*
19. **no shutdown**
20. **interface** *if-range*
21. **switchport**
22. **switchport mode trunk**
23. **spanning tree port type edge trunk**
24. **no shutdown**
25. **exit**
26. **feature lldp**
27. **switchback**
28. **switchto vdc** *storage-vdc-name*
29. **configure terminal**
30. **feature-set fex**
31. **feature lldp**
32. **switchback**
33. **configure terminal**
34. **vdc** *storage-vdc-name*
35. **allocate fcoe-vlan-range** *vlan-range* **from vdc** *ethernet-vdc-name*
36. **[no] allocate shared interface** *if-range*

## DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>configure terminal</b> <b>Example:</b> <pre>switch# configure terminal switch(config)#</pre>	Enters configuration mode in the default VDC.
<b>Step 2</b>	<b>hardware qos fcoe-fex</b> <b>Example:</b> <pre>switch(config)# hardware qos fcoe-fex</pre>	Enables FCoE over FEX support and Priority Flow Control (PFC) behavior on the FEX port. Use the <b>no</b> form of the command to disable FCoE over FEX support.
<b>Step 3</b>	<b>license fcoe module</b> <i>module-number</i> <b>Example:</b> <pre>switch(config)# license fcoe module 3</pre>	Associates an FCoE license to a module in which the fabric port channel (FPC) ports are present. .
<b>Step 4</b>	<b>exit</b> <b>Example:</b> <pre>switch(config)# exit</pre>	Exits the default VDC configuration mode.
<b>Step 5</b>	<b>switchto vdc</b> <i>ethernet-vdc-name</i> <b>Example:</b> <pre>switch# switchto vdc ethernet-vdc</pre>	Switches to the ethernet VDC from the default VDC.

	Command or Action	Purpose
Step 6	<b>configure terminal</b> <b>Example:</b> <pre>switch-ethernet-vdc# configure terminal switch-ethernet-vdc(config)#</pre>	Enters configuration mode.
Step 7	<b>interface port-channel <i>channel-number</i></b> <b>Example:</b> <pre>switch-ethernet-vdc(config)# interface port-channel 4 switch-ethernet-vdc(config-if)#</pre>	Creates a port-channel interface and enter interface configuration mode.
Step 8	<b>switchport</b> <b>Example:</b> <pre>switch-ethernet-vdc(config-if)# switchport</pre>	Sets the interface as a Layer 2 switching port.
Step 9	<b>switchport mode fex-fabric</b> <b>Example:</b> <pre>switch-ethernet-vdc(config-if)# switchport mode fex-fabric</pre>	Sets the interface type to be an uplink port for a Fabric Extender (FEX).
Step 10	<b>priority-flow-control mode {auto   off   on}</b> <b>Example:</b> <pre>switch-ethernet-vdc(config-if)# priority-flow-control mode on</pre>	Configure Priority Flow Control on a per-port basis and on the port channel. <b>Note</b> This command is enabled by default when you enable the <b>hardware qos fcoe-fex</b> command in the default VDC.
Step 11	<b>fex associate <i>chassis-id</i></b> <b>Example:</b> <pre>switch-ethernet-vdc(config-if)# fex associate 100</pre>	Associates a Fabric Extender (FEX) to a fabric interface.
Step 12	<b>no shutdown</b> <b>Example:</b> <pre>switch-ethernet-vdc(config-if)# no shutdown</pre>	Administratively enables the Ethernet shared interface.
Step 13	<b>interface ethernet <i>slot/port-list</i></b> <b>Example:</b> <pre>switch-ethernet-vdc(config)# interface ethernet 1/37 switch-ethernet-vdc(config-if)#</pre>	Configures an Ethernet interface and enter interface configuration mode.
Step 14	<b>switchport</b> <b>Example:</b> <pre>switch-ethernet-vdc(config-if)# switchport</pre>	Sets the interface as a Layer 2 switching port.
Step 15	<b>switchport mode fex-fabric</b> <b>Example:</b>	Sets the interface type to be an uplink port for a Fabric Extender (FEX).

