



# Configuring Fabric Interconnects and Ports

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This chapter contains the following sections:

- [Configuring the Fabric Interconnect Switching Mode, on page 1](#)
- [Configuring Ports, on page 4](#)
- [Configuring Port Channels, on page 15](#)

## Configuring the Fabric Interconnect Switching Mode

### Ethernet Switching Mode

The Ethernet switching mode determines how the fabric interconnect behaves as a switching device between the servers and the network. The fabric interconnect operates in either of the following Ethernet switching modes:

#### End-Host Mode

End-host mode allows the fabric interconnect to act as an end host to the network, representing all servers (hosts) connected to it through vNICs. This behavior is achieved by pinning (either dynamically pinned or hard pinned) vNICs to uplink ports, which provides redundancy to the network, and makes the uplink ports appear as server ports to the rest of the fabric. In end-host mode, the fabric interconnect does not run the Spanning Tree Protocol (STP) but it avoids loops by denying uplink ports from forwarding traffic to each other and by denying egress server traffic on more than one uplink port at a time. End-host mode is the default Ethernet switching mode and should be used if either of the following are used upstream:

- Layer 2 switching for Layer 2 aggregation
- Virtual Switching System (VSS) aggregation layer



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**Note** When you enable end-host mode, if a vNIC is hard pinned to an uplink port and this uplink port goes down, the system cannot repin the vNIC, and the vNIC remains down.

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### Switch Mode

Switch mode is the traditional Ethernet switching mode. The fabric interconnect runs STP to avoid loops, and broadcast and multicast packets are handled in the traditional way. Switch mode is not the default Ethernet switching mode, and should be used only if the fabric interconnect is directly connected to a router, or if either of the following are used upstream:

- Layer 3 aggregation
- VLAN in a box




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**Note** For both Ethernet switching modes, even when vNICs are hard pinned to uplink ports, all server-to-server unicast traffic in the server array is sent only through the fabric interconnect and is never sent through uplink ports. Server-to-server multicast and broadcast traffic is sent through all uplink ports in the same VLAN.

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## Changing the Ethernet Switching Mode




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**Note** When you change the Ethernet switching mode, Cisco UCS Director issues a request to Cisco UCS Manager to restart the fabric interconnect. For a cluster configuration, Cisco UCS Director issues a request to restart both fabric interconnects sequentially. The second fabric interconnect can take several minutes to complete the change in Ethernet switching mode and become system-ready. The configuration is retained.

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- Step 1** Choose **Physical > Compute**.
  - Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.
  - Step 3** Click **Fabric Interconnects**.
  - Step 4** Click the row for the fabric interconnect for which you want to change the switching mode.
  - Step 5** Click **Ethernet Mode**.
  - Step 6** On the **Fabric Interconnect Mode Settings** screen, enter a reason for the change in the **Reason** field and click **Change Mode**.
- Cisco UCS Director issues the request to restart the fabric interconnect.
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## Fibre Channel Switching Mode

The Fibre Channel switching mode determines how the fabric interconnect behaves as a switching device between the servers and storage devices. The fabric interconnect operates in either of the following Fibre Channel switching modes:

### End-Host Mode

End-host mode allows the fabric interconnect to act as an end host to the connected fibre channel networks, representing all servers (hosts) connected to it through virtual host bus adapters (vHBAs). This behavior is achieved by pinning (either dynamically pinned or hard pinned) vHBAs to Fibre Channel uplink ports, which

makes the Fibre Channel ports appear as server ports (N-ports) to the rest of the fabric. When in end-host mode, the fabric interconnect avoids loops by denying uplink ports from receiving traffic from one another.

End-host mode is synonymous with N Port Virtualization (NPV) mode. This mode is the default Fibre Channel Switching mode.



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**Note** When you enable end-host mode, if a vHBA is hard pinned to an uplink Fibre Channel port and this uplink port goes down, the system cannot repin the vHBA, and the vHBA remains down.

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### Switch Mode

Switch mode is the traditional Fibre Channel switching mode. Switch mode allows the fabric interconnect to connect directly to a storage device. Enabling Fibre Channel switch mode is useful in Pod models where there is no SAN (for example, a single Cisco UCS domain that is connected directly to storage), or where a SAN exists (with an upstream MDS).

