



## Configuring Ports

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## Server and Uplink Ports on the Fabric Interconnect

Each 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 instance 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.

You need to create LAN pin groups and SAN pin groups to pin traffic from servers to an uplink port.

Each fabric interconnect can include the following types of ports:

### 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:

- Server
- 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 a 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.

## Server Ports

### Configuring a Server Port

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

#### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope eth-server</b>	Enters Ethernet server mode.
<b>Step 2</b>	UCS-A /eth-server # <b>scope fabric {a   b}</b>	Enters Ethernet server fabric mode for the specified fabric.
<b>Step 3</b>	UCS-A /eth-server/fabric # <b>create interface slot-num port-num</b>	Creates an interface for the specified Ethernet server port.
<b>Step 4</b>	UCS-A /eth-server/fabric # <b>commit-buffer</b>	Commits the transaction to the system configuration.

The following example creates an interface for Ethernet server port 12 on slot 1 of fabric B and commits the transaction:

```
UCS-A# scope eth-server
UCS-A /eth-server # scope fabric b
UCS-A /eth-server/fabric # create interface 1 12
UCS-A /eth-server/fabric* # commit-buffer
UCS-A /eth-server/fabric #
```

## Unconfiguring a Server Port

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope eth-server</b>	Enters Ethernet server mode.
<b>Step 2</b>	UCS-A /eth-server # <b>scope fabric {a   b}</b>	Enters Ethernet server fabric mode for the specified fabric.
<b>Step 3</b>	UCS-A /eth-server/fabric # <b>delete interface slot-num port-num</b>	Deletes the interface for the specified Ethernet server port.
<b>Step 4</b>	UCS-A /eth-server/fabric # <b>commit-buffer</b>	Commits the transaction to the system configuration.

The following example unconfigures Ethernet server port 12 on slot 1 of fabric B and commits the transaction:

```
UCS-A# scope eth-server
UCS-A /eth-server # scope fabric b
UCS-A /eth-server/fabric # delete interface 1 12
UCS-A /eth-server/fabric* # commit-buffer
UCS-A /eth-server/fabric #
```

## Uplink Ethernet Ports

### Configuring an Uplink Ethernet Port

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

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope eth-uplink</b>	Enters Ethernet uplink mode.
<b>Step 2</b>	UCS-A /eth-uplink # <b>scope fabric {a   b}</b>	Enters Ethernet uplink fabric mode for the specified fabric.

	Command or Action	Purpose
<b>Step 3</b>	UCS-A /eth-uplink/fabric # <b>create interface</b> <i>slot-num port-num</i>	Creates an interface for the specified Ethernet uplink port.
<b>Step 4</b>	UCS-A /eth-uplink/fabric # <b>set speed</b> {10gbps   1gbps}	(Optional) Sets the speed for the specified Ethernet uplink port. <b>Note</b> The admin speed is configurable for the first eight ports on a 20-port fabric interconnect and the first 16 ports on a 40-port fabric interconnect.
<b>Step 5</b>	UCS-A /eth-uplink/fabric # <b>commit-buffer</b>	Commits the transaction to the system configuration.

The following example creates an interface for Ethernet uplink port 3 on slot 2 of fabric B, sets the speed to 10 gbps, and commits the transaction:

```
UCS-A# scope eth-uplink
UCS-A /eth-uplink # scope fabric b
UCS-A /eth-uplink/fabric # create interface 2 3
UCS-A /eth-uplink/fabric # set speed 10gbps
UCS-A /eth-uplink/fabric* # commit-buffer
UCS-A /eth-uplink/fabric #
```

## Unconfiguring an Uplink Ethernet Port

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope eth-uplink</b>	Enters Ethernet uplink mode.
<b>Step 2</b>	UCS-A /eth-uplink # <b>scope fabric</b> {a   b}	Enters Ethernet uplink fabric mode for the specified fabric.
<b>Step 3</b>	UCS-A /eth-uplink/fabric # <b>delete interface</b> <i>slot-num port-num</i>	Deletes the interface for the specified Ethernet uplink port.
<b>Step 4</b>	UCS-A /eth-uplink/fabric # <b>commit-buffer</b>	Commits the transaction to the system configuration.

