Connecting the Switch to the Network

Setting Up the Management Interface

Before You Begin

The switch must be powered on.

Step 1 Connect the management cable into the management port on the switch. If the cable has RJ-45 connectors, use the RJ-45 management port. If the cable has an SFP transceiver, use the SFP management port.

Step 2 Connect the other end of the cable to a 10/100/1000 or SFP port on a network device.

What to Do Next

You are ready to connect the interface ports on each of the I/O modules to the network.

Uplink Connections

The uplink ports support 40- and 100-Gigabit speeds as follows:

For a list of transceivers and cables used by this switch for uplink connections, see http://www.cisco.com/c/en/us/support/interfaces-modules/transceiver-modules/products-device-support-tables-list.html.

Warning **Statement 1051—**Laser Radiation

Invisible laser radiation may be emitted from disconnected fibers or connectors. Do not stare into beams or view directly with optical instruments.

Downlink Connections

For a listing of the transceivers and cables that the optical downlink ports support, see http://www.cisco.com/c/en/us/support/interfaces-modules/transceiver-modules/products-device-support-tables-list.html

For the 10GBASE-T cables, you use RJ-45 connectors on cables that conform to the specifications in the following table.

Table 1: Supported 10GBASE-T Cables

Cable Type	Supported Length
Category 6	180 feet (55 m)
Category 6a	328 feet (100 m)
Category 7	328 feet (100 m)
Category 7a	328 feet (100 m)

Guidelines for Connecting Ports

You can uplink six 40-Gigabit or 100-Gigabit QSFP+/QSFP28 ports to other devices and downlink 48 10GBASE-T ports to other devices.

To prevent damage to the fiber-optic cables that can separate from their cables, we recommend that you keep the transceivers disconnected from their fiber-optic cables when installing the transceiver in the I/O module. Before removing such a transceiver from the switch, remove the cable from the transceiver.

To maximize the effectiveness and life of your transceivers and optical cables, do the following:

- Wear an ESD-preventative wrist strap that is connected to an earth ground whenever handling transceivers. The switch is typically grounded during installation and provides an ESD port to which you can connect your wrist strap.
- Do not remove and insert a transceiver more often than is necessary. Repeated removals and insertions can shorten its useful life.
- Keep the transceivers and fiber-optic cables clean and dust free to maintain high signal accuracy and to prevent damage to the connectors. Attenuation (loss of light) is increased by contamination and should be kept below 0.35 dB.
    - Clean these parts before installation to prevent dust from scratching the fiber-optic cable ends.

- Clean the connectors regularly; the required frequency of cleaning depends upon the environment. In addition, clean connectors if they are exposed to dust or accidentally touched. Both wet and dry cleaning techniques can be effective; refer to your site's fiber-optic connection cleaning procedures.
- Do not touch the ends of connectors. Touching the ends can leave fingerprints and cause other contamination.

- Inspect routinely for dust and damage. If you suspect damage, clean and then inspect fiber ends under a microscope to determine if damage has occurred.
- To minimize the chance of damaging transceivers when installing them, slide them gently into their switch slots and never force them all the way into the slots. If the transceiver stops part way into the slot, it might be upside down and you should remove the transceiver before turning it over and reinstalling it. If positioned correctly, the transceiver will slide all the way into the slot and click when fully installed.

Warning **Statement 1051—**Laser Radiation

Invisible laser radiation may be emitted from disconnected fibers or connectors. Do not stare into beams or view directly with optical instruments.

Warning **Statement 1053—**Class 1M Laser Radition

Class 1M laser radiation when open. Do not view directly with optical instruments.

Warning **Statement 1055—**Class I and Class 1M Laser

Class I (CDRH) and Class 1M (IEC) laser products.

Warning **Statement 1056—**Unterminated Fiber Cable

Invisible laser radiation may be emitted from the end of the unterminated fiber cable or connector. Do not view directly with optical instruments. Viewing the laser output with certain optical instruments (for example, eye loupes, magnifiers, and microscopes) within a distance of 100 mm may pose an eye hazard.

Maintaining Transceivers and Optical Cables

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 below 0.35 dB.

Consider the following maintenance guidelines:

- Transceivers are static sensitive. To prevent ESD damage, wear an ESD-preventative wrist strap that is connected to the grounded chassis.
- Do not remove and insert a transceiver more often than is necessary. Repeated removals and insertions can shorten its useful life.

- Keep all optical connections covered when not in use. Clean them before using to prevent dust from scratching the fiber-optic cable ends.
- Do not touch the ends of connectors. Touching the ends can leave fingerprints and cause other contamination.
- Clean the connectors regularly; the required frequency of cleaning depends upon the environment. In addition, clean connectors if they are exposed to dust or accidentally touched. Both wet and dry cleaning techniques can be effective; refer to your site's fiber-optic connection cleaning procedures.
- Inspect routinely for dust and damage. If you suspect damage, clean and then inspect fiber ends under a microscope to determine if damage has occurred.