

Oracle® InfiniBand Switch IS2-46 Installation Guide

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Using This Documentation

- **Overview** – Describes how to prepare for and install the Oracle InfiniBand Switch IS2-46.
- **Audience** – Installers, technicians, system administrators, and authorized service providers.
- **Required knowledge** – Advanced experience installing network hardware.

Product Documentation Library

Documentation and resources for this product and related products are available at <http://www.oracle.com/goto/is2-46/docs>.

Feedback

Provide feedback about this documentation at <http://www.oracle.com/goto/docfeedback>.

Understanding the Switch

These topics describe the switch and the installation process.

- [“Installation Task Overview” on page 11](#)
- [“Switch Overview” on page 13](#)
- [“Front Panel Components” on page 14](#)
- [“Rear Panel Components” on page 15](#)

Related Information

- [“Confirming Specifications” on page 17](#)
- [“Preparing for Installation” on page 23](#)
- [“Installing the Switch” on page 29](#)
- [“Connecting Cables” on page 49](#)
- [“Powering On the Switch” on page 67](#)
- [“Verifying Functionality” on page 87](#)

Installation Task Overview

A full-time SER MGT connection is where there is a persistent serial connection to the SER MGT port, and it is used for switch administration. A temporary SER MGT connection is where the SER MGT port is used only for switch installation and configuration of network management. Thereafter, network management is used for switch administration. The installation task overview accommodates both connection types and identifies any deviations from the installation sequence.

Step	Description	Links
1.	Familiarize yourself with the front and rear of the switch.	<ul style="list-style-type: none">■ “Front Panel Components” on page 14■ “Rear Panel Components” on page 15
2.	Confirm supplied power and environmental factors.	<ul style="list-style-type: none">■ “Physical Specifications” on page 17■ “Electrical Specifications” on page 18■ “Environmental Specifications” on page 18

Step	Description	Links
3.	Understand air flow characteristics and rack cautions.	<ul style="list-style-type: none"> ■ “Airflow Precautions” on page 19 ■ “Rack Compatibility” on page 20 ■ “Rack Precautions” on page 20
4.	Verify shipped components and accessories.	<ul style="list-style-type: none"> ■ “Shipping Kit” on page 24
5.	Record the MAC IDs.	<ul style="list-style-type: none"> ■ “Record the MAC IDs” on page 25
6.	If DHCP is to assign specific IP addresses to the SP and SCP, configure the DHCP server.	<ul style="list-style-type: none"> ■ “Assign IP Addresses to the SP and SCP Through DHCP” on page 26
7.	Heed handling and ESD precautions.	<ul style="list-style-type: none"> ■ “Handling Precautions” on page 26 ■ “ESD Precautions” on page 27
8.	Gather appropriate tools.	<ul style="list-style-type: none"> ■ “Installation Tools” on page 27
9.	Install the switch into the rack.	<ul style="list-style-type: none"> ■ “Installing the Switch” on page 29
10.	Understand cable requirements and precautions.	<ul style="list-style-type: none"> ■ “Cable Requirements” on page 49 ■ “Standard MT and PrizmMT Cables” on page 50 ■ “Cable Precautions” on page 52
11.	If necessary, assemble the optical data cables.	<ul style="list-style-type: none"> ■ “Assemble the SFP+ Cables” on page 54
12.	Route the data cables.	<ul style="list-style-type: none"> ■ “Route the Cables” on page 56
13.	Connect data cables and secure them to the cable management bracket (CMB).	<ul style="list-style-type: none"> ■ “Connect the RJ-45 Ethernet Cables” on page 57 ■ “Connect the PrizmMT Cables” on page 58 ■ “Connect the SFP+ Cables” on page 60 ■ “Secure Cables to the CMB” on page 62
14.	Retrieve the power cords and SER MGT cable.	<ul style="list-style-type: none"> ■ “Retrieve the Power Cords and SER MGT Cable” on page 67
15.	Connect the serial management device.	<ul style="list-style-type: none"> ■ “Connect the SER MGT Cable” on page 71 ■ “Connect a Serial Management Device to the SER MGT Port” on page 74
16.	Connect power cords.	<ul style="list-style-type: none"> ■ “Connect the Power Cords” on page 74
17.	If you have a full-time SER MGT connection, install the air duct. If you have a temporary SER MGT connection, instead go to Step 15.	<ul style="list-style-type: none"> ■ “Install the Air Duct Assembly” on page 76
18.	Power on the switch.	<ul style="list-style-type: none"> ■ “Power On the Switch” on page 78
19.	Log in to the service processor (SP).	<ul style="list-style-type: none"> ■ “Log In to the SP (SER MGT)” on page 79 ■ “Assign a Static IP Address to the SP” on page 80 ■ “Assign a Static IP Address to the SCP” on page 82 ■ “Log In to the SP (Network Management)” on page 84
20.	If you have a temporary SER MGT connection, install the air duct.	<ul style="list-style-type: none"> ■ “Install the Air Duct Assembly” on page 76
21.	Verify switch functionality.	<ul style="list-style-type: none"> ■ “Verify LED Status” on page 87 ■ “Verify That the Switch Is Operational” on page 89 ■ “Verify Connectivity” on page 91
22.	Administer the switch.	<ul style="list-style-type: none"> ■ “Log In to the Oracle Fabric Manager Interface” on page 94 ■ “Log In to the Oracle Fabric OS Interface” on page 96 ■ “Run the Oracle Fabric OS Configuration Wizard” on page 97

Related Information

- [“Switch Overview” on page 13](#)
- [“Front Panel Components” on page 14](#)
- [“Rear Panel Components” on page 15](#)

Switch Overview



The switch is a complete access switching and I/O platform that consolidates and virtualizes the switching infrastructure for server and storage systems deployed in high-performance enterprise clouds.

The switch features up to 38 4x IB ports supporting EDR speeds. Additionally, 10 10GbE ports and 24 1GBASE-T ports provide both network and gateway capabilities.

Separate, dedicated, and optimized on-board SP, ABD, and SCP manage chassis functionality, Ethernet traffic, and IB fabric respectively, through user-friendly CLIs and GUIs.

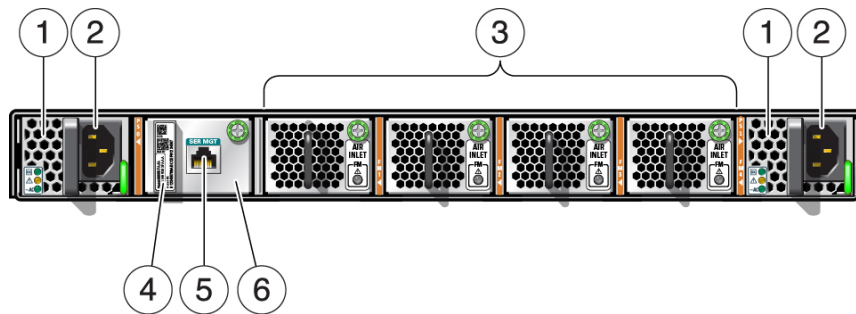
The switch ships preconfigured for network management through DHCP. However, the procedures in this document are serial management focused, with instructions to configure static IP addresses.

Related Information

- [“Installation Task Overview” on page 11](#)
- [“Front Panel Components” on page 14](#)
- [“Rear Panel Components” on page 15](#)

Front Panel Components

The front panel is the fan and power supply end of the switch. This end of the switch is installed to the cold aisle.



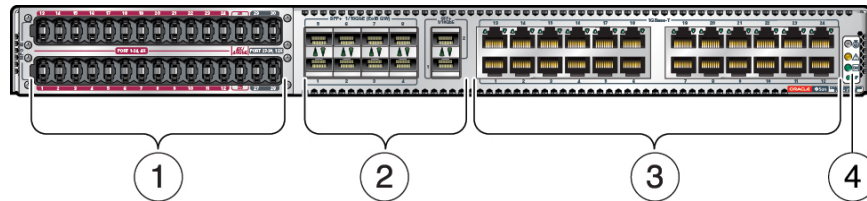
No.	Description
1	Power supplies
2	Power cord receptacles
3	Fan modules
4	RFID tag
5	SER MGT port
6	SER MGT module (SMM), with battery inside

Related Information

- [“Installation Task Overview” on page 11](#)
- [“Switch Overview” on page 13](#)
- [“Rear Panel Components” on page 15](#)

Rear Panel Components

The rear panel is the data cable connection end of the switch. This end of the switch is installed to the hot aisle.