The following example unconfigures Ethernet uplink port 3 on slot 2 of fabric B and commits the transaction:

```
UCS-A# scope eth-uplink
UCS-A /eth-uplink # scope fabric b
UCS-A /eth-uplink/fabric # delete interface 2 3
UCS-A /eth-uplink/fabric* # commit-buffer
UCS-A /eth-uplink/fabric #
```

# Appliance Ports

## Configuring an Appliance Port

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

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope eth-storage</b>	Enters Ethernet storage mode.
<b>Step 2</b>	UCS-A /eth-storage # <b>scope fabric {a   b}</b>	Enters Ethernet storage mode for the specified fabric.
<b>Step 3</b>	UCS-A /eth-storage/fabric # <b>create interface slot-num port-num</b>	Creates an interface for the specified appliance port.
<b>Step 4</b>	UCS-A /eth-storage/fabric/interface # <b>set portmode {access   trunk}</b>	(Optional) Specifies whether the port mode is access or trunk. By default, the mode is set to trunk.
<b>Step 5</b>	UCS-A /eth-storage/fabric/interface # <b>set pingroupname pin-group name</b>	(Optional) Specifies the appliance pin target to the specified fabric and port, or fabric and port channel.
<b>Step 6</b>	UCS-A /eth-storage/fabric/interface # <b>set prio sys-class-name</b>	(Optional) Specifies the QoS class for the appliance port. By default, the priority is set to best-effort.  The sys-class-name argument can be one of the following class keywords: <ul style="list-style-type: none"> <li>• <b>fc</b>—Use this priority for QoS policies that control vHBA traffic only.</li> <li>• <b>platinum</b>—Use this priority for QoS policies that control vNIC traffic only.</li> <li>• <b>gold</b>—Use this priority for QoS policies that control vNIC traffic only.</li> <li>• <b>silver</b>—Use this priority for QoS policies that control vNIC traffic only.</li> <li>• <b>bronze</b>—Use this priority for QoS policies that control vNIC traffic only.</li> <li>• <b>best-effort</b>—Do not use this priority. It is reserved for the Basic Ethernet traffic lane. If you assign this priority to a QoS policy and configure another system class as CoS 0, Cisco UCS Manager does not default to this system class. It defaults to the priority with CoS 0 for that traffic.</li> </ul>

	Command or Action	Purpose
<b>Step 7</b>	UCS-A /eth-storage/fabric/interface # <b>set adminspeed {10gbps   1gbps}</b>	(Optional) Specifies the admin speed for the interface. By default, the admin speed is set to 10gbps.
<b>Step 8</b>	UCS-A /eth-storage/fabric/interface # <b>commit buffer</b>	Commits the transaction to the system configuration.

The following example creates an interface for an appliance port 2 on slot 3 of fabric B, sets the port mode to access, pins the appliance port to a pin group called pingroup1, sets the QoS class to fc, sets the admin speed to 10 gbps, and commits the transaction:

```
UCS-A# scope eth-storage
UCS-A /eth-storage # scope fabric b
UCS-A /eth-storage/fabric # create interface 3 2
UCS-A /eth-storage/fabric* # set portmode access
UCS-A /eth-storage/fabric* # set pingroupname pingroup1
UCS-A /eth-storage/fabric* # set prio fc
UCS-A /eth-storage/fabric* # set adminspeed 10gbps
UCS-A /eth-storage/fabric* # commit-buffer
UCS-A /eth-storage/fabric #
```

### What to Do Next

Assign a VLAN or target MAC address for the appliance port.

## Assigning a Target MAC Address to an Appliance Port or Appliance Port Channel

The following procedure assigns a target MAC address to an appliance port. To assign a target MAC address to an appliance port channel, scope to the port channel instead of the interface.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope eth-storage</b>	Enters Ethernet storage mode.
<b>Step 2</b>	UCS-A /eth-storage # <b>scope fabric {a   b}</b>	Enters Ethernet storage mode for the specified fabric.
<b>Step 3</b>	UCS-A /eth-storage/fabric # <b>scope interface slot-id port-id</b>	Enters Ethernet interface mode for the specified interface. <b>Note</b> To assign a target MAC address to an appliance port channel, use the <b>scope port-channel</b> command instead of <b>scope interface</b> .
<b>Step 4</b>	UCS-A /eth-storage/fabric/interface # <b>create eth-target eth-target name</b>	Specifies the name for the specified MAC address target.

	Command or Action	Purpose
<b>Step 5</b>	UCS-A /eth-storage/fabric/interface/eth-target # <b>set mac-address</b> <i>mac-address</i>	Specifies the MAC address in nn:nn:nn:nn:nn:nn format.

The following example assigns a target MAC address for an appliance device on port 3, slot 2 of fabric B and commits the transaction:

```
UCS-A# scope eth-storage
UCS-A /eth-storage* # scope fabric b
UCS-A /eth-storage/fabric* # scope interface 2 3
UCS-A /eth-storage/fabric/interface* # create eth-target macname
UCS-A /eth-storage/fabric/interface* # set mac-address 01:23:45:67:89:ab
UCS-A /eth-storage/fabric/interface* # commit-buffer
UCS-A /eth-storage/fabric #
```

