



# LAN Uplinks Manager

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## LAN Uplinks Manager

The LAN Uplinks Manager provides a single interface where you can configure the connections between Cisco UCS and the LAN. You can use the LAN Uplinks Manager to create and configure the following:

- Ethernet switching mode
- Uplink Ethernet ports
- Port channels
- LAN pin groups
- Named VLANs
- Server ports
- QoS system classes
- You can view Ethernet related events, faults, and FSM status using the tab available at the top in LAN Uplinks Manager.

Some of the configuration that you do in the LAN Uplinks Manager can also be done in nodes on other tabs, such as the **Equipment** tab or the **LAN** tab.

# Launching the LAN Uplinks Manager

## Procedure

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- Step 1** In the **Navigation** pane, click **LAN**.
  - Step 2** On the **LAN** tab, click the **LAN** node.
  - Step 3** In the **Work** pane, click the **LAN Uplinks Manager** link on the **LAN Uplinks** tab.
- The LAN Uplinks Manager opens in a separate window.
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# Changing the Ethernet Switching Mode with the LAN Uplinks Manager



## Warning

When you change the Ethernet switching mode, Cisco UCS Manager logs you out and restarts the fabric interconnect. For a cluster configuration, Cisco UCS Manager restarts both fabric interconnects. The second fabric interconnect may take several minutes to complete the change in Ethernet switching mode and become system ready. The system retains the configuration.

While the fabric interconnects are booting, all blade servers lose all LAN and SAN connectivity, causing a complete outage of all services on the blades. This action may cause the operating system to crash.

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## Procedure

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- Step 1** In the LAN Uplinks Manager, click **LAN Uplinks**.
  - Step 2** In the **Uplink Mode** area, click one of the following buttons:
    - Set **Ethernet Switching Mode**
    - Set **Ethernet End-Host Switching Mode**

The button for the current switching mode is dimmed.
  - Step 3** In the dialog box, click **Yes**.
- Cisco UCS Manager restarts the fabric interconnect, logs you out, and disconnects the Cisco UCS Manager GUI.
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# Configuring a Port with the LAN Uplinks Manager

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

## Procedure

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- Step 1** In the LAN Uplinks Manager, click the **LAN Uplinks** tab.
- Step 2** In the **Ports** area, click the down arrows to expand the **Unconfigured Ports** section.
- Step 3** Expand **Fabric Interconnects** > *Fabric\_Interconnect\_Name* .
- Step 4** Expand the node where you want to configure ports.
- If no ports are listed below the node that you expanded, all ports in that module have already been configured.
- Step 5** Right-click the port that you want to configure and choose one of the following:
- **Configure as Server Port**
  - **Configure as Uplink Port**
- Step 6** If a confirmation dialog box displays, click **Yes**.
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## Configuring Server Ports

### Enabling a Server Port with the LAN Uplinks Manager

This procedure assumes that the port has been configured as a server port, but is disabled.

## Procedure

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- Step 1** In the LAN Uplinks Manager, click the **LAN Uplinks** tab.
- Step 2** In the **Ports** area, click the down arrows to expand the **Server Ports** section.
- Step 3** Expand **Fabric Interconnects** > *Fabric\_Interconnect\_Name* .
- Step 4** Right-click the port that you want to enable and choose **Enable**.
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## Disabling a Server Port with the LAN Uplinks Manager

### Procedure

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- Step 1** In the LAN Uplinks Manager, click the **LAN Uplinks** tab.
  - Step 2** In the **Ports** area, click the down arrows to expand the **Server Ports** section.
  - Step 3** Expand **Fabric Interconnects** > *Fabric\_Interconnect\_Name* .
  - Step 4** Right-click the port that you want to disable and choose **Disable**.
  - Step 5** If a confirmation dialog box displays, click **Yes**.
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## Configuring Uplink Ethernet Ports

### Enabling an Uplink Ethernet Port with the LAN Uplinks Manager

This procedure assumes that the port has been configured as an uplink Ethernet port, but is disabled.

### Procedure

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- Step 1** In the LAN Uplinks Manager, click the **LAN Uplinks** tab.
  - Step 2** In the **Port Channels and Uplinks** area, expand **Interfaces** > **Fabric Interconnects** > *Fabric\_Interconnect\_Name* .
  - Step 3** Right-click the port that you want to enable and choose **Enable Interface**.
  - Step 4** If a confirmation dialog box displays, click **Yes**.
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### Disabling an Uplink Ethernet Port with the LAN Uplinks Manager

### Procedure

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- Step 1** In the LAN Uplinks Manager, click the **LAN Uplinks** tab.
  - Step 2** In the **Port Channels and Uplinks** area, expand **Interfaces** > **Fabric Interconnects** > *Fabric\_Interconnect\_Name* .
  - Step 3** Right-click the port that you want to disable and choose **Disable Interfaces**.  
You can select multiple ports if you want to disable more than one uplink Ethernet port.
  - Step 4** If a confirmation dialog box displays, click **Yes**.
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The disabled port is removed from the list of enabled interfaces and returned to the **Unconfigured Ports** list.