Switch mode is not the default Fibre Channel switching mode.



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**Note** In Fibre Channel switch mode, SAN pin groups are irrelevant. Any existing SAN pin groups are ignored.

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### Cisco UCS Fabric Interconnect in Switch Mode with Cisco MDS 9000 Family Fibre Channel Switching Modules

While creating a port channel between a Cisco MDS 9000 family FC switching module and a Cisco UCS Fabric Interconnect in switch mode, use the following order:

1. Create the port channel on the MDS side.
2. Add the port channel member ports.
3. Create the port channel on the Fabric Interconnect side.
4. Add the port channel member ports.

If you create the port channel on the Fabric Interconnect side first, the ports will go into a suspended state.

When the Cisco UCS Fabric Interconnect is in switch mode, the port channel mode can only be in **ON** mode and not **Active**. However, to get the peer wwn information for the Fabric Interconnect, the port channel must be in **Active** mode.

## Changing Fibre Channel Switching Mode



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**Note** When you change the Fibre Channel switching mode, Cisco UCS Director issues a request to Cisco UCS Manager to restart the fabric interconnect. For a cluster configuration, Cisco UCS Director issues a request to restart both fabric interconnects sequentially. The second fabric interconnect can take several minutes to complete the change in Fibre Channel switching mode and become system-ready. The configuration is retained.

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- Step 1** Choose **Physical > Compute**.
- Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.
- Step 3** Click **Fabric Interconnects**.
- Step 4** Click the row for the fabric interconnect for which you want to change the switching mode.
- Step 5** Click **FC Mode**.
- Step 6** On the **Fabric Interconnect Mode Settings** screen, enter a reason for the change in the **Reason** field and click **Change Mode**.
- Cisco UCS Director issues the request to restart the fabric interconnect.
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## Configuring Ports

### Ports on the Cisco UCS 6100 Series Fabric Interconnect

Each Cisco UCS 6100 series fabric interconnect has a set of ports in a fixed port module that you can configure as either server ports or uplink Ethernet ports. These ports are not reserved. They cannot be used by a Cisco UCS domain until you configure them. You can add expansion modules to increase the number of uplink ports on the fabric interconnect or to add uplink Fibre Channel ports to the fabric interconnect.

Create LAN pin groups and SAN pin groups to pin traffic from servers to an uplink port.



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**Note** Ports on the Cisco UCS 6100 series fabric interconnect are not unified. For more information on Unified Ports, see [Port Modes, on page 5](#).

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Each fabric interconnect can include the following port types:

#### Server Ports

Server ports handle data traffic between the fabric interconnect and the adapter cards on the servers.

You can only configure server ports on the fixed port module. Expansion modules do not include server ports.

#### Uplink Ethernet Ports

Uplink Ethernet ports handle Ethernet traffic between the fabric interconnect and the next layer of the network. All network-bound Ethernet traffic is pinned to one of these ports.

By default, Ethernet ports are unconfigured. However, you can configure them to function in the following ways:

- Uplink
- FCoE
- Appliance

You can configure uplink Ethernet ports on either the fixed module or an expansion module.

### Uplink Fibre Channel Ports

Uplink Fibre Channel ports handle FCoE traffic between the fabric interconnect and the next layer of the storage area network. All network-bound FCoE traffic is pinned to one of these ports.

By default, Fibre Channel ports are uplink. However, you can configure them to function as Fibre Channel storage ports. This is useful in cases where Cisco UCS requires a connection to a Direct-Attached Storage (DAS) device.

You can only configure uplink Fibre Channel ports on an expansion module. The fixed module does not include uplink Fibre Channel ports.

## Port on the Cisco UCS 6200 Series Fabric Interconnect

### Port Modes

For Cisco UCS 6200 series fabric interconnects, configure the port mode for the ports. The port mode determines whether a unified port on the fabric interconnect is configured to carry Ethernet or Fibre Channel traffic. The port mode is not automatically discovered by the fabric interconnect.

Changing the port mode results in the existing port configuration being deleted and replaced by a new logical port. Any objects associated with that port configuration, such as VLANs and VSANs, are removed. There is no restriction on the number of times that the port mode can be changed for a unified port.