The following example assigns a target MAC address for appliance devices on port channel 13 of fabric B and commits the transaction:

```
UCS-A# scope eth-storage
UCS-A /eth-storage* # scope fabric b
UCS-A /eth-storage/fabric* # scope port-channel 13
UCS-A /eth-storage/fabric/port-channel* # create eth-target macname
UCS-A /eth-storage/fabric/port-channel* # set mac-address 01:23:45:67:89:ab
UCS-A /eth-storage/fabric/port-channel* # commit-buffer
UCS-A /eth-storage/fabric #
```

## Unconfiguring an Appliance Port

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A # <b>scope eth-storage</b>	Enters Ethernet storage mode.
<b>Step 2</b>	UCS-A /eth-storage # <b>scope fabric</b> {a   b}	Enters Ethernet storage mode for the specified fabric.
<b>Step 3</b>	UCS-A /eth-storage/fabric # <b>delete eth-interface</b> <i>slot-num port-num</i>	Deletes the interface for the specified appliance port.
<b>Step 4</b>	UCS-A /eth-storage/fabric # <b>commit-buffer</b>	Commits the transaction to the system configuration.

The following example unconfigures appliance port 3 on slot 2 of fabric B and commits the transaction:

```
UCS-A# scope eth-storage
UCS-A /eth-storage # scope fabric b
UCS-A /eth-storage/fabric # delete eth-interface 2 3
UCS-A /eth-storage/fabric* # commit-buffer
UCS-A /eth-storage/fabric #
```

# Fibre Channel Storage and FCoE Ports

## Configuring a Fibre Channel Storage or FCoE Port

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope fc-storage</b>	Enters Fibre Channel storage mode.
<b>Step 2</b>	UCS-A /fc-storage # <b>scope fabric {a   b}</b>	Enters Fibre Channel storage mode for the specified fabric.
<b>Step 3</b>	UCS-A /fc-storage/fabric # <b>create interface {fc   fcoe} slot-num port-num</b>	Creates an interface for the specified Fibre Channel storage port.
<b>Step 4</b>	UCS-A /fc-storage/fabric # <b>commit-buffer</b>	Commits the transaction.

The following example creates an interface for Fibre Channel storage port 10 on slot 2 of fabric A and commits the transaction:

```
UCS-A# scope fc-storage
UCS-A /fc-storage # scope fabric a
UCS-A /fc-storage/fabric* # create interface fc 2 10
UCS-A /fc-storage/fabric # commit-buffer
```

### What to Do Next

Assign a VSAN.

## Unconfiguring a Fibre Channel Storage or FCoE Port

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope fc-storage</b>	Enters Fibre Channel storage mode.
<b>Step 2</b>	UCS-A /fc-storage # <b>scope fabric {a   b}</b>	Enters Fibre Channel storage mode for the specified fabric.
<b>Step 3</b>	UCS-A /fc-storage/fabric # <b>delete interface {fc   fcoe} slot-num port-num</b>	Deletes the interface for the specified Fibre Channel or FCoE storage port.
<b>Step 4</b>	UCS-A /fc-storage/fabric # <b>commit-buffer</b>	Commits the transaction.



The following example unconfigures Fibre Channel storage port 10 on slot 2 of fabric A and commits the transaction:

```
UCS-A# scope fc-storage
UCS-A /fc-storage # scope fabric a
UCS-A /fc-storage/fabric* # delete interface fc 2 10
UCS-A /fc-storage/fabric # commit-buffer
```

## Restoring a Fibre Channel Storage Port Back to an Uplink Fibre Channel Port

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope fc-uplink</b>	Enters Fibre Channel uplink mode.
<b>Step 2</b>	UCS-A /fc-uplink # <b>scope fabric {a   b}</b>	Enters Fibre Channel uplink mode for the specified fabric.
<b>Step 3</b>	UCS-A /fc-uplink/fabric # <b>create interface slot-num port-num</b>	Creates an interface for the specified Fibre Channel uplink port.
<b>Step 4</b>	UCS-A /fc-uplink/fabric # <b>commit-buffer</b>	Commits the transaction.

The following example creates an interface for Fibre Channel uplink port 10 on slot 2 of fabric A and commits the transaction:

```
UCS-A# scope fc-uplink
UCS-A /fc-uplink # scope fabric a
UCS-A /fc-uplink/fabric* # create interface 2 10
UCS-A /fc-uplink/fabric # commit-buffer
```

## Default Zoning

Zoning allows you to set up access control between hosts and storage devices. When a zone is configured or the configuration is updated, this information is propagated to all the other switches in the fabric.

In Cisco UCS, the zoning configuration is inherited from an upstream switch. You cannot configure zoning or view information about your zoning configuration through Cisco UCS Manager. The only configurable zoning option in Cisco UCS Manager is whether the default zone in a VSAN (nodes not assigned to any zone) permits or denies access among its members.

When default zoning is **enabled**, all traffic is permitted among members of the default zone.

When default zoning is **disabled**, all traffic is denied among members of the default zone.

Default zoning is applied on a per-VSAN basis. You cannot enable default zoning at the fabric level.



