Using the LAN Uplinks Manager

This chapter includes the following sections:

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

Some of the configuration that you can 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

Step 1 In the **Navigation** pane, click the **LAN** tab.

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.

Changing the Ethernet Switching Mode with the LAN Uplinks Manager

Important 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 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.

Procedure

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

Step 2 In the **Uplink Mode** area, click one of the following buttons:

- **Set Ethernet Switching Mode**
- **Set Ethernet End-Host 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 Cisco UCS Manager GUI.

Configuring a Port with the LAN Uplinks Manager

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

Procedure

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 one of the following:

- **Fixed Module**—To configure a port in the fixed module as a server port or an uplink Ethernet port.
- **Expansion Module** ***Number*** —To enable a port in an expansion module as an uplink Ethernet port. You cannot configure ports in expansion modules as server 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 the Cisco UCS Manager GUI displays a confirmation dialog box, click **Yes**.

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

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**.

Disabling a Server Port with the LAN Uplinks Manager

Procedure

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 the Cisco UCS Manager GUI displays a confirmation dialog box, click **Yes**.

Unconfiguring a Server Port with the LAN Uplinks Manager

Procedure

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 unconfigure and choose **Unconfigure**.
Step 5 If the Cisco UCS Manager GUI displays a confirmation dialog box, click **Yes**.

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

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 the Cisco UCS Manager GUI displays a confirmation dialog box, click **Yes**.

Disabling an Uplink Ethernet Port with the LAN Uplinks Manager

Procedure

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 the Cisco UCS Manager GUI displays a confirmation dialog box, click **Yes**.

The disabled port is removed from the list of enabled interfaces and returned to the **Unconfigured Ports** list.

Unconfiguring an Uplink Ethernet Port with the LAN Uplinks Manager

Procedure

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 Click the port that you want to unconfigure.
You can select multiple ports if you want to unconfigure more than one uplink Ethernet port.

Step 4 Click **Disable Interface**.

Step 5 If the Cisco UCS Manager GUI displays a confirmation dialog box, click **Yes**.

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

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** page of the **Create Port Channel** wizard, do the following:

a) Complete the following fields:

Name	Description
ID field	The identifier for the port channel. Enter an integer between 1 and 256. This ID cannot be changed after the port channel has been saved.
Name field	A user-defined name for the port channel. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object has been saved.

b) Click **Next**.

Step 5 In the **Add Ports** page of the **Create Port Channel** wizard, do the following:

a) In the **Ports** table, choose one or more ports to include in the port channel.

b) Click the >> button to add the ports to the **Ports in the port channel** table.
You can use the << button to remove ports from the port channel.

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 6 Click **Finish**.

Enabling a Port Channel with the LAN Uplinks Manager

Procedure

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 the Cisco UCS Manager GUI displays a confirmation dialog box, click **Yes**.

Disabling a Port Channel with the LAN Uplinks Manager

Procedure

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 the Cisco UCS Manager GUI displays a confirmation dialog box, click **Yes**.

Adding Ports to a Port Channel with the LAN Uplinks Manager

Procedure

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, do the following:

a) In the **Ports** table, choose one or more ports to include in the port channel.

b) Click the **>>** button to add the ports to the **Ports in the port channel** table.
You can use the **<<** button to remove ports from the port channel.

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**.

Removing Ports from a Port Channel with the LAN Uplinks Manager

Procedure

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 you want to remove from the port channel and choose **Delete**.
Step 5 If the Cisco UCS Manager GUI displays a confirmation dialog box, click **Yes**.

Deleting a Port Channel with the LAN Uplinks Manager

Procedure

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 the Cisco UCS Manager GUI displays a confirmation dialog box, click **Yes**.

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

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:

a) Check the **Fabric Interconnect A** check box.

b) Click the drop-down arrow on the **Interface** field and navigate through the tree-style 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:

a) Check the **Fabric Interconnect B** check box.

b) Click the drop-down arrow on the **Interface** field and navigate through the tree-style browser to select the port or port channel you want to associate with the pin group.

Step 6 Click **OK**.

What to Do Next

Include the pin group in a vNIC template.