	Command or Action	Purpose
	<code>switch-ethernet-vdc(config-if)# switchport mode fex-fabric</code>	
<b>Step 16</b>	<p><b>priority-flow-control mode</b> {auto   off   on}</p> <p><b>Example:</b></p> <pre>switch-ethernet-vdc(config-if)# priority-flow-control mode on</pre>	<p>Configure Priority Flow Control on a per-port basis.</p> <p><b>Note</b> This command is enabled by default when you enable the <b>hardware qos fcoe-fex</b> command in the default VDC.</p>
<b>Step 17</b>	<p><b>fex associate</b> <i>chassis-id</i></p> <p><b>Example:</b></p> <pre>switch-ethernet-vdc(config-if)# fex associate 100</pre>	Associates a Fabric Extender (FEX) to a fabric interface.
<b>Step 18</b>	<p><b>channel-group</b> <i>number</i></p> <p><b>Example:</b></p> <pre>switch-ethernet-vdc(config-if)# channel-group 4</pre>	Assigns and configures a physical interface to a port-channel group.
<b>Step 19</b>	<p><b>no shutdown</b></p> <p><b>Example:</b></p> <pre>switch-ethernet-vdc(config-if)# no shutdown</pre>	Administratively enables the Ethernet shared interface.
<b>Step 20</b>	<p><b>interface</b> <i>if-range</i></p> <p><b>Example:</b></p> <pre>switch-ethernet-vdc(config-if)# interface ethernet 100/1/1 switch-ethernet-vdc(config-if)#</pre>	Configures the interface and enters interface configuration mode in the ethernet VDC.
<b>Step 21</b>	<p><b>switchport</b></p> <p><b>Example:</b></p> <pre>switch-ethernet-vdc(config-if)# switchport</pre>	Sets the interface as a Layer 2 switching port.
<b>Step 22</b>	<p><b>switchport mode trunk</b></p> <p><b>Example:</b></p> <pre>switch-ethernet-vdc(config-if)# switchport mode trunk</pre>	Puts the Ethernet interface into trunk mode.
<b>Step 23</b>	<p><b>spanning tree port type edge trunk</b></p> <p><b>Example:</b></p> <pre>switch-ethernet-vdc(config-if)# spanning tree port type edge trunk</pre>	Configures an interface connected to a host as an edge port
<b>Step 24</b>	<p><b>no shutdown</b></p> <p><b>Example:</b></p> <pre>switch-ethernet-vdc(config-if)# no shutdown</pre>	Administratively enables the Ethernet shared interface.
<b>Step 25</b>	<p><b>exit</b></p> <p><b>Example:</b></p>	Exits the interface configuration mode.

	Command or Action	Purpose
	<code>switch-ethernet-vdc(config-if)# exit</code>	
<b>Step 26</b>	<b>feature lldp</b> <b>Example:</b> <code>switch-ethernet-vdc(config)# feature lldp</code>	Enables the LLDP feature in the ethernet VDC.
<b>Step 27</b>	<b>switchback</b> <b>Example:</b> <code>switch-ethernet-vdc(config)# switchback</code> <code>switch#</code>	Go to default VDC.
<b>Step 28</b>	<b>switchto vdc storage-vdc-name</b> <b>Example:</b> <code>switch# switchto vdc storage-vdc</code> <code>switch-storage-vdc#</code>	Switches to the storage VDC.
<b>Step 29</b>	<b>configure terminal</b> <b>Example:</b> <code>switch-storage-vdc# configure terminal</code> <code>switch-storage-vdc(config)#</code>	Enters configuration mode.
<b>Step 30</b>	<b>feature-set fex</b> <b>Example:</b> <code>switch-storage-vdc(config)# feature-set fex</code>	Enables the Fabric Extender (FEX) feature set in the storage VDC.
<b>Step 31</b>	<b>feature lldp</b> <b>Example:</b> <code>switch-storage-vdc(config)# feature lldp</code>	Enables the LLDP feature in the storage VDC.
<b>Step 32</b>	<b>switchback</b> <b>Example:</b> <code>switch-storage-vdc(config)# switchback</code> <code>switch#</code>	Go to default VDC.
<b>Step 33</b>	<b>configure terminal</b> <b>Example:</b> <code>switch# configure terminal</code> <code>switch(config)#</code>	Enters configuration mode in the default VDC.
<b>Step 34</b>	<b>vdc storage-vdc-name</b> <b>Example:</b> <code>switch(config)# vdc storage-vdc</code>	Specifies the storage VDC in the default VDC.
<b>Step 35</b>	<b>allocate fcoe-vlan-range vlan-range from vdc ethernet-vdc-name</b> <b>Example:</b>	Allocates Fibre Channel over Ethernet (FCoE) VLANs to a virtual device context (VDC),