### Note

Default zoned configurations are not recommended for production deployments, which must always use direct connect Fibre Channel topologies with upstream MDS or Nexus 5000 switches.

## Enabling Default Zoning

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope fc-storage</b>	Enters Fibre Channel storage mode.
<b>Step 2</b>	UCS-A /fc-storage # <b>scope vsan</b> <i>vsan-name</i> <i>vsan-id fcoe-id</i>	Enters Fibre Channel storage VSAN mode.
<b>Step 3</b>	UCS-A /fc-storage/vsan # <b>set default-zoning enabled</b>	Enables default zoning.  When default zoning is <b>enabled</b> , all traffic is permitted among members of the default zone.
<b>Step 4</b>	UCS-A /fc-storage/vsan # <b>commit-buffer</b>	Commits the transaction.

The following example enables default zoning for a VSAN called accounting with VSAN ID 2112 and FCoE VSAN ID 4021 and commits the transaction:

```
UCS-A# scope fc-storage
UCS-A /fc-storage # scope vsan accounting 2112 4021
UCS-A /fc-storage/vsan # set default-zoning enabled
UCS-A /fc-storage/vsan* # commit-buffer
UCS-A /fc-storage/vsan #
```

## Disabling Default Zoning

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope fc-storage</b>	Enters Fibre Channel storage mode.
<b>Step 2</b>	UCS-A /fc-storage # <b>scope vsan</b> <i>vsan-name</i> <i>vsan-id fcoe-id</i>	Enters Fibre Channel storage VSAN mode.
<b>Step 3</b>	UCS-A /fc-storage/vsan # <b>set default-zoning disabled</b>	Disables default zoning.  When default zoning is <b>disabled</b> , all traffic is denied among members of the default zone.
<b>Step 4</b>	UCS-A /fc-storage/vsan # <b>commit-buffer</b>	Commits the transaction.

The following example disables default zoning for a VSAN called accounting with VSAN ID 2112 and FCoE VSAN ID 4021 and commits the transaction:

```
UCS-A# scope fc-storage
UCS-A /fc-storage # scope vsan accounting 2112 4021
UCS-A /fc-storage # set default-zoning disabled
```

```
UCS-A /fc-storage* # commit-buffer
UCS-A /fc-storage #
```

## Uplink Ethernet Port Channels

An uplink Ethernet 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. In Cisco UCS Manager, you create a port channel first and then add uplink Ethernet ports to the port channel. 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 therefore forward packets.

## Configuring an Uplink Ethernet Port Channel

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope eth-uplink</b>	Enters Ethernet uplink mode.
<b>Step 2</b>	UCS-A /eth-uplink # <b>scope fabric {a   b }</b>	Enters Ethernet uplink fabric mode for the specified fabric.
<b>Step 3</b>	UCS-A /eth-uplink/fabric # <b>create port-channel</b> <i>port-num</i>	Creates a port channel on the specified Ethernet uplink port, and enters Ethernet uplink fabric port channel mode.
<b>Step 4</b>	UCS-A /eth-uplink/fabric/port-channel # <b>{enable   disable}</b>	(Optional) Enables or disables the administrative state of the port channel. The port channel is disabled by default.
<b>Step 5</b>	UCS-A /eth-uplink/fabric/port-channel # <b>set name</b> <i>port-chan-name</i>	(Optional) Specifies the name for the port channel.
<b>Step 6</b>	UCS-A /eth-uplink/fabric/port-channel # <b>set flow-control-policy</b> <i>policy-name</i>	(Optional) Assigns the specified flow control policy to the port channel.
<b>Step 7</b>	UCS-A /eth-uplink/fabric/port-channel # <b>commit-buffer</b>	Commits the transaction to the system configuration.

The following example creates a port channel on port 13 of fabric A, sets the name to portchan13a, enables the administrative state, assigns the flow control policy named flow-con-pol432 to the port channel, and commits the transaction:

```
UCS-A# scope eth-uplink
UCS-A /eth-uplink # scope fabric a
UCS-A /eth-uplink/fabric # create port-channel 13
UCS-A /eth-uplink/fabric/port-channel* # enable
UCS-A /eth-uplink/fabric/port-channel* # set name portchan13a
UCS-A /eth-uplink/fabric/port-channel* # set flow-control-policy flow-con-pol432
UCS-A /eth-uplink/fabric/port-channel* # commit-buffer
UCS-A /eth-uplink/fabric/port-channel #
```

## Unconfiguring an Uplink Ethernet Port Channel

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope eth-uplink</b>	Enters Ethernet uplink mode.
<b>Step 2</b>	UCS-A /eth-uplink # <b>scope fabric {a   b }</b>	Enters Ethernet uplink fabric mode for the specified fabric.
<b>Step 3</b>	UCS-A /eth-uplink/fabric # <b>delete port-channel <i>port-num</i></b>	Deletes the port channel on the specified Ethernet uplink port.
<b>Step 4</b>	UCS-A /eth-uplink/fabric # <b>commit-buffer</b>	Commits the transaction to the system configuration.