### Port Types

The port type defines the type of traffic carried over a unified port connection.

All of the port types listed are configurable on both the fixed and expansion module, including server ports, which are not configurable on the Cisco UCS 6100 series fabric interconnect expansion module, but are configurable on the Cisco UCS 6200 series fabric interconnect expansion module.

By default, unified ports changed to Ethernet port mode are set to the uplink Ethernet port type. Unified ports changed to Fibre Channel port mode are set to the Fibre Channel uplink port type. Fibre Channel ports cannot be unconfigured.

Changing the port type does not require a reboot.

When the port mode is set to Ethernet, you can configure the following port types:

- Server ports
- Ethernet uplink ports
- Ethernet port channel members
- FCoE ports
- Appliance ports
- Appliance port channel members

When the port mode is set to Fibre Channel, you can configure the following port types:

- Fibre Channel uplink ports

- Fibre Channel port channel members
- Fibre Channel storage ports
- FCoE Uplink ports

## Configuring the Port Mode for Fixed Module Ports



**Note** The fabric interconnect will be rebooted after you configure the port mode.

You cannot configure the port mode for ports on a Cisco UCS 6100 series fabric interconnect.

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- Step 1** Choose **Physical > Compute**.
- Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.
- Step 3** Click **Fabric Interconnects**.
- Step 4** Click the row for the fabric interconnect for which you want to set the port mode.
- Step 5** Click **Configure Fixed Module Ports**.
- Step 6** On the **Configure Fixed Module Ports** screen, do the following:
- Check the check box for the ports that you want to configure.
  - Click **Submit**.
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## Configuring the Port Mode for Expansion Module Ports



**Note** The fabric interconnect will be rebooted after you configure the port mode.

You cannot configure the port mode for ports on a 6100 series fabric interconnect.

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- Step 1** Choose **Physical > Compute**.
- Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.
- Step 3** Click **Fabric Interconnects**.
- Step 4** Click the row for the fabric interconnect for which you want to set the port mode.
- Step 5** Click **Configure Expansion Module Ports**.
- Step 6** On the **Configure Expansion Module Ports** screen, do the following:
- Check the check box for the ports that you want to configure.
  - Click **Submit**.
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## Enabling a Port

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- Step 1** Choose **Physical** > **Compute**.
- Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.
- Step 3** Click **Fabric Interconnects**.
- Step 4** Click the row for the fabric interconnect for which you want to enable a port.
- Step 5** Click **View Details**.
- Step 6** Click one of the following:
- **Ethernet Ports**
  - **Fibre Channel Ports**
- Step 7** Click the port that you want to enable.  
You can **Ctrl-Click** to choose and enable multiple ports.
- Step 8** From the **More Actions** drop-down menu, choose **Enable Port**.
- Step 9** On the **Enable Port** screen, click **Submit**.
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## Disabling a Port

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- Step 1** Choose **Physical** > **Compute**.
- Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.
- Step 3** Click **Fabric Interconnects**.
- Step 4** Click the row for the fabric interconnect for which you want to disable a port.
- Step 5** Click **View Details**.
- Step 6** Click one of the following:
- **Ethernet Ports**
  - **Fibre Channel Ports**
- Step 7** Click the port that you want to disable.  
You can **Ctrl-Click** to choose and disable multiple ports.
- Step 8** From the **More Actions** drop-down menu, choose **Disable Port**.
- Step 9** On the **Disable Port** screen, click **Submit**.
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## Configuring Ethernet Ports

### Configuring a Server Port

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- Step 1** Choose **Physical > Compute**.
  - Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.
  - Step 3** Click **Fabric Interconnects**.
  - Step 4** Click the row for the fabric interconnect for which you want to configure a server port.
  - Step 5** Click **Ethernet Ports**.
  - Step 6** Click the port that you want to configure as a server port.  
You can **Ctrl-Click** to choose and configure multiple ports.
  - Step 7** From the **More Actions** drop-down menu, choose **Configure as Server Port**.
  - Step 8** On the **Configure as Server Port** screen, click **Submit**.
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### Configuring an Uplink Port