	Command or Action	Purpose
	switch(config-vdc)# allocate fcoe-vlan-range 2-8 from vdc ethernet-vdc	
<b>Step 36</b>	<p><b>[no] allocate shared interface</b> <i>if-range</i></p> <p><b>Example:</b></p> <pre>switch(config-vdc)# allocate shared interface ethernet 100/1/1 Ports that share the port group of the interfaces you have specified will be affected as well. Continue (y/n)? y</pre>	<p>Shares FEX interface from the Ethernet VDC to the storage VDC.</p> <p><b>Note</b> It is expected that, if the feature-set FEX is not enabled, then the <b>allocate shared interface</b> <i>fex_interfaces</i> command fails on VDC write-erase/reload. To resolve, un-configure the shared interfaces and configure it back.</p>

### Example

This example shows how to configure FCoE over FEX:

```
!Default VDC
switch# configure terminal
switch(config)# hardware qos fcoe-fex
switch(config)# license fcoe module 3
switch(config)# exit
switch# switchto vdc ethernet-vdc
!Ethernet VDC
switch-ethernet-vdc# configure terminal
switch-ethernet-vdc(config)# interface port-channel 4
switch-ethernet-vdc(config-if)# switchport
switch-ethernet-vdc(config-if)# switchport mode fex-fabric
switch-ethernet-vdc(config-if)# priority-flow-control mode on
switch-ethernet-vdc(config-if)# fex associate 100
switch-ethernet-vdc(config-if)# no shutdown
switch-ethernet-vdc(config)# interface ethernet 1/37
switch-ethernet-vdc(config-if)# switchport
switch-ethernet-vdc(config-if)# switchport mode fex-fabric
switch-ethernet-vdc(config-if)# priority-flow-control mode on
switch-ethernet-vdc(config-if)# fex associate 100
switch-ethernet-vdc(config-if)# channel-group 4
switch-ethernet-vdc(config-if)# no shutdown
switch-ethernet-vdc(config-if)# interface ethernet 100/1/1
switch-ethernet-vdc(config-if)# switchport
switch-ethernet-vdc(config-if)# switchport mode trunk
switch-ethernet-vdc(config-if)# spanning tree port type edge trunk
switch-ethernet-vdc(config-if)# no shutdown
switch-ethernet-vdc(config-if)# exit
switch-ethernet-vdc(config)# feature lldp
switch-ethernet-vdc(config)# switchback
!Default VDC
switch# switchto vdc storage-vdc
!Storage VDC
switch-storage-vdc# configure terminal
switch-storage-vdc(config)# feature-set fex
switch-storage-vdc(config)# feature lldp
switch-storage-vdc(config)# switchback
!Default VDC
switch# configure terminal
switch(config)# vdc storage-vdc
switch(config-vdc)# allocate fcoe-vlan-range 2-8 from vdc ethernet-vdc
switch(config-vdc)# allocate shared interface ethernet 100/1/1
```



## Binding VFC to Shared FEX Interface Explicitly

### SUMMARY STEPS

1. **configure terminal**
2. **interface vfc vfc-id**
3. **bind {interface {ethernet [chassis-id]/ slot/ port}}**
4. **no shutdown**
5. (Optional) **show interface vfc**
6. (Optional) **copy running-config startup-config**