No.	Description
1	PrizmMT connectors: <ul style="list-style-type: none"> ■ Ports 1 to 24 – IB 4x (magenta housing) ■ Ports 25 and 26 – Either IB 4x or 10GbE (magenta housing) ■ Ports 27 to 30 – IB 12x (black housing)
2	SFP+ connectors <ul style="list-style-type: none"> ■ Ports 1 to 8 (left) – 10GbE Ethernet overlay network (IB switch chip) ■ Ports 1 and 2 (right) – 10GbE network management uplinks (Ethernet switch chip) <p>Note - The two right-most connectors, labeled 1 and 2, can also be used for network management.</p>
3	RJ-45 connectors – Any one of these connectors can be used for network management.
4	Chassis status LEDs

Related Information

- [“Installation Task Overview” on page 11](#)
- [“Switch Overview” on page 13](#)
- [“Front Panel Components” on page 14](#)

Confirming Specifications

These topics describe the specifications of the switch and related precautions for installation.

- [“Physical Specifications” on page 17](#)
- [“Electrical Specifications” on page 18](#)
- [“Environmental Specifications” on page 18](#)
- [“Airflow Precautions” on page 19](#)
- [“Rack Compatibility” on page 20](#)
- [“Rack Precautions” on page 20](#)

Related Information

- [“Understanding the Switch” on page 11](#)
- [“Preparing for Installation” on page 23](#)
- [“Installing the Switch” on page 29](#)
- [“Connecting Cables” on page 49](#)
- [“Powering On the Switch” on page 67](#)
- [“Verifying Functionality” on page 87](#)

Physical Specifications

Dimension	Metric	U.S.
RU	1	1
Width	445.0 mm	17.52 in.
Depth	609.6 mm	24 in.
Height	44.5 mm	1.75 in.
Weight	11.4 kg	23.0 lbs

Related Information

- [“Electrical Specifications” on page 18](#)

- [“Environmental Specifications” on page 18](#)
- [“Airflow Precautions” on page 19](#)
- [“Rack Compatibility” on page 20](#)
- [“Rack Precautions” on page 20](#)

Electrical Specifications

Parameter	AC Requirement
Voltage	100 VAC to 240 VAC single phase, 47 to 63 Hz
Current (per input)	5.4A maximum per input at 100 VAC
Current (total)	5.6A maximum total for all inputs at 100 VAC
Power	550W (Total input power is approximately equally divided among the operating power supplies.)

Related Information

- [“Physical Specifications” on page 17](#)
- [“Environmental Specifications” on page 18](#)
- [“Airflow Precautions” on page 19](#)
- [“Rack Compatibility” on page 20](#)
- [“Rack Precautions” on page 20](#)

Environmental Specifications

Parameter	Metric Operating	U.S. Operating
Temperature	5°C to 35°C	41°F to 95°F
Humidity	5% to 85% noncondensing, 27°C maximum wet bulb	5% to 85% noncondensing, 80°F maximum wet bulb
Elevation (Oracle requirement)	Maximum 3000 meters at 40°C	Maximum 9840 feet at 104°F

Related Information

- [“Physical Specifications” on page 17](#)
- [“Electrical Specifications” on page 18](#)

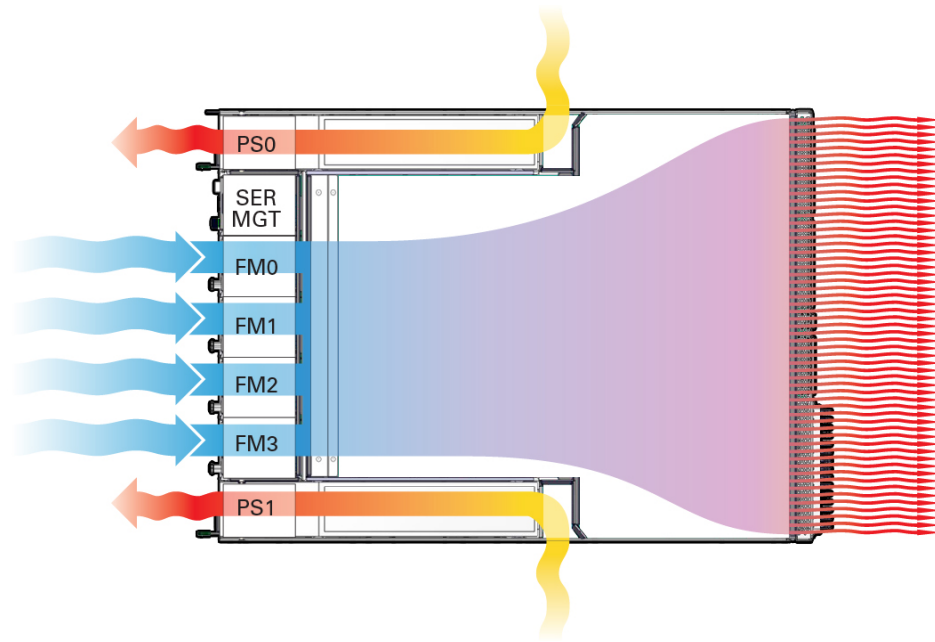
- “Airflow Precautions” on page 19
- “Rack Compatibility” on page 20
- “Rack Precautions” on page 20

Airflow Precautions



Caution - Proper airflow is essential for keeping the switch's internal temperatures within a safe operating range.

Air flows from the front (fan end) of the switch to the rear (connector end) of the switch. Air flows through the power supplies from the sides of the switch to out the front.



Follow these guidelines to ensure unrestricted airflow in the switch:

- Install the switch so that the front faces the cool aisle and the rear faces the warm aisle.
- Do not direct warm air into the switch.
- Prevent recirculation of air within a rack or cabinet.
- After servicing the switch, ensure that the air duct assembly is properly installed.
- Route cables so that they do not interfere with airflow.

- Install the air duct assembly at the front of the switch.

Related Information

- [“Physical Specifications” on page 17](#)
- [“Electrical Specifications” on page 18](#)
- [“Environmental Specifications” on page 18](#)
- [“Rack Compatibility” on page 20](#)
- [“Rack Precautions” on page 20](#)

Rack Compatibility

This switch and rackmounting hardware is designed for installation into a Sun Rack II or compatible rack or cabinet. The switch has a shorter form factor than Oracle rackmounted computing products. There is a gap between the rack front door and the switch front panel. To aid in proper airflow management and minimize air recirculation within the rack, install the air duct assembly at the front of the switch.

Related Information

- [“Physical Specifications” on page 17](#)
- [“Electrical Specifications” on page 18](#)
- [“Environmental Specifications” on page 18](#)
- [“Airflow Precautions” on page 19](#)
- [“Rack Precautions” on page 20](#)

Rack Precautions



Caution - Equipment Loading. Always load equipment into a rack from the bottom to the top so that the rack does not become top heavy and tip over. Deploy your rack's antitilt legs to prevent the rack from tipping during equipment installation.



Caution - Elevated Operating Ambient Temperature. If the switch is installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment might be greater than the room ambient temperature. Therefore, install the equipment only in an environment compatible with the Tma specified for the switch.



Caution - Reduced Air Flow. Install the equipment in a rack so that the amount of air flow is adequate for the safe operation of the equipment.



Caution - Mechanical Loading. Mount the equipment in the rack so that the weight is distributed evenly. A hazardous condition can exist with uneven mechanical loading.



Caution - Circuit Overloading. Do not overload the power supply circuits. Before connecting the switch to the supply circuit, review the equipment nameplate power ratings and consider the effect that circuit overloading might have on overcurrent protection and supply wiring.



Caution - Reliable Grounding. Maintain reliable grounding of rackmounted equipment. Give particular attention to supply connections other than direct connections to the branch circuit (for example, use of power strips).



Caution - Do not use rack mounted equipment as a shelf or a work space.