# Configuring Uplink Ethernet Port Channels

## Creating a Port Channel with the LAN Uplinks Manager

### Procedure

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- Step 1** In the LAN Uplinks Manager, click the **LAN Uplinks** tab.
- Step 2** In the **Port Channels and Uplinks** area, click **Create Port Channel**.
- Step 3** From the pop-up menu, select one of the following fabric interconnects where you want to create the port channel:
- **Fabric Interconnect A**
  - **Fabric Interconnect B**
- Step 4** In the **Set Port Channel Name** panel, specify the ID and name, then click **Next**.
- Step 5** In the **Add Ports** panel, specify the ports you want to add.
- Note** Cisco UCS Manager warns you if you select a port that has been configured as a server port. You can reconfigure that port as an uplink Ethernet port, and include it in the port channel by clicking **Yes** in the dialog box.
- Step 6** Click **Finish**.
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## Enabling a Port Channel with the LAN Uplinks Manager

### Procedure

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- Step 1** In the LAN Uplinks Manager, click the **LAN Uplinks** tab.
- Step 2** In the **Port Channels and Uplinks** area, expand **Port Channels > Fabric Interconnects > Fabric\_Interconnect\_Name**.
- Step 3** Right-click the port channel that you want to enable and choose **Enable Port Channel**.
- Step 4** If a confirmation dialog box displays, click **Yes**.
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## Disabling a Port Channel with the LAN Uplinks Manager

### Procedure

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- Step 1** In the LAN Uplinks Manager, click the **LAN Uplinks** tab.

- Step 2** In the **Port Channels and Uplinks** area, expand **Port Channels > Fabric Interconnects > Fabric\_Interconnect\_Name**.
- Step 3** Right-click the port channel that you want to disable and choose **Disable Port Channel**.
- Step 4** If a confirmation dialog box displays, click **Yes**.
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## Adding Ports to a Port Channel with the LAN Uplinks Manager

### Procedure

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- Step 1** In the LAN Uplinks Manager, click the **LAN Uplinks** tab.
- Step 2** In the **Port Channels and Uplinks** area, expand **Port Channels > Fabric Interconnects > Fabric\_Interconnect\_Name**.
- Step 3** Right-click the port channel to which you want to add ports and choose **Add Ports**.
- Step 4** In the **Add Ports** dialog box, specify the ports that you want to add.
- Note** Cisco UCS Manager warns you if you select a port that has been configured as a server port. You can click **Yes** in the dialog box to reconfigure that port as an uplink Ethernet port and include it in the port channel.
- Step 5** Click **OK**.
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## Removing Ports from a Port Channel with the LAN Uplinks Manager

### Procedure

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- Step 1** In the LAN Uplinks Manager, click the **LAN Uplinks** tab.
- Step 2** In the **Port Channels and Uplinks** area, expand **Port Channels > Fabric Interconnects > Fabric\_Interconnect\_Name**.
- Step 3** Expand the port channel from which you want to remove ports.
- Step 4** Right-click the port that you want to remove from the port channel and choose **Delete**.
- Step 5** If a confirmation dialog box displays, click **Yes**.
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## Deleting a Port Channel with the LAN Uplinks Manager

### Procedure

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- Step 1** In the LAN Uplinks Manager, click the **LAN Uplinks** tab.

- Step 2** In the **Port Channels and Uplinks** area, expand **Port Channels > Fabric Interconnects > Fabric\_Interconnect\_Name**.
- Step 3** Right-click the port channel you want to delete and choose **Delete**.
- Step 4** If a confirmation dialog box displays, click **Yes**.
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## Configuring LAN Pin Groups

### Creating a Pin Group with the LAN Uplinks Manager

In a system with two fabric interconnects, you can associate the pin group with only one fabric interconnect or with both fabric interconnects.

#### Before you begin

Configure the ports and port channels with which you want to configure the pin group. You can only include ports and port channels configured as uplink ports in a LAN pin group.