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>configure terminal</b>  <b>Example:</b> switch-storage-vdc# configure terminal switch-storage-vdc(config)#	Enters configuration mode.
<b>Step 2</b>	<b>interface vfc vfc-id</b>  <b>Example:</b> switch-storage-vdc(config)# interface vfc 100 switch-storage-vdc(config-if)#	Creates a virtual Fibre Channel interface (if it does not already exist) and enters interface configuration mode. The <i>chassis-id</i> range is from 100 to 199.
<b>Step 3</b>	Required: <b>bind {interface {ethernet [chassis-id]/ slot/ port}}</b>  <b>Example:</b> switch-storage-vdc(config-if)# bind interface ethernet 100/1/1	Explicitly binds the virtual Fibre Channel interface to the specified interface. Use the <b>no</b> form of this command to unbind the virtual Fibre Channel interface from the specified interface. The <i>chassis-id</i> range is from 100 to 199.
<b>Step 4</b>	<b>no shutdown</b>  <b>Example:</b> switch-storage-vdc(config-if)# no shutdown	Administratively enables the Ethernet shared interface.
<b>Step 5</b>	(Optional) <b>show interface vfc</b>  <b>Example:</b> switch-storage-vdc(config-if)# show interface vfc	Displays information about the virtual Fibre Channel interfaces.
<b>Step 6</b>	(Optional) <b>copy running-config startup-config</b>  <b>Example:</b> switch-storage-vdc(config)# copy running-config startup-config	Copies the running configuration to the startup configuration.

### Example

This example shows how to bind a virtual Fibre Channel interface to a FEX interface:

```

switch-storage-vdc# configure terminal
switch-storage-vdc(config)# interface vfc 100
switch-storage-vdc(config-if)# bind interface ethernet 100/1/1
switch-storage-vdc(config-if)# no shutdown

```

## Binding VFC to Shared FEX Interface Implicitly

### SUMMARY STEPS

1. **configure terminal**
2. **interface vfc** [*chassis-id*]/ *slot*/*port*
3. **no shutdown**
4. (Optional) **show interface vfc**
5. (Optional) **copy running-config startup-config**

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>configure terminal</b>  <b>Example:</b> switch-storage-vdc# configure terminal switch-storage-vdc(config)#	Enters configuration mode.
<b>Step 2</b>	<b>interface vfc</b> [ <i>chassis-id</i> ]/ <i>slot</i> / <i>port</i>  <b>Example:</b> switch-storage-vdc(config)# interface vfc 100/1/1 switch-storage-vdc(config-if)#	Creates a virtual Fibre Channel interface (if it does not already exist) and enters interface configuration mode. This command binds the VFC to the shared FEX interface implicitly. The <i>chassis-id</i> range is from 100 to 199. This command binds the Ethernet interface 100/1/1 to the shared FEX interface.
<b>Step 3</b>	<b>no shutdown</b>  <b>Example:</b> switch-storage-vdc(config-if)# no shutdown	Administratively enables the Ethernet shared interface.
<b>Step 4</b>	(Optional) <b>show interface vfc</b>  <b>Example:</b> switch-storage-vdc(config-if)# show interface vfc	Displays information about the virtual Fibre Channel interfaces.
<b>Step 5</b>	(Optional) <b>copy running-config startup-config</b>  <b>Example:</b> switch-storage-vdc(config)# copy running-config startup-config	Copies the running configuration to the startup configuration.

### Example

This example shows how to bind a virtual Fibre Channel interface to a FEX interface implicitly:

```
switch-storage-vdc# configure terminal
switch-storage-vdc(config)# interface vfc 100/1/1
switch-storage-vdc(config)# no shutdown
```

## Verifying the FCoE over FEX Configuration

To display FCoE over FEX configuration information, perform one of these tasks:

Command	Purpose
<b>show fex</b>	Displays information about all Fabric Extenders (FEX) available in a specific VDC. Use this command in storage VDC and ethernet VDC.
<b>show fex detail</b>	Displays detailed information about all Fabric Extenders (FEX) available in a specific VDC. Use this command in storage VDC and ethernet VDC.
<b>show fex chassis-id</b>	Displays information about a specific FEX. Use this command in storage VDC and ethernet VDC.
<b>show vdc shared membership</b>	Displays the FEX interfaces shared with the storage virtual device context (VDC). Use this command in the default VDC.
<b>show vdc shared membership both</b>	Displays the FPC ports that are implicitly shared as a result of the shared FEX interface. Use this command in the default VDC.
<b>show flogi database</b>	Lists all the FLOGI sessions. Use this command in the storage VDC.

