



# Connecting the Fabric Interconnect

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## Overview of Network Connections

After you install the fabric interconnect in a rack and power it up, you are ready to make the following network connections:

- **Console connection**—This is a direct local management connection that you use to initially configure the fabric interconnect. You must make this connection first to initially configure the fabric interconnect and determine its IP address, which is needed for the other connections.
- **Management connection**—After you complete the initial configuration using a console, you can make this connection to manage all future fabric interconnect configurations.
- **Uplink and downlink interface connections**—These are connections to hosts and servers in the network.

Each of these connection types is explained in one of the sections that follow.



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**Note** When running cables in overhead or subfloor cable trays, we strongly recommend that you locate power cables and other potential noise sources as far away as practical from network cabling that terminates on Cisco equipment. In situations where long parallel cable runs cannot be separated by at least 3.3 feet (1 meter), we recommend that you shield any potential noise sources by housing them in a grounded metallic conduit.

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# Connecting a Console to the Fabric Interconnect

Before you create a network management connection for the fabric interconnect or connect the fabric interconnect to the network, you must create a local management connection through a console terminal. And then configure an IP address for the fabric interconnect. You can use the console to perform the following functions, each of which can be performed through the management interface after you make that connection:

- Configure the fabric interconnect using the command-line interface (CLI).
- Monitor network statistics and errors.
- Configure Simple Network Management Protocol (SNMP) agent parameters.
- Download software updates.

You make this local management connection between the asynchronous serial port on a supervisor module and a console device capable of asynchronous transmission. Typically, you can use a computer terminal as the console device. On the supervisor modules, you use the console serial port.



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**Note** Before you can connect the console port to a computer terminal, make sure that the computer terminal supports VT100 terminal emulation. The terminal emulation software makes communication between the fabric interconnect and computer possible during setup and configuration.

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## Before you begin

- The fabric interconnect must be fully installed in its rack, which is connected to a power source, and grounded.
- The necessary cabling for the console, management, and network connections must be available.
  - An RJ-45 rollover cable provided in the fabric interconnect accessory kit.
  - Network cabling is routed to the location of the installed fabric interconnect.

## Procedure

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- Step 1** Configure the console device to match the following default port characteristics:
- 9600 baud
  - 8 data bits
  - 1 stop bit
  - No parity
- Step 2** Connect an RJ-45 rollover cable to the console port on the fabric interconnect. You can find this cable in the accessory kit.

- Step 3** Route the RJ-45 rollover cable to the console or modem.
- Step 4** Connect the other end of the RJ-45 rollover cable to the console or to a modem.
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## Setting Up the Management Interface

The RJ-45 and/or SFP management ports provide out-of-band management, which enables you to use the command-line interface (CLI) to manage the fabric interconnect by its IP address. You can use one of these ports depending on the cable and connectors that you are using to connect the management interface to the network.

### Before you begin

- The fabric interconnect must be powered on.
- The fabric interconnect must be initially configured using a console.

### Procedure

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- Step 1** Connect the management cable with RJ-45 connectors into the management port on the fabric interconnect.
- Note** Use only one of these management ports—the fabric interconnect does not support the use of both management ports.
- Step 2** Connect the other end of the cable to a 10/100/1000 RJ-45 port on a network device.
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## Connecting Interface Ports to Other Devices

### Connections and Transceivers

After you perform the initial configuration for the fabric interconnect and create a management connection, you are ready to connect the interface ports on the fabric interconnect to other devices. Depending on the types of interface ports on the fabric interconnect, you will need to use interface cables with QSFP28, QSFP+, SFP+, SFP transceivers, or RJ-45 connectors to connect the fabric interconnect to other devices.



- Note** If you need to use SFP+ or SFP transceivers in a QSFP+ or QSFP28 uplink port, install a QSFP-to-SFP adapter, such as the CVR-QSFP-SFP10G adapter, in the QSFP port and then install the SFP+ or SFP transceiver. The fabric interconnect automatically sets the port speed to the speed of the installed transceiver.
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If the transceivers that you are using can be separated from their optical cables, install the transceivers without their cables before inserting the cables into the transceivers. This helps to prolong the life of both the transceiver and cables. When removing transceivers from the fabric interconnect, it is best to remove the optical cable first and then remove the transceiver.

To determine which transceivers, adapters, and cables are supported by this fabric interconnect, see the [Cisco Transceiver Modules Compatibility](#) Information document.