Deleting a Pin Group with the LAN Uplinks Manager

Procedure

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

Step 2 In the **Pin Groups** area, right-click the pin group you want to delete and choose **Delete**.

Step 3 If the Cisco UCS Manager GUI displays a confirmation dialog box, click **Yes**.

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.

Important You cannot create VLANs with IDs from 3968 to 4047. This range of VLAN IDs is reserved.

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, complete the following fields:

Name	Description
VLAN Name/Prefix field	For a single VLAN, this is the VLAN name. For a range of VLANs, this is the prefix that the system uses for each VLAN name. The VLAN name is case sensitive. This name can be between 1 and 32 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object has been saved.
Configuration options	You can choose one of the following: • **Common/Global**—The VLANs apply to both fabrics and use the same configuration parameters in both cases • **Fabric A**—The VLANs only apply to fabric A. • **Fabric B**—The VLAN only apply to fabric B. • **Both Fabrics Configured Differently**—The VLANs apply to both fabrics but you can specify different VLAN IDs for each fabric. For upstream disjoint L2 networks, we recommend that you choose **Common/Global** to create VLANs that apply to both fabrics.

Name	Description
VLAN IDs field	To create one VLAN, enter a single numeric ID. To create multiple VLANs, enter individual IDs or ranges of IDs separated by commas. A VLAN ID can: • Be between 1 and 3967 • Be between 4048 and 4093 • Overlap with other VLAN IDs already defined on the system For example, to create six VLANs with the IDs 4, 22, 40, 41, 42, and 43, you would enter 4, 22, 40-43. **Important** You cannot create VLANs with IDs from 3968 to 4047. This range of VLAN IDs is reserved. 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.
Sharing Type field	Whether this VLAN is subdivided into private or secondary VLANs. This can be one of the following: • **None**—This VLAN does not have any secondary or private VLANs. • **Primary**—This VLAN can have one or more secondary VLANs, as shown in the **Secondary VLANs** area. • **Isolated**—This is a private VLAN. The primary VLAN with which it is associated is shown in the **Primary VLAN** drop-down list.
Primary VLAN drop-down list	If the **Sharing Type** field is set to **Isolated**, this is the primary VLAN associated with this private VLAN.
Check Overlap button	Click this button to determine whether the VLAN ID overlaps with any other IDs on the system.

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, depending upon what type of VLAN you want to delete:

Subtab	Description
All	Displays all VLANs in the Cisco UCS domain.
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 the Cisco UCS Manager GUI displays a confirmation dialog box, click **Yes**.

Configuring QoS System Classes with the LAN Uplinks Manager

The type of adapter in a server may limit the maximum MTU supported. For example, network MTU above the maximums may 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	If checked, the associated QoS class is configured on the fabric interconnect and can be assigned to a QoS policy. If unchecked, the class is not configured on the fabric interconnect and any QoS policies associated with this class default to **Best Effort** or, if a system class is configured with a Cos of 0, to the Cos 0 system class. **Note** This field is always checked for **Best Effort** and **Fibre Channel**.
CoS field	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. **Note** This field is set to 7 for internal traffic and to **any** for **Best Effort**. Both of these values are reserved and cannot be assigned to any other priority.
Packet Drop check box	If checked, packet drop is allowed for this class. If unchecked, packets cannot be dropped during transmission. This field is always unchecked for the **Fibre Channel** class, which never allows dropped packets, and always checked for **Best Effort**, which always allows dropped packets.
Weight drop-down list	This can be one of the following: • 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 **Weight (%)** field. • **best-effort**. • **none**.
Weight (%) field	To determine the bandwidth allocated to a channel, Cisco UCS: **1** Adds the weights for all the channels **2** Divides the channel weight by the sum of all weights to get a percentage **3** Allocates that percentage of the bandwidth to the channel

Name	Description
MTU drop-down list	The maximum transmission unit for the channel. This can be one of the following: • An integer between 1500 and 9216. This value corresponds to the maximum packet size. • **fc**—A predefined packet size of 2240. • **normal**—A predefined packet size of 1500. **Note** This field is always set to **fc** for **Fibre Channel**.
Multicast Optimized check box	If checked, the class is optimized to send packets to multiple destinations simultaneously. **Note** This option is not applicable to the **Fibre Channel**.

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.