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- Step 1** Choose **Physical > Compute**.
  - Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.
  - Step 3** Click **Fabric Interconnects**.
  - Step 4** Click the row for the fabric interconnect for which you want to configure an uplink port.
  - Step 5** Click the **Ethernet Ports**.
  - Step 6** Click the port that you want to configure as an uplink port.  
You can **Ctrl-Click** to choose and configure multiple ports.
  - Step 7** From the **More Actions** drop-down menu, choose **Configure as Uplink Port**.
  - Step 8** On the **Configure as Uplink Port** screen, click **Submit**.
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### Configuring an FCoE Uplink Port

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- Step 1** Choose **Physical > Compute**.
- Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.
- Step 3** Click **Fabric Interconnects**.
- Step 4** Click the row for the fabric interconnect for which you want to configure an FCoE uplink port.
- Step 5** Click **Ethernet Ports**.
- Step 6** Click the port that you want to configure as an FCoE uplink port.  
You can **Ctrl-Click** to choose and configure multiple ports.



- Step 7** From the **More Actions** drop-down menu, choose **Configure as Uplink FCoE**.
- Step 8** On the **Configure as FCoE Uplink Port** screen, click **Submit**.

## Configuring an FCoE Storage Port

- Step 1** Choose **Physical > Compute**.
- Step 2** On the **Compute** page, choose the pod that includes the Cisco UCS Manager account.
- Step 3** Click **Fabric Interconnects**.
- Step 4** Click the row for the fabric interconnect for which you want to configure an FCoE storage port.
- Step 5** Click **Ethernet Ports**.
- Step 6** Click the port that you want to configure as an FCoE storage port.  
You can **Ctrl-Click** to choose and configure multiple ports.
- Step 7** From the **More Actions** drop-down menu, choose **Configure as Storage FCoE**.
- Step 8** On the **Configure as FCoE Storage Port** screen, click **Submit**.

## Configuring an Appliance Port

- Step 1** Choose **Physical > Compute**.
- Step 2** On the **Compute** page, expand a pod and choose a Cisco UCS Manager account.
- Step 3** Click **Fabric Interconnects**.
- Step 4** Click the row with the fabric interconnect for which you want to configure an appliance port.
- Step 5** From the **More Actions** drop-down list, choose **View Details**.
- Step 6** Click **Ethernet Ports**.
- Step 7** Click the port that you want to configure as an appliance port.
- Step 8** From the **More Actions** drop-down list, choose **Configure as Appliance Port**.
- Step 9** On the **Configure as Appliance Port** screen, complete the following fields:

Name	Description
<b>Priority</b> drop-down list	Choose the quality of service for the port. This can be one of the following: <ul style="list-style-type: none"> <li>• <b>Best Effort</b>—Do not use this priority. It is reserved for the Basic Ethernet traffic lane.</li> <li>• <b>Platinum</b>—Use this priority for vNIC traffic only.</li> <li>• <b>Gold</b>—Use this priority for vNIC traffic only.</li> <li>• <b>Bronze</b>—Use this priority for vNIC traffic only.</li> </ul>

Name	Description
<b>Pin Group</b> drop-down list	Choose the LAN pin group that you want to use as the appliance pin target to the specified fabric and port, or fabric and port channel.
<b>Network Control Policy</b> drop-down list	Choose the network control policy associated with this port.
<b>Flow Control Policy</b> drop-down list	Choose the flow control policy associated with this port.
<b>Admin Speed</b> drop-down list	Choose the data transfer rate for the port so that it matches the destination to which the port is linked. This can be one of the following: <ul style="list-style-type: none"> <li>• <b>1 Gbps</b></li> <li>• <b>10 Gbps</b></li> <li>• <b>20 Gbps</b></li> <li>• <b>40 Gbps</b></li> </ul> <p><b>Note</b> The admin speed can be changed only for certain ports, and not all speeds are available on all systems. For more information, see the hardware installation guide for your fabric interconnect.</p>
<b>Port Mode</b> drop-down list	Choose the port mode for the appliance port: <ul style="list-style-type: none"> <li>• <b>Trunk</b>—Displays a VLANs Table that allows you to choose one or more VLANs to associate with this port.</li> <li>• <b>Access</b>—Displays the <b>Select VLAN</b> drop-down list that allows you to choose a single VLAN to associate with this port.</li> </ul>

**Step 10**

In the **VLANs** area, do the following:

- a) If you chose Trunk port mode, expand **VLANs**, click **Add** in the VLANs table, complete the following fields, and then click **Submit**:
  - **Name** drop-down list—Choose the VLAN that you want to associate with the appliance port.
  - **Set as Native VLAN** check box—Check the check box if you want this VLAN to be the native VLAN for the port.
- b) If you chose Access port mode, choose a VLAN from the **VLAN** drop-down list.

