

Connecting the Cisco UCS Fabric Interconnect

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Preparing for Network Connections

The Cisco UCS Fabric Interconnect provides the following types of ports:

- RS-232 local console port to create a local management connection.
- Ethernet ports, encrypted and unencrypted, to connect to a LAN.
- Fibre Channel ports to connect to a SAN.

When preparing your site for network connections to the Cisco UCS Fabric Interconnect, consider the following for each type of interface, and gather all the required equipment before connecting the ports:

- Cabling required for each interface type
- Distance limitations for each signal type
- Additional interface equipment required

Connecting to the Console Port



Caution You can connect the console port to a modem. If you do not connect it to a modem, connect it either before powering on the system or after the system has completed the boot process.

The console port on a Cisco UCS fabric interconnect provides an RS-232 serial connection over an RJ-45 interface. This interface can be used for the following tasks:

- Perform initial setup on a newly installed system that does not yet have other connectivity options

- Perform software recovery tasks when other connectivity is unavailable
- Monitor network statistics and errors
- Configure SNMP agent parameters
- Download software updates

Any device connected to this port must be capable of asynchronous transmission.

Before you begin

You may have to acquire some or all of the following:

- The Cisco serial console management cable.
- A USB to DB9 serial adapter and any drivers the adapter requires.
- Terminal emulation software such as PuTTY, HyperTerminal or Procomm Plus.
- A computer that can support VT100 terminal emulation.

Procedure

Step 1 Plug the RJ-45 end of the serial management cable into the console port on the fabric interconnect, and connect the DB-9 male end into the serial port on a laptop or other computer.

If the computer you will use does not have a serial port, you will need to use the Serial to USB adapter. Be sure to install the drivers for your adapter.

Step 2 Start your terminal software.

Step 3 Configure the terminal software as follows:

- The COM port for the connection you are about to establish is the connection to the fabric interconnect. You may need to look in the computer's device manager to confirm this.
- The other connection parameters are 9600 baud, 8 data bits, no parity, 1 stop bit.

Step 4 Use the terminal software's command to open the connection to the fabric interconnect.

A session window will start and you will see one of the following prompts:

```
loader>
```

or

```
switch(boot)#
```

or

```
FI-A(local-mgmt)#
```

You now have terminal access. Depending on the prompt, you may have all Cisco UCS Manager CLI commands or a very abbreviated set of configuration commands.

Connecting the Management Port

Caution To prevent an IP address conflict, do not connect the management port to the network until the initial configuration is complete. For configuration instructions, see the *Configuration Guide* for the version of Cisco UCS Manager that you are using. The configuration guides are available at this URL: http://www.cisco.com/c/en/us/support/servers-unified-computing/ucs-manager/products-installation-and-configuration-guides-list.html

The Ethernet management connector port has an RJ-45 interface that will connect to a switch or router.

Procedure

Step 1 Connect the appropriate modular cable to the Ethernet management connector port:

- Use modular, RJ-45, straight-through UTP cables to connect the port to an Ethernet switch or hub.
- Use a cross-over cable to connect to a router interface.

Step 2 Connect the other end of the cable to the device.

Connecting to an SFP28 Ethernet or Fibre Channel Port

Installing or Removing Cables into SFP Transceivers

Caution To prevent damage to the fiber-optic cables, do not place more tension on them than the rated limit and do not bend to a radius of less than 1 inch if there is no tension in the cable, or 2 inches if there is tension in the cable.

Installing a Transceiver

Use an SFP28 transceiver to connect to an Ethernet or Fibre Channel port.

Procedure

Step 1 Attach an ESD wrist strap and follow the instructions for its use.

Step 2 Remove the dust cover from the port cage.

Step 3 Remove the dust cover from the port end of the transceiver.

Step 4 Insert the transceiver into the port:

- If the transceiver has a Mylar tab, position the transceiver with the tab on the bottom, and then gently insert the transceiver into the port until it clicks into place.
- If the transceiver has a bale clasp, position the transceiver with the clasp on the bottom, close the clasp by pushing it up over the transceiver, and then gently insert the transceiver into the port until it clicks into place.
- If the transceiver does not install easily, ensure that it is correctly positioned and the tab or clasp are in the correct position before continuing.