This example shows how to display information about all attached Fabric Extender (FEX) chassis:

```
switch-storage-vdc# show fex
FEX              FEX              FEX              FEX
-----
Number      Description      State      Model      Serial
-----
100          FEX0100          Online     N2K-C2232PP-10GE  SSI181202V9
```

This example shows how to display detailed information about all attached FEX chassis:

```
switch-ethernet-vdc# show fex detail
FEX: 101 Description: FEX0100 state: Online
FEX version: 7.2(0)D1(1) [Switch version: 7.2(0)D1(1)]
FEX Interim version: (1)FIP_0_28
Switch Interim version: 7.2(0)D1(1)
```

```

Extender Serial: SSI181202V9
Extender Model: N2K-C2232PP-10GE, Part No: 73-12533-06
Card Id: 82, Mac Addr: 58:0a:20:37:e4:02, Num Macs: 64
Keepalive pending for 1 intervals
Module Sw Gen: 12594 [Switch Sw Gen: 21]
Pinning-mode: static Max-links: 1
Fabric port for control traffic: Eth1/19
FCoE Admin: false
FCoE Oper: true
FCoE FEX AA Configured: false
Fabric interface state:
  Po100 - Interface Up. State: Active
  Eth1/37 - Interface Up. State: Active
Fex Port      State Fabric Port
  Eth100/1/1  Up      Po4
  Eth100/1/2  Down    Po4
  Eth100/1/3  Down    Po4
  Eth100/1/4  Down    Po4
  Eth100/1/5  Down    Po4
  Eth100/1/6  Down    Po4
  Eth100/1/7  Down    Po4
  Eth100/1/8  Down    Po4
  Eth100/1/9  Down    Po4
  Eth100/1/10 Down    Po4
  Eth100/1/11 Down    Po4
  Eth100/1/12 Down    Po4
  Eth100/1/13 Down    Po4
  Eth100/1/14 Down    Po4
  Eth100/1/15 Down    Po4
  Eth100/1/16 Down    Po4
  Eth100/1/17 Down    Po4
  Eth100/1/18 Down    Po4
  Eth100/1/19 Down    Po4
  Eth100/1/20 Down    Po4
  Eth100/1/21 Down    Po4
  Eth100/1/22 Down    Po4
  Eth100/1/23 Down    Po4
  Eth100/1/24 Down    Po4
  Eth100/1/25 Down    Po4
  Eth100/1/26 Down    Po4
  Eth100/1/27 Down    Po4
  Eth100/1/28 Down    Po4
  Eth100/1/29 Down    Po4
  Eth100/1/30 Down    Po4
  Eth100/1/31 Down    Po4
  Eth100/1/32 Down    Po4
<---output truncated--->

```

This example shows how to display information about a specific FEX:

```

switch-storage-vdc# show fex 100
FEX: 101 Description: FEX0100 state: Online
  FEX version: 7.2(0)D1(1) [Switch version: 7.2(0)D1(1)]
  Extender Serial: SSI181202V9
  Extender Model: N2K-C2232PP-10GE, Part No: 73-12533-06
  Keepalive pending for 1 intervals
  Pinning-mode: static Max-links: 1
  Fabric port for control traffic: Eth1/37
  FCoE Admin: false
  FCoE Oper: false
  FCoE FEX AA Configured: false
  Fabric interface state:
    Po101 - Interface Up. State: Active
    Eth3/1 - Interface Up. State: Active
    Eth3/2 - Interface Up. State: Active

```

This example shows how to display the FEX interfaces shared with the storage virtual device context (VDC):

```
switch# show vdc shared membership
vdc_id: 3 vdc_name: fcoe-vdc interfaces:
    Ethernet100/1/1
```