**Step 11**

(Optional) In the **Ethernet Target Endpoint** area, do the following if you want to add an endpoint:

- a) In the **Name** field, enter a name for the target endpoint.
- b) In the **MAC Address** field, enter the MAC address of the target endpoint.

**Step 12** Click **Submit**.

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## Unconfiguring an Ethernet Port

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**Step 1** Choose **Physical > Compute**.

**Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.

**Step 3** Click **Fabric Interconnects**.

**Step 4** Click the row for the fabric interconnect for which you want to unconfigure a port.

**Step 5** Click **Ethernet Ports**.

**Step 6** Click the port that you want to unconfigure

You can **Ctrl-Click** to choose and unconfigure multiple ports.

**Step 7** From the **More Actions** drop-down menu, choose **Unconfigure**.

**Step 8** On the **Unconfigure** screen, click **Submit**.

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## Configuring Fibre Channel Ports

### Configuring a Fibre Channel Storage Port

The Fibre Channel switching mode must be set to switch mode for these ports to be valid. The storage ports cannot function in end-host mode.

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**Step 1** Choose **Physical > Compute**.

**Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.

**Step 3** Click **Fabric Interconnects**.

**Step 4** Click the row for the fabric interconnect for which you want to configure a Fibre Channel storage port.

**Step 5** Click **Fibre Channel Ports**.

**Step 6** Click the port that you want to configure as a Fibre Channel storage port.

You can **Ctrl-Click** to choose and configure multiple ports.

**Step 7** From the **More Actions** drop-down menu, choose **Configure as Storage Port**.

**Step 8** On the **Configure as FC Storage Uplink Port** screen, click **Submit**.

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### Configuring a Fibre Channel Uplink Port

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**Step 1** Choose **Physical > Compute**.

**Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.

- Step 3** Click **Fabric Interconnects**.
- Step 4** Click the row for the fabric interconnect for which you want to configure a Fibre Channel uplink port.
- Step 5** Click the **Fibre Channel Ports** tab.
- Step 6** Click the port that you want to configure as a Fibre Channel uplink port.  
You can **Ctrl-Click** to choose and configure multiple ports.
- Step 7** From the **More Actions** drop-down menu, choose **Configure as Uplink Port**.
- Step 8** On the **Configure as Uplink Port** screen, click **Submit**.

## Associating a Fibre Channel Port with a VSAN

- Step 1** Choose **Physical > Compute**.
- Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.
- Step 3** Click **Fabric Interconnects**.
- Step 4** Click the row for the fabric interconnect for which you want to associate with a VSAN.
- Step 5** Click **View Details**.
- Step 6** Click **Fibre Channel Ports**.
- Step 7** Click the port that you want to associate with a VSAN.  
You can **Ctrl-Click** to choose and associate multiple ports with the same VSAN.
- Step 8** From the **More Actions** drop-down menu, choose **Associate VSAN**.
- Step 9** On the **Associate VSAN** screen, choose a VSAN from the **VSAN** drop-down list and click **Associate**.

## Configuring Cisco UCS Mini Ports

### Cisco UCS Mini Scalability Ports

The Cisco UCS 6324 Fabric Interconnect contains a scalability port as well as four unified ports. The scalability port is a 40GB QSFP+ breakout port that, with proper cabling, can support four 1G or 10G SFP+ ports. A scalability port can be used as a licensed server port for supported Cisco UCS rack servers, as an appliance port, or as an FCoE port.

In the Cisco UCS Manager GUI, the scalability port is displayed as **Scalability Port 5** below the **Ethernet Ports** node. The individual breakout ports are displayed as **Port 1** through **Port 4**.

In the Cisco UCS Manager CLI, the scalability port is not displayed, but the individual breakout ports are displayed as **Br-Eth1/5/1** through **Br-Eth1/5/4**.