Note
If you cannot install the cable into the transceiver, insert or leave the dust plug in the cable end of the transceiver.

Removing a Transceiver

Use an SFP28 transceiver to connect to an Ethernet or Fibre Channel port.



Caution Excessively installing and removing an SFP or SFP28 transceiver can shorten its life. Do not remove and install transceivers unless it is absolutely necessary. We recommend disconnecting cables before installing or removing transceivers to prevent damage to the cable or transceiver.

Procedure

Step 1 Attach an ESD wrist strap and follow the instructions for its use.

Step 2 If a cable is installed in the transceiver:

a) Record the cable and port connections for later reference.
b) Press the release latch on the cable, grasp the connector near the connection point, and gently pull the connector from the transceiver.
c) Insert a dust plug into the cable end of the transceiver.

If the transceiver does not remove easily in the next step, push the transceiver completely in and then ensure that the latch is in the correct position before continuing.

Step 3 Remove the transceiver from the port:

- If the transceiver has a Mylar tab latch, gently pull the tab straight out (do not twist), and then pull the transceiver out of the port.
- If the transceiver has a bale clasp latch, open the clasp by pressing it downwards, and then pull the transceiver out of the port.

Note
If you cannot remove the SFP28 transceiver, reseat it by returning the bale clasp to the up position. Press the SFP28 transceiver inward and upward into the cage. Next, lower the bale clasp and pull the SFP28 transceiver straight out with a slight upward lifting force. Be careful not to damage the port cage during this process.

Step 4 Insert a dust cover into the port end of the transceiver and place the transceiver on an antistatic mat or into a static shielding bag if you plan to return it to the factory.

Step 5 If another transceiver is not being installed, protect the optical cage by inserting a clean cover.

Installing or Removing Cables into SFP28 Trancsceivers

Installing a Cable into an SFP28 Transceiver

Only use transceivers that are validated by Cisco. Cisco-validated transceivers support optimal troubleshooting in the unlikely event that the Fabric Interconnect experiences link or traffic issues. For a list of Cisco-validated transceivers, go to the Cisco UCS 6400 Series Fabric Interconnects Data Sheet.

Caution To prevent possible damage to the cable or transceiver, install the transceiver in the port before installing the cable in the transceiver.

Procedure

Step 1 Attach an ESD wrist strap and follow the instructions for its use.

Step 2 Remove the dust cover from the connector on the cable.

Step 3 Remove the dust cover from the cable end of the transceiver.

Step 4 Align the cable connector with the transceiver and insert the connector into the transceiver until it clicks into place.

If the cable does not install easily, ensure that it is correctly positioned before continuing.

For instructions on verifying connectivity, see the *Configuration Guide* for the version of Cisco UCS Manager that you are using. The configuration guides are available at this URL: http://www.cisco.com/c/en/us/support/servers-unified-computing/ucs-manager/products-installation-and-configuration-guides-list.html

Removing a Cable from a Transceiver

Caution To prevent damage to the copper cables, do not place more tension on them than the rated limit and do not bend to a radius of less than 1 inch if there is no tension in the cable, or 2 inches if there is tension in the cable.

Caution When pulling a cable from a transceiver, grip the body of the connector. Do not pull on the jacket sleeve, because this action can compromise the fiber-optic termination in the connector.

Caution If the cable cannot be easily removed, ensure that any latch present on the cable has been released before continuing.

Procedure

Step 1 Attach an ESD wrist strap and follow the instructions for its use.

Step 2 Press the release latch on the cable, grasp the connector near the connection point, and gently pull the connector from the transceiver.

Step 3 Insert a dust plug into the cable end of the transceiver.

Step 4 Insert a dust plug onto the end of the cable.