Related Information

- [“Physical Specifications” on page 17](#)
- [“Electrical Specifications” on page 18](#)
- [“Environmental Specifications” on page 18](#)
- [“Airflow Precautions” on page 19](#)
- [“Rack Compatibility” on page 20](#)

Preparing for Installation

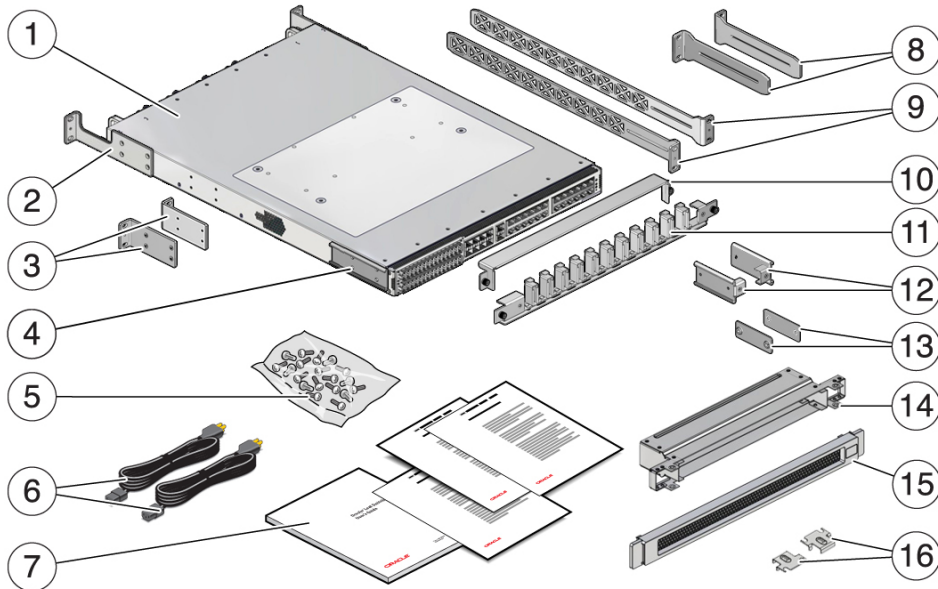
These topics provide information to prepare for the switch installation process.

- [“Shipping Kit” on page 24](#)
- [“Record the MAC IDs” on page 25](#)
- [“Assign IP Addresses to the SP and SCP Through DHCP” on page 26](#)
- [“Handling Precautions” on page 26](#)
- [“ESD Precautions” on page 27](#)
- [“Installation Tools” on page 27](#)

Related Information

- [“Understanding the Switch” on page 11](#)
- [“Confirming Specifications” on page 17](#)
- [“Installing the Switch” on page 29](#)
- [“Connecting Cables” on page 49](#)
- [“Powering On the Switch” on page 67](#)
- [“Verifying Functionality” on page 87](#)

Shipping Kit



No.	Description
1	Switch
2	Front mounting brackets, long (shown mounted)
3	Front mounting brackets, short
4	C-channel brackets (shown mounted)
5	Fasteners
6	Power cords
7	Documentation
8	Cable management extenders
9	Long rails
10	Cable management cover
11	Cable management bracket (CMB)
12	Attachment brackets
13	Attachment plates
14	Air duct
15	Cover
16	Snap brackets

Related Information

- [“Record the MAC IDs” on page 25](#)
- [“Assign IP Addresses to the SP and SCP Through DHCP” on page 26](#)
- [“Handling Precautions” on page 26](#)
- [“ESD Precautions” on page 27](#)
- [“Installation Tools” on page 27](#)

▼ Record the MAC IDs

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**
See [“Installation Task Overview” on page 11](#).
2. **Remove the Customer Information sheet from the outside of the shipping carton.**
3. **On the Customer Information sheet, find the switch serial number.**
4. **Record the serial number to a document intended for this purpose.**
5. **In the Network Interfaces table of the sheet, find the primary MAC ID.**
This is the MAC ID of the SP within the switch.
6. **Record the SP MAC ID to the document.**
7. **In the Network Interfaces table of the sheet, find the secondary MAC ID.**
This is the MAC ID of the SCP within the switch.
8. **Record the SCP MAC ID to the document.**
9. **Secure the Customer Information sheet in a safe place.**
10. **Consider your next steps.**
 - **If you will assign IP addresses to the SP and SCP through DHCP, configure your DHCP server now.**
See [“Assign IP Addresses to the SP and SCP Through DHCP” on page 26](#).
 - **If you will assign static IP addresses to the SP and SCP through the SER MGT port, go to [“Handling Precautions” on page 26](#).**

Related Information

- [“Shipping Kit” on page 24](#)
- [“Assign IP Addresses to the SP and SCP Through DHCP” on page 26](#)
- [“Handling Precautions” on page 26](#)
- [“ESD Precautions” on page 27](#)
- [“Installation Tools” on page 27](#)

▼ Assign IP Addresses to the SP and SCP Through DHCP

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**
See [“Installation Task Overview” on page 11](#).
2. **Log in to the DHCP server and configure it to assign a predetermined IP address and host name for the SP MAC ID you recorded.**
Record this IP address and host name for future reference.
3. **Configure the DHCP server to assign a predetermined IP address and host name for the SCP MAC ID you recorded.**
Record this IP address and host name for future reference.
When the switch is connected to the management network and powered on, the SP and SCP will receive the predetermined IP addresses.
4. **Continue the installation.**
See [“Handling Precautions” on page 26](#).

Related Information

- [“Shipping Kit” on page 24](#)
- [“Record the MAC IDs” on page 25](#)
- [“Handling Precautions” on page 26](#)
- [“ESD Precautions” on page 27](#)
- [“Installation Tools” on page 27](#)

Handling Precautions



Caution - Deploy the antitilt legs on the equipment rack before beginning an installation.



Caution - Two people are required to lift and mount this switch into a rack when performing the tasks in this document.



Caution - When performing a two-person task, always communicate your intentions clearly before, during, and after each step to minimize confusion.

Related Information

- [“Shipping Kit” on page 24](#)
- [“Record the MAC IDs” on page 25](#)
- [“Assign IP Addresses to the SP and SCP Through DHCP” on page 26](#)
- [“ESD Precautions” on page 27](#)
- [“Installation Tools” on page 27](#)

ESD Precautions

When installing the switch chassis, follow antistatic precautions:

- Use an antistatic mat as a work surface.
- Wear an antistatic wrist strap that is attached to either the mat or a metal portion of the switch chassis.

Related Information

- [“Shipping Kit” on page 24](#)
- [“Record the MAC IDs” on page 25](#)
- [“Assign IP Addresses to the SP and SCP Through DHCP” on page 26](#)
- [“Handling Precautions” on page 26](#)
- [“Installation Tools” on page 27](#)

Installation Tools

These tools are necessary or beneficial for installing the switch:

- Antistatic wrist strap
- No. 2 Philips screwdriver

- No. 1 Philips screwdriver
- Cage nut installation tool or flat-blade screwdriver
- Serial terminal device and necessary cabling
- Masking tape
- Paper clip
- PrizmMT ferrule cleaner - USConec part number 16899
- Antistatic mat
- Flashlight
- Gloves

Related Information

- [“Shipping Kit” on page 24](#)
- [“Record the MAC IDs” on page 25](#)
- [“Assign IP Addresses to the SP and SCP Through DHCP” on page 26](#)
- [“Handling Precautions” on page 26](#)
- [“ESD Precautions” on page 27](#)

Installing the Switch

Perform these tasks in the order presented to install the switch.

- [“Stabilize the Rack” on page 29](#)
- [“Install the Switch Brackets” on page 30](#)
- [“Assemble the Cable Management Extenders” on page 32](#)
- [“Prepare the Air Duct Assembly” on page 33](#)
- [“Install the Cage Nuts” on page 35](#)
- [“Install the Rackmount Hardware” on page 37](#)
- [“Route the Power Cords” on page 38](#)
- [“Route the SER MGT Cable” on page 39](#)
- [“Install the Switch” on page 40](#)
- [“Install the CMB” on page 45](#)

Related Information

- [“Understanding the Switch” on page 11](#)
- [“Confirming Specifications” on page 17](#)
- [“Preparing for Installation” on page 23](#)
- [“Connecting Cables” on page 49](#)
- [“Powering On the Switch” on page 67](#)
- [“Verifying Functionality” on page 87](#)

▼ Stabilize the Rack



Caution - To reduce the risk of personal injury, stabilize the rack and extend all antitilt devices before installing the switch.