The following example unconfigures the port channel on port 13 of fabric A and commits the transaction:

```
UCS-A# scope eth-uplink
UCS-A /eth-uplink # scope fabric a
UCS-A /eth-uplink/fabric # delete port-channel 13
UCS-A /eth-uplink/fabric* # commit-buffer
UCS-A /eth-uplink/fabric #
```

## Adding a Member Port to an Uplink Ethernet Port Channel

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope eth-uplink</b>	Enters Ethernet uplink mode.
<b>Step 2</b>	UCS-A /eth-uplink # <b>scope fabric {a   b }</b>	Enters Ethernet uplink fabric mode for the specified fabric.

	Command or Action	Purpose
<b>Step 3</b>	UCS-A /eth-uplink/fabric # <b>scope port-channel</b> <i>port-num</i>	Enters Ethernet uplink fabric port channel mode for the specified port channel.
<b>Step 4</b>	UCS-A /eth-uplink/fabric/port-channel # <b>create member-port</b> <i>slot-num port-num</i>	Creates the specified member port from the port channel and enters Ethernet uplink fabric port channel member port mode.
<b>Step 5</b>	UCS-A /eth-uplink/fabric/port-channel # <b>commit-buffer</b>	Commits the transaction to the system configuration.

The following example adds the member port on slot 1, port 7 to the port channel on port 13 of fabric A and commits the transaction.

```
UCS-A# scope eth-uplink
UCS-A /eth-uplink # scope fabric a
UCS-A /eth-uplink/fabric # scope port-channel 13
UCS-A /eth-uplink/fabric/port-channel # create member-port 1 7
UCS-A /eth-uplink/fabric/port-channel* # commit-buffer
UCS-A /eth-uplink/fabric/port-channel #
```

## Deleting a Member Port from an Uplink Ethernet Port Channel

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope eth-uplink</b>	Enters Ethernet uplink mode.
<b>Step 2</b>	UCS-A /eth-uplink # <b>scope fabric</b> {a   b }	Enters Ethernet uplink fabric mode for the specified fabric.
<b>Step 3</b>	UCS-A /eth-uplink/fabric # <b>scope port-channel</b> <i>port-num</i>	Enters Ethernet uplink fabric port channel mode for the specified port channel.
<b>Step 4</b>	UCS-A /eth-uplink/fabric/port-channel # <b>delete member-port</b> <i>slot-num port-num</i>	Deletes the specified member port from the port channel.
<b>Step 5</b>	UCS-A /eth-uplink/fabric/port-channel # <b>commit-buffer</b>	Commits the transaction to the system configuration.

The following example deletes a member port from the port channel on port 13 of fabric A and commits the transaction:

```
UCS-A# scope eth-uplink
UCS-A /eth-uplink # scope fabric a
UCS-A /eth-uplink/fabric # scope port-channel 13
UCS-A /eth-uplink/fabric/port-channel # delete member-port 1 7
UCS-A /eth-uplink/fabric/port-channel* # commit-buffer
```

```
UCS-A /eth-uplink/fabric/port-channel #
```

## Appliance Port Channels

An appliance port channel allows you to group several physical appliance ports (link aggregation) to create one logical Ethernet storage link for the purpose of providing fault-tolerance and high-speed connectivity. In Cisco UCS Manager, you create a port channel first and then add appliance ports to the port channel. You can add up to eight appliance ports to a port channel.



### Note

Cisco UCS uses static mode, not Link Aggregation Control Protocol (LACP), to group the appliance ports into a port channel.

## Configuring an Appliance Port Channel

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope eth-storage</b>	Enters Ethernet storage mode.
<b>Step 2</b>	UCS-A /eth-storage # <b>scope fabric {a   b}</b>	Enters Ethernet storage fabric mode for the specified fabric.
<b>Step 3</b>	UCS-A /eth-storage/fabric # <b>create port-channel port-num</b>	Creates a port channel on the specified Ethernet storage port, and enters Ethernet storage fabric port channel mode.
<b>Step 4</b>	UCS-A /eth-storage/fabric/port-channel # <b>{enable   disable}</b>	(Optional) Enables or disables the administrative state of the port channel. The port channel is disabled by default.
<b>Step 5</b>	UCS-A /eth-storage/fabric/port-channel # <b>set name port-chan-name</b>	(Optional) Specifies the name for the port channel.
<b>Step 6</b>	UCS-A /eth-storage/fabric/port-channel # <b>set pingroupname pin-group name</b>	(Optional) Specifies the appliance pin target to the specified fabric and port, or fabric and port channel.
<b>Step 7</b>	UCS-A /eth-storage/fabric/port-channel # <b>set portmode {access   trunk}</b>	(Optional) Specifies whether the port mode is access or trunk. By default, the mode is set to trunk.
<b>Step 8</b>	UCS-A /eth-storage/fabric/port-channel # <b>set prio sys-class-name</b>	(Optional) Specifies the QoS class for the appliance port. By default, the priority is set to best-effort.  The sys-class-name argument can be one of the following class keywords:

	Command or Action	Purpose
		<ul style="list-style-type: none"> <li>• <b>fc</b>—Use this priority for QoS policies that control vHBA traffic only.</li> <li>• <b>platinum</b>—Use this priority for QoS policies that control vNIC traffic only.</li> <li>• <b>gold</b>—Use this priority for QoS policies that control vNIC traffic only.</li> <li>• <b>silver</b>—Use this priority for QoS policies that control vNIC traffic only.</li> <li>• <b>bronze</b>—Use this priority for QoS policies that control vNIC traffic only.</li> <li>• <b>best-effort</b>—Do not use this priority. It is reserved for the Basic Ethernet traffic lane. If you assign this priority to a QoS policy and configure another system class as CoS 0, Cisco UCS Manager does not default to this system class. It defaults to the priority with CoS 0 for that traffic.</li> </ul>
<b>Step 9</b>	UCS-A /eth-storage/fabric/port-channel # <b>set speed {1gbps   2gbps   4gbps   8gbps   auto}</b>	(Optional) Specifies the speed for the port channel.
<b>Step 10</b>	UCS-A /eth-storage/fabric/port-channel # <b>commit-buffer</b>	Commits the transaction to the system configuration.

The following example creates a port channel on port 13 of fabric A and commits the transaction:

```
UCS-A# scope eth-storage
UCS-A /eth-storage # scope fabric a
UCS-A /eth-storage/fabric # create port-channel 13
UCS-A /eth-storage/fabric/port-channel* # enable
UCS-A /eth-storage/fabric/port-channel* # set name portchan13a
UCS-A /eth-storage/fabric/port-channel* # set pingroupname pingroup1
UCS-A /eth-storage/fabric/port-channel* # set portmode access
UCS-A /eth-storage/fabric/port-channel* # set prio fc
UCS-A /eth-storage/fabric/port-channel* # set speed 2gbps
UCS-A /eth-storage/fabric/port-channel* # commit-buffer
UCS-A /eth-storage/fabric/port-channel #
```

## Unconfiguring an Appliance Port Channel

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope eth-storage</b>	Enters Ethernet storage mode.
<b>Step 2</b>	UCS-A /eth-storage # <b>scope fabric {a   b}</b>	Enters Ethernet storage fabric mode for the specified fabric.
<b>Step 3</b>	UCS-A /eth-storage/fabric # <b>delete port-channel port-num</b>	Deletes the port channel from the specified Ethernet storage port.
<b>Step 4</b>	UCS-A /eth-storage/fabric # <b>commit-buffer</b>	Commits the transaction to the system configuration.

The following example unconfigures the port channel on port 13 of fabric A and commits the transaction:

```
UCS-A# scope eth-storage
UCS-A /eth-storage # scope fabric a
UCS-A /eth-storage/fabric # delete port-channel 13
UCS-A /eth-storage/fabric* # commit-buffer
UCS-A /eth-storage/fabric #
```

## Enabling or Disabling an Appliance Port Channel

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope eth-storage</b>	Enters Ethernet storage mode.
<b>Step 2</b>	UCS-A /eth-storage # <b>scope fabric {a   b}</b>	Enters Ethernet storage mode for the specified fabric.
<b>Step 3</b>	UCS-A /eth-storage/fabric # <b>scope port-channel port-chan-name</b>	Enters Ethernet storage port channel mode.
<b>Step 4</b>	UCS-A /eth-storage/fabric/port-channel # <b>{enable   disable}</b>	Enables or disables the administrative state of the port channel. The port channel is disabled by default.
<b>Step 5</b>	UCS-A /eth-storage/fabric/port-channel # <b>commit-buffer</b>	Commits the transaction to the system configuration.



The following example enables port channel 13 on fabric A and commits the transaction:

```
UCS-A# scope eth-storage
UCS-A /eth-storage # scope fabric a
UCS-A /eth-storage/fabric # scope port-channel 13
UCS-A /eth-storage/fabric/port-channel* # enable
UCS-A /eth-storage/fabric/port-channel* # commit-buffer
UCS-A /eth-storage/fabric/port-channel #
```

## Adding a Member Port to an Appliance Port Channel

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope eth-storage</b>	Enters Ethernet storage mode.
<b>Step 2</b>	UCS-A /eth-storage # <b>scope fabric {a   b }</b>	Enters Ethernet storage fabric mode for the specified fabric.
<b>Step 3</b>	UCS-A /eth-storage/fabric # <b>scope port-channel port-num</b>	Enters Ethernet storage fabric port channel mode for the specified port channel.
<b>Step 4</b>	UCS-A /eth-storage/fabric/port-channel # <b>create member-port slot-num port-num</b>	Creates the specified member port from the port channel and enters Ethernet storage fabric port channel member port mode.
<b>Step 5</b>	UCS-A /eth-storage/fabric/port-channel # <b>commit-buffer</b>	Commits the transaction to the system configuration.