Maintaining SFP28 Transceivers and Fiber-Optic Cables

SFP28, SFP+ transceivers, and fiber-optic cables must be kept clean and dust-free to maintain high signal accuracy and prevent damage to the connectors. Attenuation (loss of light) is increased by contamination and should be kept below 0.35 dB.

Consider the following maintenance guidelines:

- Only use transceivers that are validated by Cisco. Cisco-validated transceivers support optimal troubleshooting in the unlikely event that the Fabric Interconnect experiences link or traffic issues. For a list of Cisco-validated transceivers, go to the Cisco UCS 6400 Series Fabric Interconnects Data Sheet.
- Transceivers are static sensitive. To prevent ESD damage, wear an ESD wrist strap that is connected to the chassis.
- Do not remove and insert a transceiver more often than is necessary. Repeated removals and installation can shorten its useful life.
- Keep all optical connections covered when not in use. If they become dusty, clean before using to prevent dust from scratching the fiber-optic cable ends.
- Do not touch ends of connectors, ensuring that they remain free of fingerprints and other contamination.
- Clean regularly; the required frequency of cleaning depends upon the environment. In addition, clean connectors if they are exposed to dust or are accidentally touched. Both wet and dry cleaning techniques can be effective. Refer to fiber-optic cleaning procedures for your site.
- Inspect routinely for dust and damage. If damage is suspected, clean and then inspect fiber ends under a microscope to determine if damage has occurred.

Considerations and Warnings

Note Before you install, operate, or service the system, read the *Regulatory Compliance and Safety Information for Cisco UCS* for important safety information.

Warning IMPORTANT SAFETY INSTRUCTIONS This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device. Statement 1071

SAVE THESE INSTRUCTIONS

Warning This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security. Statement 1017

Warning Only trained and qualified personnel must be allowed to install, replace, or service this equipment. Statement 1030

Note Each new fabric interconnect requires a license. For information on licensing, see the Configuration Guide for the version of Cisco UCS Manager that you are using. The configuration guides are available at the following URL: Cisco UCS Manager Configuration Guides

Warning **Statement 1074 – Comply with Local and National Electrical Codes** To reduce risk of electric shock or file, installation of the equipment must comply with local and national electrical codes.

Warning **Statement 1032 – Lifting the Chassis**To prevent personal injury or damage to the chassis, never attempt to lift or tilt the chassis using the handles on modules (such as power supplies, fans, or cards); these types of handles are not designed to support the weight of the unit.

Warning **Statement 1006 – Chassis Warning for Rack-Mounting and Servicing**

To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

Warning **Statement 1032 – Lifting the Chassis** To prevent personal injury or damage to the chassis, never attempt to lift or tilt the chassis using the handles on modules (such as power supplies, fans, or cards); these types of handles are not designed to support the weight of the unit.

Warning **Statement – 1024 – Ground Conductor**

This equipment must be grounded. To reduce the risk of electric shock, never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.

Warning **Statement 1046 – Installing or Replacing the Unit**

To reduce risk of electric shock, when installing or replacing the unit, the ground connection must always be made first and disconnected last.

Unpacking and Inspecting the Cisco UCS Fabric Interconnect

Caution When handling fabric interconnect components, wear an ESD strap and handle modules by the carrier edges only. A grounding lug mounting point is provided on the fabric interconnect. For the grounding lug to be effective, the fabric interconnect must be grounded through the power cable, the chassis ground, or the metal-to-metal contact with a grounded rack.

Tip Optional: Keep the shipping container in case the fabric interconnect requires shipping in the future.

Note The interconnect is thoroughly inspected before shipment. If any damage occurred during transportation or any items are missing, contact your customer service representative immediately.

Procedure

Step 1 Compare the shipment to the equipment list provided by your customer service representative and verify that you have received all items, including the following:

- Grounding lug kit
- Rack-mount kit
- ESD wrist strap
- Cables with connectors
- Any optional items ordered

Step 2 Check for damage and report any discrepancies or damage to your customer service representative. Have the following information ready:

- Invoice number of shipper (see packing slip)
- Model and serial number of the damaged unit
- Description of damage
- Effect of damage on the installation