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**

See [“Installation Task Overview”](#) on page 11.

2. **Open and remove the front and rear doors from the rack.**
3. **If there are leveling feet beneath the rack to prevent it from rolling, extend these leveling feet fully downward to the floor.**
4. **Fully extend the rack's antitilt legs or antitilt bar, which are located at the bottom front of the rack.**
5. **Install the mounting brackets on the switch.**

See [“Install the Switch Brackets”](#) on page 30.

Related Information

- [“Install the Switch Brackets”](#) on page 30
- [“Assemble the Cable Management Extenders”](#) on page 32
- [“Prepare the Air Duct Assembly”](#) on page 33
- [“Install the Cage Nuts”](#) on page 35
- [“Install the Rackmount Hardware”](#) on page 37
- [“Route the Power Cords”](#) on page 38
- [“Route the SER MGT Cable”](#) on page 39
- [“Install the Switch”](#) on page 40
- [“Install the CMB”](#) on page 45

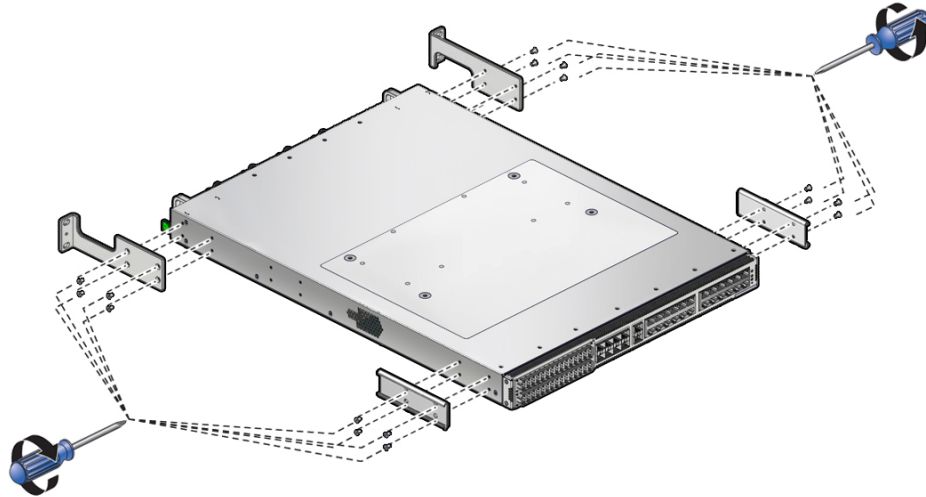
▼ Install the Switch Brackets

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**

See [“Installation Task Overview”](#) on page 11.

2. **Using a No. 1 Philips screwdriver, attach the long front brackets (with cutouts) to the front of the switch with four M3x6 flathead screws on each side.**

The flange of the long front mounting brackets points away from the switch.



- 3. Attach the C-channel brackets to the switch with four M3x6 flathead screws on each side.**

The edge of each C-channel bracket is flush to the rear of the chassis.

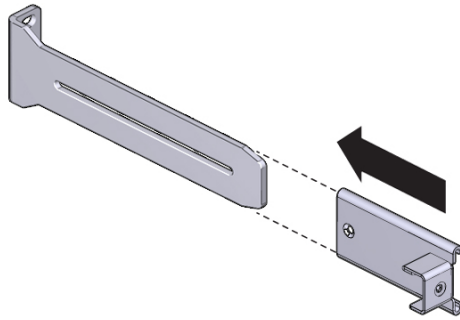
- 4. Assemble the cable management extenders.**
See [“Assemble the Cable Management Extenders” on page 32.](#)

Related Information

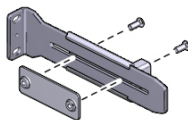
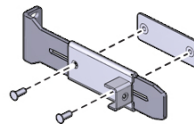
- [“Stabilize the Rack” on page 29](#)
- [“Assemble the Cable Management Extenders” on page 32](#)
- [“Prepare the Air Duct Assembly” on page 33](#)
- [“Install the Cage Nuts” on page 35](#)
- [“Install the Rackmount Hardware” on page 37](#)
- [“Route the Power Cords” on page 38](#)
- [“Route the SER MGT Cable” on page 39](#)
- [“Install the Switch” on page 40](#)
- [“Install the CMB” on page 45](#)

▼ Assemble the Cable Management Extenders

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**
See [“Installation Task Overview”](#) on page 11.
2. **Slide the attachment bracket over the extender, so that the tab on the bracket is opposite the flange on the extender.**
The open end of the tab is toward the flange. The flat end of the tab is toward the rear of the extender.



3. **Place the attachment plate on the flange side of the extender, opposite the attachment bracket.**
4. **Use two M4x10 flathead screws to sandwich the attachment bracket and plate to the extender, in the position farthest from the flange.**



5. **Using a No. 1 Phillips screwdriver, tighten the two screws.**

6. Repeat [Step 2](#) through [Step 5](#) for the other cable management extender.
7. Prepare the air duct assembly.
See [“Prepare the Air Duct Assembly”](#) on page 33.

Related Information

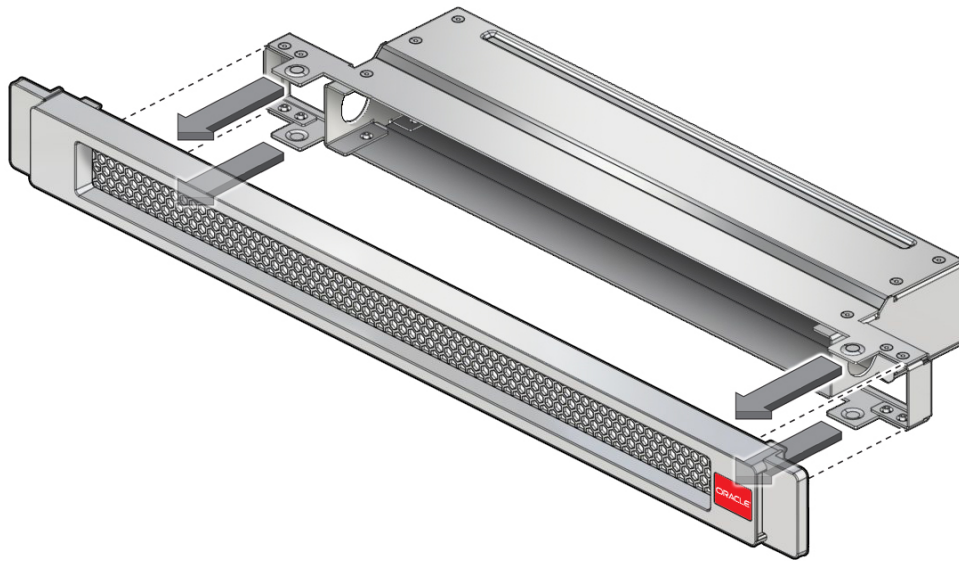
- [“Stabilize the Rack”](#) on page 29
- [“Install the Switch Brackets”](#) on page 30
- [“Prepare the Air Duct Assembly”](#) on page 33
- [“Install the Cage Nuts”](#) on page 35
- [“Install the Rackmount Hardware”](#) on page 37
- [“Route the Power Cords”](#) on page 38
- [“Route the SER MGT Cable”](#) on page 39
- [“Install the Switch”](#) on page 40
- [“Install the CMB”](#) on page 45

▼ Prepare the Air Duct Assembly

Note - Both the cover and air duct are symmetrical, and have no defined top or bottom. If the cover has a logo, that logo goes to the right.

1. Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.
See [“Installation Task Overview”](#) on page 11.