This example shows how to display the FPC ports that are implicitly shared as a result of the shared FEX interface:

```
switch# show vdc shared membership both
vdc_id: 3 vdc_name: fcoe-vdc interfaces:
    Ethernet100/1/1
Implicitly shared interfaces:
    Ethernet100/1/2
```

This example shows how to list the FLOGI sessions:

```
switch-storage-vdc# show flogi database
-----
INTERFACE          VSAN    FCID          PORT NAME          NODE NAME
-----
vfc100/1/1         100    0x800020    10:00:00:00:06:67:e9:00    20:00:00:00:06:67:e9:00

Total number of flogi = 1.
```

## Example: FCoE Over FEX Configuration

```
!Configuring FCoE over FEX:
!Default VDC
switch# configure terminal
switch(config)# hardware qos fcoe-fex
switch(config)# license fcoe module 3
switch(config)# exit
switch# switchto vdc ethernet-vdc
!Ethernet VDC
switch-ethernet-vdc# configure terminal
switch-ethernet-vdc(config)# interface port-channel 4
switch-ethernet-vdc(config-if)# switchport
switch-ethernet-vdc(config-if)# switchport mode fex-fabric
switch-ethernet-vdc(config-if)# priority-flow-control mode on
switch-ethernet-vdc(config-if)# fex associate 100
switch-ethernet-vdc(config-if)# no shutdown
switch-ethernet-vdc(config)# interface ethernet 1/37
switch-ethernet-vdc(config-if)# switchport
switch-ethernet-vdc(config-if)# switchport mode fex-fabric
switch-ethernet-vdc(config-if)# priority-flow-control mode on
switch-ethernet-vdc(config-if)# fex associate 100
switch-ethernet-vdc(config-if)# channel-group 4
switch-ethernet-vdc(config-if)# no shutdown
switch-ethernet-vdc(config-if)# interface ethernet 100/1/1
switch-ethernet-vdc(config-if)# switchport
switch-ethernet-vdc(config-if)# switchport mode trunk
switch-ethernet-vdc(config-if)# spanning tree port type edge trunk
switch-ethernet-vdc(config-if)# no shutdown
switch-ethernet-vdc(config-if)# exit
switch-ethernet-vdc(config)# feature lldp
switch-ethernet-vdc(config)# switchback
!Default VDC
switch# switchto vdc storage-vdc
!Storage VDC
```

```

switch-storage-vdc# configure terminal
switch-storage-vdc(config)# feature-set fex
switch-storage-vdc(config)# feature lldp
switch-storage-vdc(config)# switchback
!Default VDC
switch# configure terminal
switch(config)# vdc storage-vdc
switch(config-vdc)# allocate fcoe-vlan-range 2-8 from vdc ethernet-vdc
switch(config-vdc)# allocate shared interface ethernet 100/1/1

!Bind VFC to Shared FEX Interface Explicitly:
switch-storage-vdc# configure terminal
switch-storage-vdc(config)# interface vfc 100
switch-storage-vdc(config-if)# bind interface ethernet 100/1/1
switch-storage-vdc(config-if)# no shutdown

!Bind VFC to Shared FEX Interface Implicitly:
switch-storage-vdc# configure terminal
switch-storage-vdc(config)# interface vfc 100/1/1
switch-storage-vdc(config)# no shutdown

```

## Additional References for FCoE over FEX

### Related Documents

Related Topic	Document Title
Command reference	<i>Cisco NX-OS FCoE Command Reference for Cisco Nexus 7000</i>
Cisco NX-OS licensing	<i>Cisco NX-OS Licensing Guide</i>
Configuring vPCs	<i>Cisco Nexus 7000 Series NX-OS Interfaces Configuration Guide</i>

### MIBs

MB	MIBs Link
	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL: <a href="http://www.cisco.com/go/mibs">http://www.cisco.com/go/mibs</a>

**Technical Assistance**

Description	Link
<p>The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies.</p> <p>To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds.</p> <p>Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.</p>	<a href="http://www.cisco.com/support">http://www.cisco.com/support</a>