#### Procedure

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- Step 1** In the LAN Uplinks Manager, click the **LAN Uplinks** tab.
- Step 2** In the **Port Channels and Uplinks** area, click **Create Pin Group**.
- Step 3** In the **Create LAN Pin Group** dialog box, enter a unique name and description for the pin group.
- Step 4** To pin traffic for fabric interconnect A, do the following in the **Targets** area:
- Check the **Fabric Interconnect A** checkbox.
  - Click the drop-down arrow on the **Interface** field and navigate through the tree browser to select the port or port channel you want to associate with the pin group.
- Step 5** To pin traffic for fabric interconnect B, do the following in the **Targets** area:
- Check the **Fabric Interconnect B** checkbox.
  - Click the drop-down arrow on the **Interface** field and navigate through the tree browser to select the port or port channel you want to associate with the pin group.
- Step 6** Click **OK**.
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#### What to do next

Include the pin group in a vNIC template.

## Deleting a Port Channel with the LAN Uplinks Manager

### Procedure

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- Step 1** In the LAN Uplinks Manager, click the **LAN Uplinks** tab.
- Step 2** In the **Port Channels and Uplinks** area, expand **Port Channels > Fabric Interconnects > Fabric\_Interconnect\_Name**.
- Step 3** Right-click the port channel you want to delete and choose **Delete**.
- Step 4** If a confirmation dialog box displays, click **Yes**.
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## Configuring Named VLANs

### Creating a Named VLAN with the LAN Uplinks Manager

In a Cisco UCS domain with two switches, you can create a named VLAN that is accessible to both switches or to only one switch.

**Table 1: Cisco UCS and fabric interconnect reserved VLANs**

Cisco UCS 6200 Series Fabric Interconnects	Cisco UCS 6400 Series Fabric Interconnects	Cisco UCS 6454 Series Fabric Interconnects	Cisco UCS 6500 Series Fabric Interconnects
VLANs 4030 to 4047	VLANs 3915 to 4042 (reserved for Cisco NX-OS)	VLANs 3915 to 4042 (reserved for Cisco NX-OS)	VLANs 1002 to 1005 (reserved for Cisco NX-OS)
	VLANs 4043 to 4047 (reserved for Cisco UCS Manager)	VLANs 4043 to 4047 (reserved for Cisco UCS Manager)	
	VLANs 4094 to 4098 (reserved for Cisco NX-OS)	VLANs 4094 to 4098 (reserved for Cisco NX-OS)	





**Important** VLANs with IDs from 4043 to 4047 and from 4094 to 4095 are reserved. You cannot create VLANs with IDs from this range. Until Cisco UCS Manager Release 4.0(1d), VLAN ID 4093 was in the list of reserved VLANs. VLAN 4093 has been removed from the list of reserved VLANs and is available for configuration.

For Cisco UCS 6400 and 6500 FI Series, VLAN IDs from 1002 to 1005 are reserved for VLAN Trunking Protocol (VTP).

The VLAN IDs you specify must also be supported on the switch that you are using. For example, on Cisco Nexus 5000 Series switches, the VLAN ID range from 3968 to 4029 is reserved. Before you specify the VLAN IDs in Cisco UCS Manager, make sure that the same VLAN IDs are available on your switch.

VLANs in the LAN cloud and FCoE VLANs in the SAN cloud must have different IDs. Using the same ID for a VLAN and an FCoE VLAN in a VSAN results in a critical fault and traffic disruption for all vNICs and uplink ports using that VLAN. Ethernet traffic is dropped on any VLAN which has an ID that overlaps with an FCoE VLAN ID.

### Procedure

- Step 1** In the LAN Uplinks Manager, click the **VLANs** tab.
- Step 2** On the icon bar to the right of the table, click +.
- If the + icon is disabled, click an entry in the table to enable it.
- Step 3** In the **Create VLANs** dialog box, specify the required fields and then click **OK**.
- Private VLANs are not supported for Cisco UCS Mini.
- Step 4** Click **OK**.
- Cisco UCS Manager adds the VLAN to one of the following **VLANs** nodes:
- The **LAN Cloud > VLANs** node for a VLAN accessible to both fabric interconnects.
  - The **Fabric\_Interconnect\_Name > VLANs** node for a VLAN accessible to only one fabric interconnect.

## Deleting a Named VLAN with the LAN Uplinks Manager

If Cisco UCS Manager includes a named VLAN with the same VLAN ID as the one you delete, the VLAN is not removed from the fabric interconnect configuration until all named VLANs with that ID are deleted.

### Procedure

- Step 1** In the LAN Uplinks Manager, click the **VLANs** tab.
- Step 2** Click one of the following subtabs, based on the VLAN that you want to delete:

Subtab	Description
All	Displays all VLANs in the Cisco UCS domain.

Subtab	Description
Dual Mode	Displays the VLANs that are accessible to both fabric interconnects.
Fabric A	Displays the VLANs that are accessible to only fabric interconnect A.
Fabric B	Displays the VLANs that are accessible to only fabric interconnect B.