2. **Align the large opening of the air duct with the mesh on the back side of the cover.**



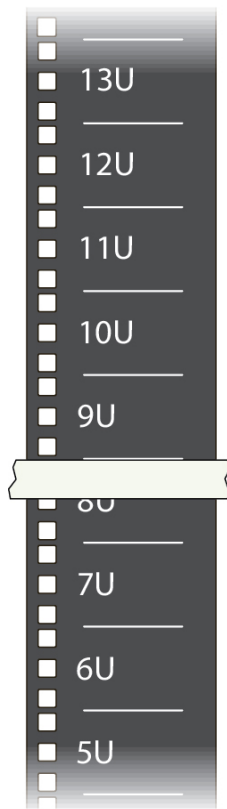
3. **Press the air duct into the cover, to make a firm friction fit.**
4. **Install the cage nuts into the rack.**
See [“Install the Cage Nuts” on page 35.](#)

Related Information

- [“Stabilize the Rack” on page 29](#)
- [“Install the Switch Brackets” on page 30](#)
- [“Assemble the Cable Management Extenders” on page 32](#)
- [“Install the Cage Nuts” on page 35](#)
- [“Install the Rackmount Hardware” on page 37](#)
- [“Route the Power Cords” on page 38](#)
- [“Route the SER MGT Cable” on page 39](#)
- [“Install the Switch” on page 40](#)
- [“Install the CMB” on page 45](#)

▼ Install the Cage Nuts

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**
See [“Installation Task Overview”](#) on page 11.
2. **Determine where you are installing the switch.**
3. **Mark this location on each rack post with masking tape.**



Counting the number of rack units from the bottom of the rack to the mounting location assists you when marking the other rack posts.

4. **Install eight cage nuts into the rack, two cage nuts for each rack post.**

Note - Each RU mounting location on the rack post has three square holes. For installing the switch, there is no need for a cage nut in the center hole.

- a. **Orient the cage nut to the square hole with the flanges to the right and left.**
- b. **Insert the outer flange into the square hole.**



- c. **Using the cage nut installation tool or flat-blade screwdriver as a guide, catch the inner flange and pry it into the square hole.**
 - d. **Pull the cage nut installation tool or flat blade screwdriver from the flange.**
 - e. **Repeat [Step 4a](#) to [Step 4d](#) for each cage nut.**
5. **Install the rackmount hardware.**
See [“Install the Rackmount Hardware”](#) on page 37.

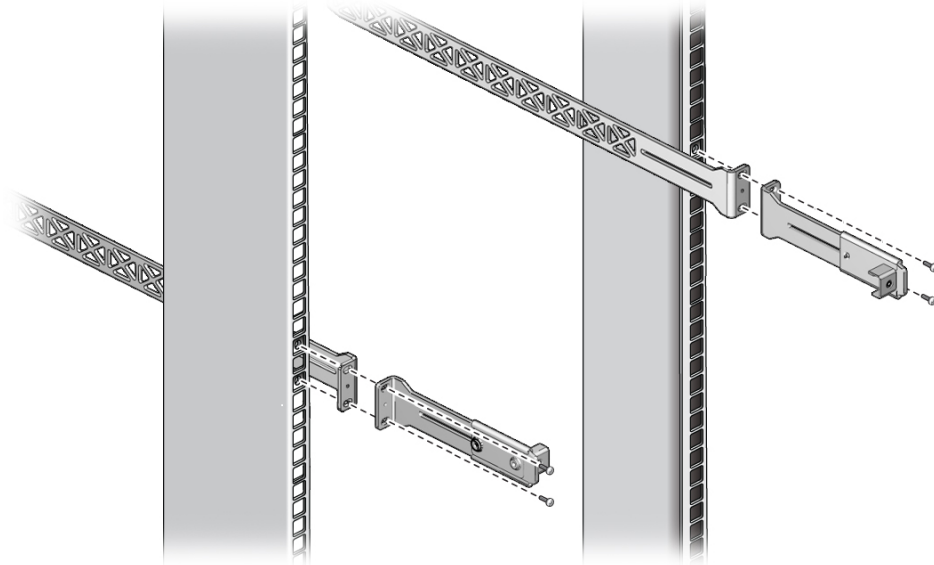
Related Information

- [“Stabilize the Rack”](#) on page 29
- [“Install the Switch Brackets”](#) on page 30
- [“Assemble the Cable Management Extenders”](#) on page 32
- [“Prepare the Air Duct Assembly”](#) on page 33
- [“Install the Rackmount Hardware”](#) on page 37

- [“Route the Power Cords”](#) on page 38
- [“Route the SER MGT Cable”](#) on page 39
- [“Install the Switch”](#) on page 40
- [“Install the CMB”](#) on page 45

▼ Install the Rackmount Hardware

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**
See [“Installation Task Overview”](#) on page 11.
2. **Place the long rail at the mounting location on the post at the rear of the rack.**
3. **Butt the flange of the cable management extender against the flange of the long rail.**



4. **Using a No. 2 Philips screwdriver, secure the assembly to the post with two M6x12 screws.**
5. **Repeat [Step 2](#) through [Step 4](#) for the other cable management extender and long rail.**

6. Route the power cords.

See [“Route the Power Cords”](#) on page 38.

Related Information

- [“Stabilize the Rack”](#) on page 29
- [“Install the Switch Brackets”](#) on page 30
- [“Assemble the Cable Management Extenders”](#) on page 32
- [“Prepare the Air Duct Assembly”](#) on page 33
- [“Install the Cage Nuts”](#) on page 35
- [“Route the Power Cords”](#) on page 38
- [“Route the SER MGT Cable”](#) on page 39
- [“Install the Switch”](#) on page 40
- [“Install the CMB”](#) on page 45

▼ **Route the Power Cords**

The facility power receptacles for the power cords should be located such that the power cords are routed out of the way.

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**
See [“Installation Task Overview”](#) on page 11.
2. **Route the female end of the power cords up from the power distribution panel or receptacles at the rear of the rack.**
3. **Route the cords across the rack ceiling to the front of the rack.**
4. **Route the cords down through the vertical support, so that the female end rests at the location where the switch will install.**
5. **Add about 3 inches of slack to enable connection and disconnection with the switch power supply receptacles.**
6. **Secure the power cord to this vertical length, so that it does not drop any farther.**
Use hook and loop fastener straps to bundle and secure the cords.
7. **Consider your next task.**
 - **If you will have a full-time SER MGT connection, route the SER MGT cable.**
See [“Route the SER MGT Cable”](#) on page 39.

- **If the SER MGT connection is only temporary for installation, install the switch now.**

See [“Install the Switch” on page 40](#).

Related Information

- [“Stabilize the Rack” on page 29](#)
- [“Install the Switch Brackets” on page 30](#)
- [“Assemble the Cable Management Extenders” on page 32](#)
- [“Prepare the Air Duct Assembly” on page 33](#)
- [“Install the Cage Nuts” on page 35](#)
- [“Install the Rackmount Hardware” on page 37](#)
- [“Route the SER MGT Cable” on page 39](#)
- [“Install the Switch” on page 40](#)
- [“Install the CMB” on page 45](#)

▼ Route the SER MGT Cable

If there is to be a full-time connection of the SER MGT cable, such as to a terminal server, follow this task to route the cable.

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**
See [“Installation Task Overview” on page 11](#).
2. **Route the SER MGT cable from its entry point at the rear of the rack up to the ceiling of the rack.**
3. **Route the SER MGT cable across the rack ceiling to the front of the rack.**
The SER MGT cable can run parallel to one of the power cords.
4. **Route the SER MGT cable down through the vertical support, so that the end rests at the location where you are installing the switch.**
5. **Add slack to the SER MGT cable to enable connection and disconnection with the SER MGT port.**
 - **If the SER MGT cable is on the left side of the rack, add 12 inches of slack.**
 - **If the SER MGT cable is on the right side of the rack, add 24 inches of slack.**

- 6. Secure the SER MGT cable to this vertical length, so that it does not drop any farther.**

Use hook and loop fastener straps to bundle and secure the SER MGT cable.

- 7. Install the switch.**

See [“Install the Switch” on page 40](#).