### Configuring a Scalability Port as a Server Port

- Step 1** Choose **Physical > Compute**.
- Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.

- Step 3** Click **Fabric Interconnects**.
- Step 4** Click the row for the fabric interconnect for which you want to configure a server port.
- Step 5** Click **View Details**.
- Step 6** Click **Scalability Ports**.
- Step 7** Click the row in the table for the port that you want to configure as a server port.  
You can **Ctrl-Click** to choose and configure multiple ports.
- Step 8** From the **More Actions** drop-down menu, choose **Configure as Server Port**.
- Step 9** In the **Configure as Server Port** dialog box, click **Submit**.
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## Configuring a Scalability Port as an Uplink Port

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- Step 1** Choose **Physical > Compute**.
- Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.
- Step 3** Click **Fabric Interconnects**.
- Step 4** Click the row for the fabric interconnect for which you want to configure an uplink port.
- Step 5** Click **View Details**.
- Step 6** Click **Scalability Ports**.
- Step 7** Click the row in the table for the port that you want to configure as an uplink port.  
You can **Ctrl-Click** to choose and configure multiple ports.
- Step 8** From the **More Actions**, drop-down menu, choose **Configure as Uplink Port**.
- Step 9** On the **Configure as Uplink Port** screen, click **Submit**.
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## Configuring a Scalability Port as an Uplink FCoE Port

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- Step 1** Choose **Physical > Compute**.
- Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.
- Step 3** Click **Fabric Interconnects**.
- Step 4** Click the row for the fabric interconnect for which you want to configure an uplink FCoE port.
- Step 5** Click **View Details**.
- Step 6** Click **Scalability Ports**.
- Step 7** Click the row in the table for the port that you want to configure as an uplink FCoE port.  
You can **Ctrl-Click** to choose and configure multiple ports.
- Step 8** From **More Actions** drop-down menu, choose **Configure as Uplink FCoE Port**.
- Step 9** On the **Configure as Uplink FCoE Port** screen, click **Submit**.
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## Configuring a Scalability Port as a Storage FCoE Port

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- Step 1** Choose **Physical > Compute**.
  - Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.
  - Step 3** Click **Fabric Interconnects**.
  - Step 4** Click the row for the fabric interconnect for which you want to configure a storage FCoE port.
  - Step 5** Click **View Details**.
  - Step 6** Click **Scalability Ports**.
  - Step 7** Click the row in the table for the port that you want to configure as a storage FCoE port.  
You can **Ctrl-Click** to choose and configure multiple ports.
  - Step 8** From More Actions drop-down menu, choose **Configure as Storage FCoE Port**.
  - Step 9** On the **Configure as Storage FCoE Port** screen, click **Submit**.
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## Configuring a Scalability Port as an Appliance Port

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- Step 1** Choose **Physical > Compute**.
  - Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.
  - Step 3** Click **Fabric Interconnects**.
  - Step 4** Click the row for the fabric interconnect for which you want to configure an appliance port.
  - Step 5** Click **View Details**.
  - Step 6** Click **Scalability Ports**.
  - Step 7** Click the row in the table for the port that you want to configure as an appliance port.  
You can **Ctrl-Click** to choose and configure multiple ports.
  - Step 8** From **More Actions** drop-down menu, choose **Configure as Appliance Port**.
  - Step 9** On the **Configure as Appliance Port** screen, click **Submit**.
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## Configuring a Fibre Channel Port as an FCoE Uplink Port

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- Step 1** Choose **Physical > Compute**.
- Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.
- Step 3** Click **Fabric Interconnects**.
- Step 4** Click the row for the fabric interconnect for which you want to configure an FC uplink port.
- Step 5** Click **View Details**.
- Step 6** Click **Fibre Channel Ports**.
- Step 7** Click the row in the table for the port that you want to configure as an FC uplink port.  
You can **Ctrl-Click** to choose and configure multiple ports.

- Step 8** From the **More Actions** drop-down menu, choose **Configure as Uplink FCoE**.
- Step 9** On the **Configure as FCoE Uplink Port** screen, click **Submit**.