### Connections and Peer Devices

The Fabric Interconnect connects to peer devices through the following ways:

- IOMs and IFMs in the UCS B series blade chassis systems and UCS X Series compute node systems.
- FEX modules in the UCS C Series rack servers.
- Direct-connection in the UCS C Series rack servers.

## Fabric Interconnect Configuration

Cisco UCS 6500 Series Fabric Interconnect can be configured and managed using a supported Cisco management platforms, such as Cisco Intersight management platform in Intersight Managed Mode (Cisco Intersight Managed Mode). For details, see the *Cisco Intersight Managed Mode Configuration Guide*, which is available at the following URL: [Cisco Intersight Managed Mode Configuration Guide](#) .

## Fabric Interconnect Port Configuration

### Port Types

The Cisco UCS 6500 Series Fabric Interconnect has the following ports which shall be configured through supported Cisco management platforms:

- Server port: Port connected to the adapter in a UCS B-series or C-series server. This is typically a converged port that can carry Ethernet and FCoE traffic.
- Uplink port: Also called as border-port. An uplink port is an Ethernet port connecting to a northbound LAN aggregation switch.
- FC Uplink port: A FC port that is connected to an uplink FC fabric. For example, an FC interface of the MDS switch.
- FCoE Uplink port: An FCoE port that is connected to an uplink FCoE fabric. For example, an FCoE interface of the MDS switch.
- Appliance port: An Ethernet server-port that is directly connected to disk array. This configuration requires FI to be in Ethernet-End-Host-Mode.
- Unified Storage port: This is an Ethernet server-port that can also support FCoE and is directly connected to a disk-array. This support FCoE, iSCSI, NFS and CIFS (for example NetApp storage and the unified target adapter). Note that this port is also called as Unified Appliance Port.



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**Note** FCoE Storage ports are not supported.

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- Monitor port: The port supporting SPAN.

### Port Configuration

The following table shows the port types that can be configured. For port type definitions, see the preceding section.

Chassis Port	Port Speed	Supported Port Type	
1 through 32	10G/25G/40G/100G	Native Ethernet	<ul style="list-style-type: none"> <li>• Ethernet Uplink Port</li> <li>• FCoE uplink port</li> <li>• Appliance port (EHM only)</li> <li>• Monitor Port</li> </ul>
9 and 10	1G	Native Ethernet	Ethernet Uplink Port
1 through 36	25G/40G/100G	Native Ethernet	Server Ports
33 through 36	8G/16G/32G	Native FC	<ul style="list-style-type: none"> <li>• FC uplink port</li> <li>• FC Storage port</li> </ul> <p><b>Note</b> All 4 FC Breakout Ports of a QSFP port must be configured at 32G, 16G, or 8G. So, in other words, FC breakout ports of the same QSFP port cannot have different speeds.</p>
	100G/40G/10G/25G	Native Ethernet	<ul style="list-style-type: none"> <li>• Ethernet Uplink Port</li> <li>• Server port</li> <li>• FCoE uplink port</li> <li>• Appliance port (EHM only)</li> <li>• Monitor Port</li> </ul>

## Port Breakout

Port breakout is supported with the following configurations.

Breakout Level	Ports 1 through 8 (QSFP28)	Ports 9 - through 36 (QSFP28)
4x8G FC	No	Yes on ports 33 through 36 only
4x16G FC	No	Yes on ports 33 through 36 only
4x32G FC	No	Yes on ports 33 through 36 only
1x100G	Yes	Yes
4x10G	Yes	Yes
4x25G	Yes	Yes
1x40G	Yes	Yes
1x25G (Cisco QSA28 with SFP28)	Yes (QSA28)	Yes (QSA28)
1x10G QSA or QSA28 with SFP+	Yes (QSA28)	Yes (QSA28)
1G (Cisco QSA with SFP and SFP+)	No	Yes, ports 9 and 10 only Ports 11 through 36, no

## Migrating a Cisco 6400 Series Fabric Interconnect to a Cisco 6500 Series Fabric Interconnect

Migrating from a Cisco 6400 Series Fabric Interconnect to a Cisco 6500 Series Fabric Interconnect is supported.

Cisco Intersight Managed Mode is required to migrate to 6500 Series Fabric Interconnects.

To migrate from a Cisco UCS 6400 Series Fabric Interconnect to a Cisco 6500 Series Fabric Interconnect, refer to "Migrating to Cisco UCS 6500 Series Fabric Interconnects" in the [Cisco Intersight Managed Mode Configuration Guide](#).