Related Information

- [“Stabilize the Rack” on page 29](#)
- [“Install the Switch Brackets” on page 30](#)
- [“Assemble the Cable Management Extenders” on page 32](#)
- [“Prepare the Air Duct Assembly” on page 33](#)
- [“Install the Cage Nuts” on page 35](#)
- [“Install the Rackmount Hardware” on page 37](#)
- [“Route the Power Cords” on page 38](#)
- [“Install the Switch” on page 40](#)
- [“Install the CMB” on page 45](#)

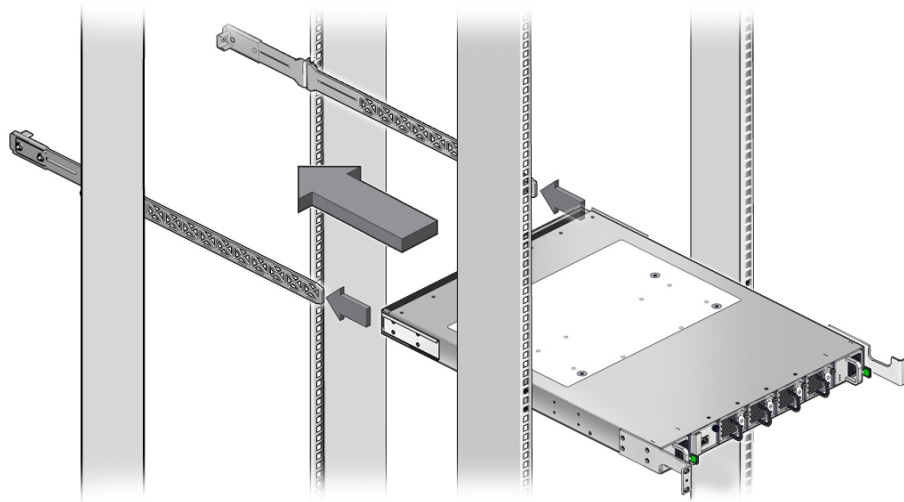
▼ Install the Switch

- 1. Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**

See [“Installation Task Overview” on page 11](#).

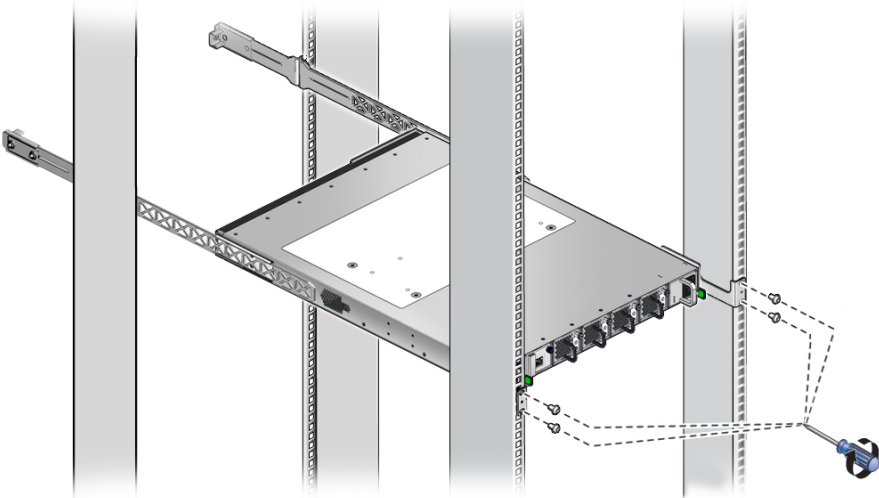
- 2. Carefully lift the switch and slide it into the rack, from the front rearward.**

Ensure that the ends of the long rails slide into the C-channel brackets at the rear of the switch chassis.

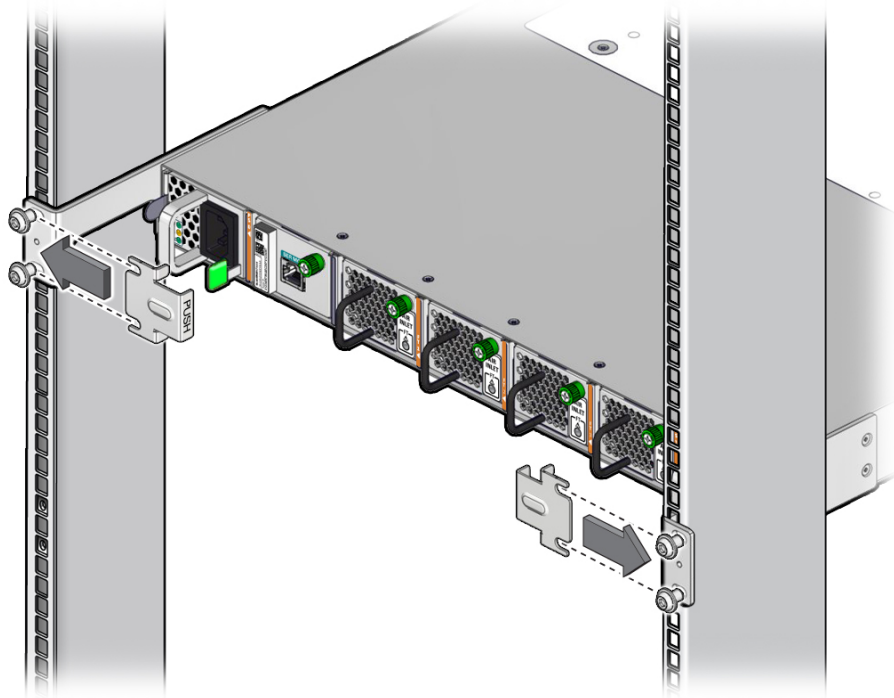


3. Using a No. 2 Philips screwdriver, hold the front of the switch chassis to the front rack posts with two M6x12 screws at each side.

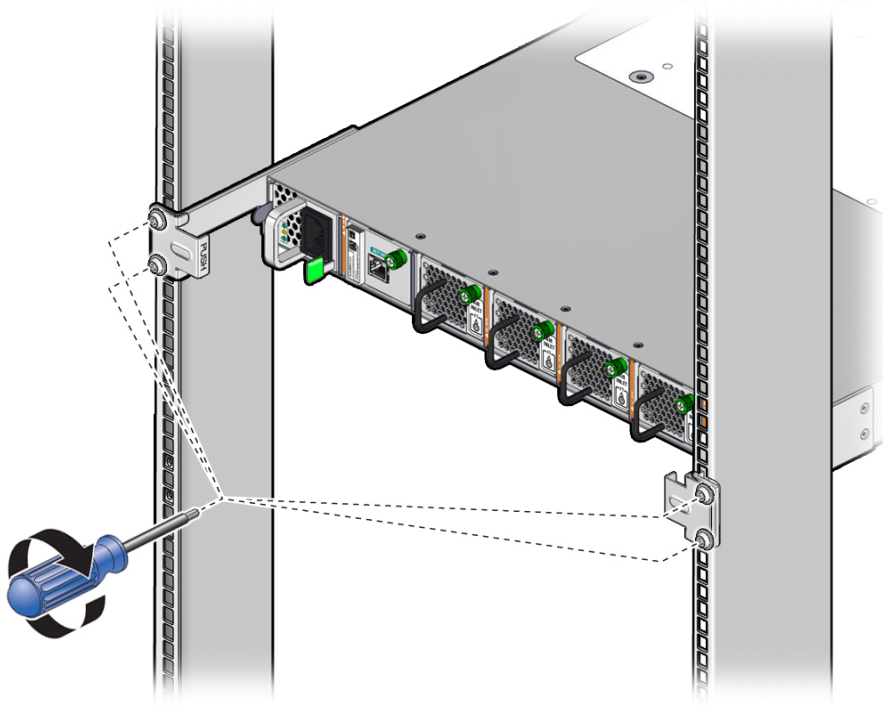
Note - Do not fully tighten the screws at this time.



4. Slide the snap bracket under the loose screws with the tabs pointing into the rack.



5. While pressing on the word **PUSH** embossed in the snap bracket, fully tighten the screws.



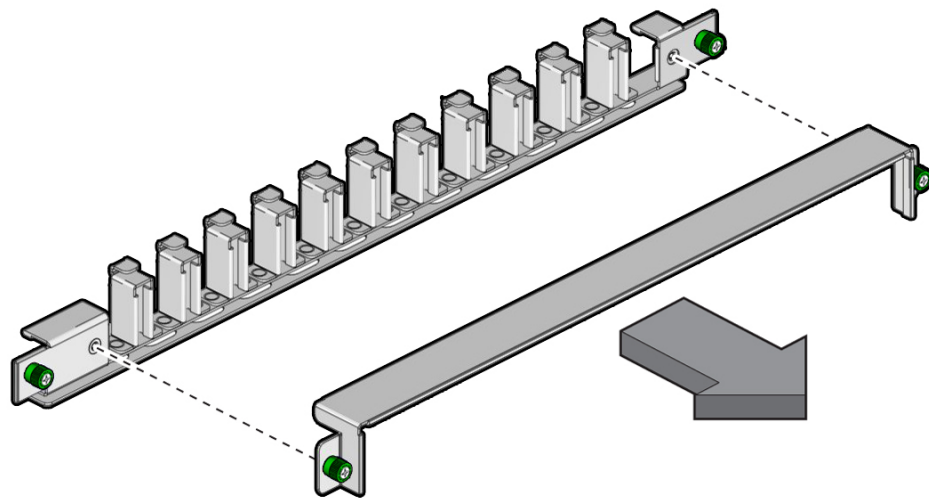
6. Repeat for the snap bracket on the other side.
7. Install the CMB.
See [“Install the CMB” on page 45](#).