The following example adds the member port on slot 1, port 7 to the port channel on port 13 of fabric A and commits the transaction.

```
UCS-A# scope eth-storage
UCS-A /eth-storage # scope fabric a
UCS-A /eth-storage/fabric # scope port-channel 13
UCS-A /eth-storage/fabric/port-channel # create member-port 1 7
UCS-A /eth-storage/fabric/port-channel* # commit-buffer
UCS-A /eth-storage/fabric/port-channel #
```

## Deleting a Member Port from an Appliance Port Channel

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope eth-storage</b>	Enters Ethernet storage mode.
<b>Step 2</b>	UCS-A /eth-storage # <b>scope fabric {a   b }</b>	Enters Ethernet storage fabric mode for the specified fabric.

	Command or Action	Purpose
<b>Step 3</b>	UCS-A /eth-storage/fabric # <b>scope port-channel</b> <i>port-num</i>	Enters Ethernet storage fabric port channel mode for the specified port channel.
<b>Step 4</b>	UCS-A /eth-storage/fabric/port-channel # <b>delete member-port</b> <i>slot-num port-num</i>	Deletes the specified member port from the port channel.
<b>Step 5</b>	UCS-A /eth-storage/fabric/port-channel # <b>commit-buffer</b>	Commits the transaction to the system configuration.

The following example deletes a member port from the port channel on port 13 of fabric A and commits the transaction:

```
UCS-A# scope eth-storage
UCS-A /eth-storage # scope fabric a
UCS-A /eth-storage/fabric # scope port-channel 13
UCS-A /eth-storage/fabric/port-channel # delete member-port 1 7
UCS-A /eth-storage/fabric/port-channel* # commit-buffer
UCS-A /eth-storage/fabric/port-channel #
```

## Fibre Channel Port Channels

A Fibre Channel 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. In Cisco UCS Manager, you create a port channel first and then add Fibre Channel ports to the port channel.

You can create up to four Fibre Channel port channels in each Cisco UCS instance. Each Fibre Channel port channel can include a maximum of 16 uplink Fibre Channel ports.

## Configuring a Fibre Channel Port Channel



### Note

If you are connecting two Fibre Channel port channels, the admin speed for both port channels must match for the link to operate. If the admin speed for one or both of the Fibre Channel port channels is set to auto, Cisco UCS adjusts the admin speed automatically.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope fc-uplink</b>	Enters Fibre Channel uplink mode.
<b>Step 2</b>	UCS-A /fc-uplink # <b>scope fabric</b> {a   b }	Enters Fibre Channel uplink fabric mode for the specified fabric.

	Command or Action	Purpose
<b>Step 3</b>	UCS-A /fc-uplink/fabric # <b>create port-channel</b> <i>port-num</i>	Creates a port channel on the specified Fibre Channel uplink port, and enters Fibre Channel uplink fabric port channel mode.
<b>Step 4</b>	UCS-A /fc-uplink/fabric/port-channel # { <b>enable</b>   <b>disable</b> }	(Optional) Enables or disables the administrative state of the port channel. The port channel is disabled by default.
<b>Step 5</b>	UCS-A /fc-uplink/fabric/port-channel # <b>set name</b> <i>port-chan-name</i>	(Optional) Specifies the name for the port channel.
<b>Step 6</b>	UCS-A /fc-uplink/fabric/port-channel # <b>set speed</b> { <b>1gbps</b>   <b>2gbps</b>   <b>4gbps</b>   <b>8gbps</b>   <b>auto</b> }	(Optional) Specifies the speed for the port channel.
<b>Step 7</b>	UCS-A /fc-uplink/fabric/port-channel # <b>commit-buffer</b>	Commits the transaction to the system configuration.