- Step 3** In the table, click the VLAN you want to delete.  
You can use the **Shift** key or **Ctrl** key to select multiple entries.
- Step 4** Right-click the highlighted VLAN or VLANs and select **Delete**.
- Step 5** If a confirmation dialog box displays, click **Yes**.

## Configuring QoS System Classes with the LAN Uplinks Manager

The type of adapter in a server might limit the maximum MTU supported. For example, network MTU above the maximums might cause the packet to be dropped for the following adapters:

- The Cisco UCS M71KR CNA adapter, which supports a maximum MTU of 9216.
- The Cisco UCS 82598KR-CI adapter, which supports a maximum MTU of 14000.

### Procedure

- Step 1** In the LAN Uplinks Manager, click the **QoS** tab.
- Step 2** Update the following properties for the system class you want to configure, to meet the traffic management needs of the system:

**Note** Some properties may not be configurable for all system classes.

Name	Description
Enabled check box	<p>If checked, the associated QoS class is configured on the fabric interconnect and can be assigned to a QoS policy.</p> <p>If unchecked, the class is not configured on the fabric interconnect and any QoS policies associated with this class default to <b>Best Effort</b> or, if a system class is configured with a Cos of 0, to the Cos 0 system class.</p> <p><b>Note</b> This field is always checked for <b>Best Effort</b> and <b>Fibre Channel</b>.</p>

Name	Description
CoS field	<p>The class of service. You can enter an integer value between 0 and 6, with 0 being the lowest priority and 6 being the highest priority. We recommend that you do not set the value to 0, unless you want that system class to be the default system class for traffic if the QoS policy is deleted or the assigned system class is disabled.</p> <p><b>Note</b> This field is set to 7 for internal traffic and to <b>any</b> for <b>Best Effort</b>. Both of these values are reserved and cannot be assigned to any other priority.</p>
Packet Drop check box	<p>If checked, packet drop is allowed for this class. If unchecked, packets cannot be dropped during transmission. MTU configuration for drop classes is ignored.</p> <p>This field is always unchecked for the <b>Fibre Channel</b> class, which never allows dropped packets, and always checked for <b>Best Effort</b>, which always allows dropped packets.</p> <p><b>Note</b> When you save changes to the Packet Drop, the following warning message displays:</p> <p>You are making changes to the QOS system class, which may cause momentary disruption to traffic forwarding. Are you sure you want to apply the changes?</p>
Weight drop-down list	<p>This can be one of the following:</p> <ul style="list-style-type: none"> <li>• An integer between 1 and 10. If you enter an integer, Cisco UCS determines the percentage of network bandwidth assigned to the priority level as described in the <b>Weight (%)</b> field.</li> <li>• <b>best-effort</b>.</li> <li>• <b>none</b>.</li> </ul>
Weight (%) field	<p>To determine the bandwidth allocated to a channel, Cisco UCS:</p> <ol style="list-style-type: none"> <li>a. Adds the weights for all the channels</li> <li>b. Divides the channel weight by the sum of all weights to get a percentage</li> <li>c. Allocates that percentage of the bandwidth to the channel</li> </ol>

Name	Description
MTU drop-down list	<p>The maximum transmission unit for the channel. This can be one of the following:</p> <ul style="list-style-type: none"> <li>• An integer between 1500 and 9216. This value corresponds to the maximum packet size.</li> </ul> <p><b>Note</b> When you save changes to the MTU, the following warning message displays:</p> <p>You are making changes to the QOS system class, which may cause momentary disruption to traffic forwarding. Are you sure you want to apply the changes?</p> <ul style="list-style-type: none"> <li>• <b>fc</b>—A predefined packet size of 2240.</li> <li>• <b>normal</b>—A predefined packet size of 1500.</li> </ul> <p><b>Note</b> This field is always set to <b>fc</b> for <b>Fibre Channel</b>.</p> <p><b>Note</b> Under the network QoS policy, the MTU is used only for buffer carving when no-drop classes are configured. No additional MTU adjustments are required under the network QoS policy to support jumbo MTU.</p>
<b>Multicast Optimized</b> check box	<p>If checked, the class is optimized to send packets to multiple destinations simultaneously.</p> <p><b>Note</b> This option is not applicable to the <b>Fibre Channel</b>.</p> <p><b>Note</b> Cisco UCS 6400 Series and Cisco UCS 6500 Series Fabric InterconnectFabric Interconnects do not support Multicast Optimized.</p>

**Step 3** Do one of the following:

- Click **OK** to save your changes and exit from the LAN Uplinks Manager.
- Click **Apply** to save your changes without exiting from the LAN Uplinks Manager.