Related Information

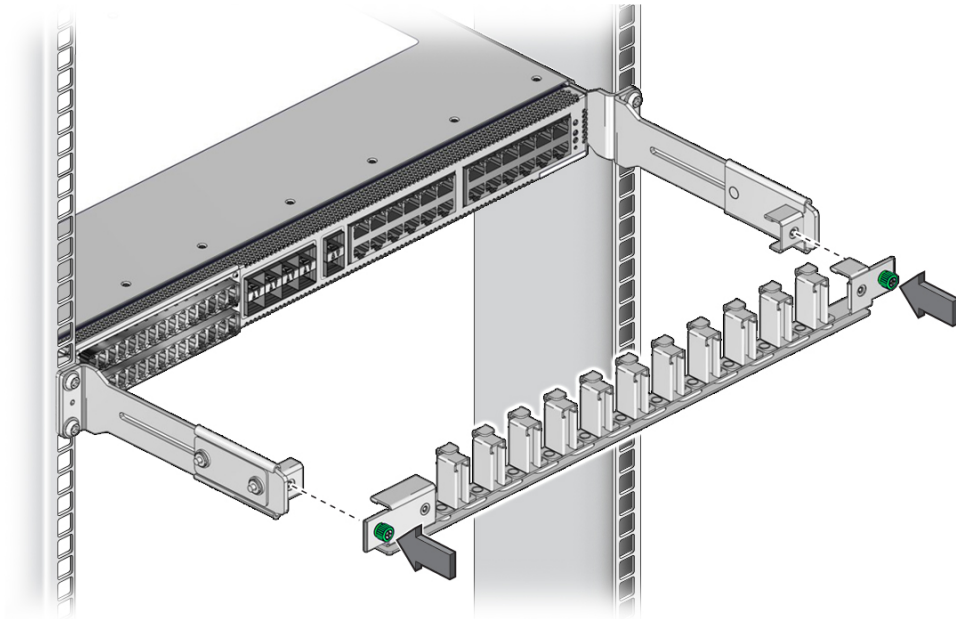
- [“Stabilize the Rack” on page 29](#)
- [“Install the Switch Brackets” on page 30](#)
- [“Assemble the Cable Management Extenders” on page 32](#)
- [“Prepare the Air Duct Assembly” on page 33](#)
- [“Install the Cage Nuts” on page 35](#)
- [“Install the Rackmount Hardware” on page 37](#)
- [“Route the Power Cords” on page 38](#)
- [“Route the SER MGT Cable” on page 39](#)
- [“Install the CMB” on page 45](#)

▼ Install the CMB

1. Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.
See [“Installation Task Overview”](#) on page 11.
2. If installed, loosen the two captive thumbscrews that secure the cover to the CMB and lift the cover off.



3. **Install the CMB to the tabs of the attachment brackets at the rear of the switch, tightening the thumbscrews on each side of the CMB.**



4. **Consider your next task.**

- **If your SFP+ optical cables must be assembled, do that now.**
See [“Assemble the SFP+ Cables”](#) on page 54.
- **If no cable assembly is required, route the cables to the switch.**
See [“Route the Cables”](#) on page 56.

Related Information

- [“Stabilize the Rack”](#) on page 29
- [“Install the Switch Brackets”](#) on page 30
- [“Assemble the Cable Management Extenders”](#) on page 32
- [“Prepare the Air Duct Assembly”](#) on page 33
- [“Install the Cage Nuts”](#) on page 35
- [“Install the Rackmount Hardware”](#) on page 37
- [“Route the Power Cords”](#) on page 38
- [“Route the SER MGT Cable”](#) on page 39

- [“Install the Switch” on page 40](#)

Connecting Cables

These topics provide cabling information and describe how to cable the switch.

Description	Links
Understand cable requirements.	“Cable Requirements” on page 49
Identify cable differences.	“Standard MT and PrizmMT Cables” on page 50
Heed cable precautions.	“Cable Precautions” on page 52
If necessary, assemble the optical data cables.	“Assemble the SFP+ Cables” on page 54
Route the data cables.	“Route the Cables” on page 56
Connect the data cables.	<ul style="list-style-type: none">■ “Connect the RJ-45 Ethernet Cables” on page 57■ “Connect the PrizmMT Cables” on page 58■ “Connect the SFP+ Cables” on page 60
Secure the cables to the CMB.	“Secure Cables to the CMB” on page 62

Related Information

- [“Understanding the Switch” on page 11](#)
- [“Confirming Specifications” on page 17](#)
- [“Preparing for Installation” on page 23](#)
- [“Installing the Switch” on page 29](#)
- [“Powering On the Switch” on page 67](#)
- [“Verifying Functionality” on page 87](#)

Cable Requirements

Minimal functionality of the switch requires this cabling:

- **Management console** – The management console is the physical medium that the administrator uses to interact with the SP. There are two ways of making this connection:
 - **Serial management** – A serial device, such as a TIP connection, a serial terminal, or a terminal server, is cabled to the SER MGT port on the front of the switch. An advantage of serial management with a dedicated serial terminal is that the connection is more

secure than through network management. Because of the nature of the serial signal, a serial management cable cannot be used reliably if it is more than 30 feet (9 meters) long.

- **Network Management** – Network management permits you to use your existing network to connect an SFP+ or RJ-45 cable to any connector on the rear of the switch. This is the preferred means of connecting to the SP, because it gives you the flexibility to use any host on the network to interact with the SP and the Oracle ILOM web interface. To improve security, a VLAN ID can be configured for the SP.
- **Power supplies** – Shipped with the switch are country-specific power cords to supply facility power to the switch from power distribution units inside of the rack.
- **RJ-45 Ethernet ports** – These 24 ports provide switched 1GBASE-T functionality through CAT 6 rated cabling.
- **SFP+ Ethernet ports** – These 10 ports provide switched 10GbE functionality with either copper cables or optical fiber.
- **PrizmMT ports** - These 30 ports provide switched 100 Gbps EDR IB functionality with special optical fiber cables.

Related Information

- [“Standard MT and PrizmMT Cables” on page 50](#)
- [“Cable Precautions” on page 52](#)
- [“Assemble the SFP+ Cables” on page 54](#)
- [“Route the Cables” on page 56](#)
- [“Connect the RJ-45 Ethernet Cables” on page 57](#)
- [“Connect the PrizmMT Cables” on page 58](#)
- [“Connect the SFP+ Cables” on page 60](#)
- [“Secure Cables to the CMB” on page 62](#)

Standard MT and PrizmMT Cables

While PrizmMT and standard MT optical fiber cables look similar, they are not. PrizmMT cables use clear plastic ferrules that have lenses to focus the laser light across the connection air gap. Standard MT cables rely upon physical contact of fiber tips at each connection.