The following example creates port channel 13 on fabric A, sets the name to portchan13a, enables the administrative state, sets the speed to 2 Gbps, and commits the transaction:

```
UCS-A# scope fc-uplink
UCS-A /fc-uplink # scope fabric a
UCS-A /fc-uplink/fabric # create port-channel 13
UCS-A /fc-uplink/fabric/port-channel* # enable
UCS-A /fc-uplink/fabric/port-channel* # set name portchan13a
UCS-A /fc-uplink/fabric/port-channel* # set speed 2gbps
UCS-A /fc-uplink/fabric/port-channel* # commit-buffer
UCS-A /fc-uplink/fabric/port-channel #
```

## Unconfiguring a Fibre Channel Port Channel

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope fc-uplink</b>	Enters Fibre Channel uplink mode.
<b>Step 2</b>	UCS-A /fc-uplink # <b>scope fabric</b> { <b>a</b>   <b>b</b> }	Enters Fibre Channel uplink fabric mode for the specified fabric.
<b>Step 3</b>	UCS-A /fc-uplink/fabric # <b>delete port-channel</b> <i>port-num</i>	Deletes the port channel on the specified Fibre Channel uplink port.
<b>Step 4</b>	UCS-A /fc-uplink/fabric # <b>commit-buffer</b>	Commits the transaction to the system configuration.

The following example unconfigures port channel 13 on fabric A and commits the transaction:

```
UCS-A# scope fc-uplink
UCS-A /fc-uplink # scope fabric a
UCS-A /fc-uplink/fabric # delete port-channel 13
UCS-A /fc-uplink/fabric* # commit-buffer
UCS-A /fc-uplink/fabric #
```

## Enabling or Disabling a Fibre Channel Port Channel

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope fc-uplink</b>	Enters Fibre Channel uplink mode.
<b>Step 2</b>	UCS-A /fc-uplink # <b>scope fabric {a   b}</b>	Enters Fibre Channel uplink mode for the specified fabric.
<b>Step 3</b>	UCS-A /fc-uplink/fabric # <b>scope port-channel port-chan-name</b>	Enters Fibre Channel uplink port channel mode.
<b>Step 4</b>	UCS-A /fc-uplink/fabric/port-channel # <b>{enable   disable}</b>	Enables or disables the administrative state of the port channel. The port channel is disabled by default.

The following example enables port channel 13 on fabric A and commits the transaction:

```
UCS-A# scope fc-uplink
UCS-A /fc-uplink # scope fabric a
UCS-A /fc-uplink/fabric # scope port-channel 13
UCS-A /fc-uplink/fabric/port-channel* # enable
UCS-A /fc-uplink/fabric/port-channel* # commit-buffer
UCS-A /fc-uplink/fabric/port-channel #
```

## Adding a Member Port to a Fibre Channel Port Channel

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope fc-uplink</b>	Enters Fibre Channel uplink mode.
<b>Step 2</b>	UCS-A /fc-uplink # <b>scope fabric {a   b}</b>	Enters Fibre Channel uplink fabric mode for the specified fabric.
<b>Step 3</b>	UCS-A /fc-uplink/fabric # <b>scope port-channel port-num</b>	Enters Fibre Channel uplink fabric port channel mode for the specified port channel.

	Command or Action	Purpose
<b>Step 4</b>	UCS-A /fc-uplink/fabric/port-channel # <b>create member-port</b> <i>slot-num port-num</i>	Creates the specified member port from the port channel and enters Fibre Channel uplink fabric port channel member port mode.
<b>Step 5</b>	UCS-A /fc-uplink/fabric/port-channel # <b>commit-buffer</b>	Commits the transaction to the system configuration.

The following example adds the member port on slot 1, port 7 to port channel 13 on fabric A and commits the transaction.

```
UCS-A# scope fc-uplink
UCS-A /fc-uplink # scope fabric a
UCS-A /fc-uplink/fabric # scope port-channel 13
UCS-A /fc-uplink/fabric # create member-port 1 7
UCS-A /fc-uplink/fabric/port-channel* # commit-buffer
UCS-A /fc-uplink/fabric/port-channel #
```

## Deleting a Member Port from a Fibre Channel Port Channel

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope fc-uplink</b>	Enters Fibre Channel uplink mode.
<b>Step 2</b>	UCS-A /fc-uplink # <b>scope fabric</b> {a   b}	Enters Fibre Channel uplink fabric mode for the specified fabric.
<b>Step 3</b>	UCS-A /fc-uplink/fabric # <b>scope port-channel</b> <i>port-num</i>	Enters Fibre Channel uplink fabric port channel mode for the specified port channel.
<b>Step 4</b>	UCS-A /fc-uplink/fabric/port-channel # <b>delete member-port</b> <i>slot-num port-num</i>	Deletes the specified member port from the port channel.
<b>Step 5</b>	UCS-A /fc-uplink/fabric/port-channel # <b>commit-buffer</b>	Commits the transaction to the system configuration.

The following example deletes a member port from port channel 13 on fabric A and commits the transaction:

```
UCS-A# scope fc-uplink
UCS-A /fc-uplink # scope fabric a
UCS-A /fc-uplink/fabric # scope port-channel 13
UCS-A /fc-uplink/fabric # delete member-port 1 7
UCS-A /fc-uplink/fabric/port-channel* # commit-buffer
UCS-A /fc-uplink/fabric/port-channel #
```