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## Configuring a Fibre Channel Port as an FCoE Storage Port

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- Step 1** Choose **Physical > Compute**.
- Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.
- Step 3** Click **Fabric Interconnects**.
- Step 4** Click the row in the table for the fabric interconnect for which you want to configure an FC storage port.
- Step 5** Click **View Details**.
- Step 6** Click **Fibre Channel Ports**.
- Step 7** Click the row in the table for the port that you want to configure as an FC storage port.
- You can **Ctrl-Click** to choose and configure multiple ports.
- Step 8** From the **More Actions** drop-down menu, choose **Configure as Storage FCoE**.
- Step 9** On the **Configure as FCoE Storage Port** screen, click **Submit**.

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# Configuring Port Channels

## LAN Port Channel

A LAN port channel allows you to group several physical uplink Ethernet ports (link aggregation) to create one logical Ethernet link to provide fault-tolerance and high-speed connectivity. You can add up to eight uplink Ethernet ports to a port channel.



**Note** Cisco UCS uses Link Aggregation Control Protocol (LACP), not Port Aggregation Protocol (PAgP), to group the uplink Ethernet ports into a port channel. If the ports on the upstream switch are not configured for LACP, the fabric interconnects treat all ports in an uplink Ethernet port channel as individual ports and forward the packets.

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## Creating a LAN Port Channel

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- Step 1** Choose **Physical > Compute**.
- Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.
- Step 3** Click **LAN Port Channels**.
- Step 4** Click **Add**.

- Step 5** On the **LAN Port Channel** screen, choose **LAN Port Channel** from the **Port Channel Type** drop-down list and click **Next**.
- Step 6** On the **LAN Port Channel - Details** page, do the following:
- In the **ID** field, enter an identifier for the port channel.  
This integer must be between 1 and 256. This ID cannot be changed after the port channel has been saved.
  - In the **Name** field, enter a unique name for the port channel.
  - From the **Fabric ID** drop-down list, choose the fabric interconnect that you want to associate with the port channel.
  - In the **Ports** table, check the check boxes for the ports that you want to include in the port channel.
  - Click **Next**.
- Step 7** On the **Summary** page, review the details of the port channel that you have created and click **Submit** to create the port channel.
- If you want to change some of the details, click **Back** and return to that page.
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## SAN Port Channel

A SAN port channel allows you to group several physical Fibre Channel ports (link aggregation) to create one logical Fibre Channel link to provide fault-tolerance and high-speed connectivity. You can create up to four SAN port channels in each Cisco UCS domain. Each Fibre Channel port channel can include a maximum of 16 uplink Fibre Channel ports.

### Creating a SAN Port Channel

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- Step 1** Choose **Physical > Compute**.
- Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.
- Step 3** Click the **SAN Port Channels**.
- Step 4** Click **Add**.
- Step 5** On the **SAN Port Channel** screen, choose **SAN Port Channel** from the **Port Channel Type** drop-down list and click **Next**.
- Step 6** On the **SAN Port Channel - Details** page, do the following:
- In the **ID** field, enter an identifier for the port channel.  
This integer must be between 1 and 256. This ID cannot be changed after the port channel has been saved.
  - In the **Name** field, enter a unique name for the port channel.
  - From the **Fabric ID** drop-down list, choose the fabric interconnect that you want to associate with the port channel.
  - From the **Admin Speed** drop-down list, choose the data transfer rate for traffic on the port channel.
  - In the **Ports** table, check the check boxes for the ports that you want to include in the port channel.
  - Click **Next**.
- Step 7** On the **Summary** page, review the details of the port channel that you have created and click **Submit** to create the port channel.



If you want to change some of the details, click **Back** and return to that page.

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## Appliance Port Channel

An appliance port channel allows you to group several physical appliance ports to create one logical Ethernet storage link for providing fault-tolerance and high-speed connectivity. You can add up to eight appliance ports to a port channel.

### Creating an Appliance Port Channel

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- Step 1** Choose **Physical > Compute**.
- Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.
- Step 3** Click the **LAN Port Channels**.
- Step 4** Click **Add**.
- Step 5** On the **LAN Port Channel** screen, choose **Appliance Port Channel** from the **Port Channel Type** drop-down list and click **Next**.
- Step 6** On the **Appliance Port Channel - Details** page, do the following:
- In the **ID** field, enter an identifier for the port channel.  
This integer must be between 1 and 256. This ID cannot be changed after the port channel has been saved.
  - In the **Name** field, enter a unique name for the port channel.
  - From the **Fabric ID** drop-down list, choose the fabric interconnect that you want to associate with the port channel.
  - From the **Priority** drop-down list, choose the QoS system class that you want to assign to this port channel.
  - From the **Protocol** drop-down list, choose one of the following protocols to assign to this port channel:
    - **Static**
    - **Lacp**
  - From the **Pin Group** drop-down list, choose the LAN pin group associated with this port channel.
  - From the **Network Control Policy** drop-down list, choose the network control policy associated with this port channel.
  - From the **Flow Control Policy** drop-down list, choose the flow control policy associated with this port channel.
  - From the **Port Mode** drop-down list, choose one of the following modes for the port channel:
    - **trunk**
    - **access**
  - If you choose the Trunk port mode, in the **VLANs** table, check the check boxes for the VLANs that you want to include in the port channel.
  - From the **Native VLAN** drop-down list, choose the native VLAN for this port channel.
  - If you want to add an endpoint, check the **Ethernet Target Endpoint** check box and enter the name and MAC address of the endpoint.
  - In the **Ports** table, check the check boxes for the ports that you want to include in the port channel.
  - Click **Next**.

**Step 7** On the **Summary** page, review the details of the port channel that you have created and click **Submit** to create the port channel.

If you want to change some of the details, click **Back** and return to that page.

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## FCoE Port Channel

A Fibre Channel over Ethernet (FCoE) port channel allows you to group several physical FCoE ports to create one logical FCoE port channel. At a physical level, the FCoE port channel carries FCoE traffic over an Ethernet port channel. An FCoE port channel with a set of members is essentially an Ethernet port channel with the same members. This Ethernet port channel is used as a physical transport for FCoE traffic.

For each FCoE port channel, Cisco UCS creates a Virtual Fibre Channel (VFC) internally and binds it to an Ethernet port channel. FCoE traffic received from the hosts is sent over the VFC the same way as the FCoE traffic is sent over Fibre Channel uplinks.

## Creating an FCoE Port Channel

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**Step 1** Choose **Physical > Compute**.

**Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.

**Step 3** Click the **SAN Port Channels**.

**Step 4** Click **Add**.

**Step 5** On the **SAN Port Channel** screen, choose **FCoE Port Channel** from the **Port Channel Type** drop-down list and click **Next**.

**Step 6** On the **FCoE Port Channel - Details** page, do the following:

a) In the **ID** field, enter an identifier for the port channel.

This integer must be between 1 and 256. This ID cannot be changed after the port channel has been saved.

b) In the **Name** field, enter a unique name for the port channel.

c) From the **Fabric ID** drop-down list, choose the fabric interconnect that you want to associate with the port channel.

d) From the **VSAN** drop-down list, choose the VSAN that you want to associate with the port channel.

e) In the **Ports** table, check the check boxes for the ports that you want to include in the port channel.

f) Click **Next**.

**Step 7** On the **Summary** page, review the details of the port channel that you have just created and click **Submit** to create the port channel.

If you want to change some of the details, click **Back** and return to that page.

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## Enabling a Port Channel

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**Step 1** Choose **Physical > Compute**.

**Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.

- Step 3** Click one of the following:
- **LAN Port Channels** to enable a LAN port channel or an appliance port channel.
  - **SAN Port Channels** to enable a SAN port channel or an FCoE port channel.
- Step 4** Click the row for the port channel that you want to enable.
- Step 5** From the **More Actions** drop-down menu, choose **Enable Port Channel**.
- Step 6** On the **Enable Port Channel** screen, click **Enable**.
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## Disabling a Port Channel

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- Step 1** Choose **Physical > Compute**.
- Step 2** On **Compute** page, choose the pod that includes the Cisco UCS Manager account.
- Step 3** Click one of the following:
- **LAN Port Channels** to disable a LAN port channel or an appliance port channel.
  - **SAN Port Channels** to disable a SAN port channel or an FCoE port channel.
- Step 4** Click the row for the port channel that you want to disable.
- Step 5** From the **More Actions** drop-down menu, choose **Disable Port Channel**.
- Step 6** on the **Disable Port Channel** screen, click **Disable**.
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