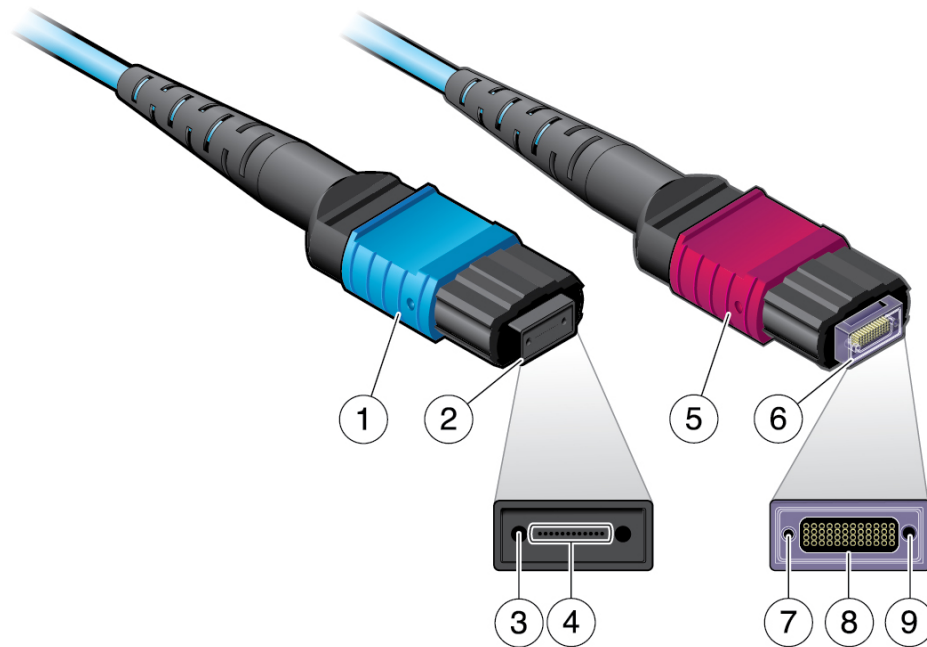
Caution - Connecting a PrizmMT cable to a standard MT receptacle, such as on a QSFP transceiver, will damage the PrizmMT ferrule and render the cable unusable.

To help discriminate between PrizmMT and standard MT cables, PrizmMT cables are identified with certain features. The features are ferrule, housing color, alignment method, and fiber spacing.

Technology	Ferrule	Housing Color	Alignment Method	Fiber Spacing
4x PrizmMT optical cable	PrizmMT (clear with lenses)	Magenta	Post and Hole	Wide
12x PrizmMT optical cable	PrizmMT (clear with lenses)	Black	Post and Hole	Wide
4x standard MT optical cable	Standard MT (black)	Aqua	Pin or Hole	Narrow
4x standard MT optical cable	Standard MT (black)	Black	Pin or Hole	Narrow

Note - Some supported cables have a PrizmMT connector on one end, and a standard MT connector on the other. Pay close attention when connecting this cable, to identify which connector is which, and not confuse the two.

Visually comparing the design of the two cables, note the differences between the standard MT cable on the left and the PrizmMT cable on the right.



No.	Description
1	Aqua colored housing (standard MT)
2	Standard ferrule (standard MT)
3	Alignment pin holes (standard MT)
4	Contact type optical fibers (standard MT)

No.	Description
5	Magenta colored housing (PrizmMT)
6	Prizm ferrule (PrizmMT)
7	Alignment post (PrizmMT)
8	Focused optical fiber array (PrizmMT)
9	Alignment hole (PrizmMT)

Related Information

- [“Cable Requirements” on page 49](#)
- [“Cable Precautions” on page 52](#)
- [“Assemble the SFP+ Cables” on page 54](#)
- [“Route the Cables” on page 56](#)
- [“Connect the RJ-45 Ethernet Cables” on page 57](#)
- [“Connect the PrizmMT Cables” on page 58](#)
- [“Connect the SFP+ Cables” on page 60](#)
- [“Secure Cables to the CMB” on page 62](#)

Cable Precautions

To prevent data cable damage, you *must* follow these cautions.



Do not uncoil the cable, as a kink might occur. Hold the coil closed as you unroll the cable, pausing to allow the cable to relax as it is unrolled.



Do not step on the cable or connectors. Plan cable paths away from foot traffic or rolling loads.



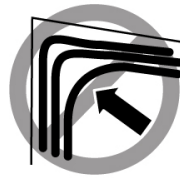
Do not pull the cable out of the shipping box, through any opening, or around any corners. Unroll the cable as you lay it down and move it through turns.



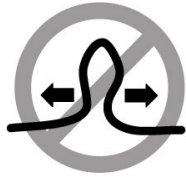
Do not bend the cables to a radius tighter than 85 mm (3.4 inches). Ensure that cable turns are as wide as possible.



Do not twist the cable to open a kink. If it is not severe, open the kink by unlooping the cable.



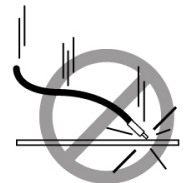
Do not pack the cable to fit a tight space. Use an alternative cable route.



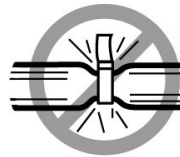
Do not straighten the cable to correct a bend that is too tight. Leave the cable bend as is.



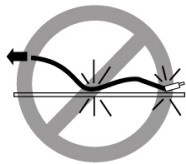
Do not hang the cable for a length more than 2 meters (7 feet). Minimize the hanging weight with intermediate retention points.



Do not drop the cable or connectors from any height. Gently set the cable down, resting the cable connectors on a stable surface.



Do not cinch the cable with hard fasteners or cable ties. Use soft hook-and-loop fastener for bundling and securing cables.



Do not drag the cable or its connectors over any surface. Carry the entire cable to and from the points of connection.



Do not force the cable connector into the receptacle by pushing on the cable. Apply connection or disconnection forces at the connector only.

Related Information

- [“Cable Requirements” on page 49](#)
- [“Standard MT and PrizmMT Cables” on page 50](#)
- [“Assemble the SFP+ Cables” on page 54](#)
- [“Route the Cables” on page 56](#)
- [“Connect the RJ-45 Ethernet Cables” on page 57](#)
- [“Connect the PrizmMT Cables” on page 58](#)
- [“Connect the SFP+ Cables” on page 60](#)
- [“Secure Cables to the CMB” on page 62](#)

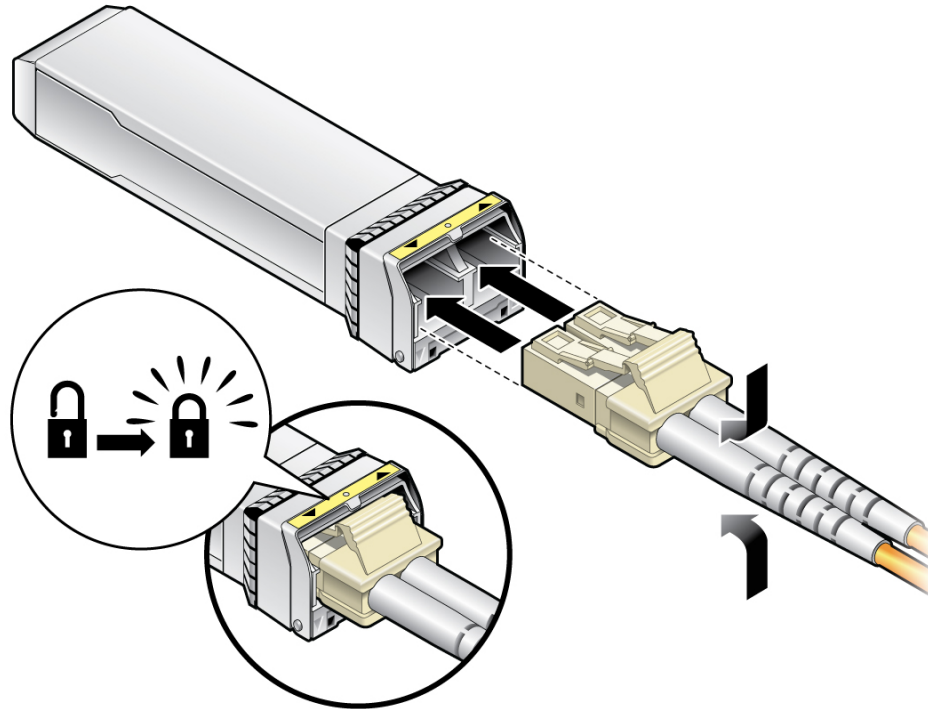
▼ Assemble the SFP+ Cables

If the optical SFP+ cables are unassembled, you must assemble the cables before attaching them to the switch.

Note - The ends of the optical fiber cable and the receptacles of the transceivers must be clean and optically clear before assembly. Do not remove the protective caps from the optical fiber cable or the plugs from the transceivers until instructed to do so.

- 1. Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**
See [“Installation Task Overview”](#) on page 11.
- 2. Remove the SFP+ optical transceivers and fiber optic cables from their packaging.**
- 3. Remove the plug from an SFP+ optical transceiver.**
- 4. Remove the caps from an LC connector of the fiber optic cable.**
- 5. Holding the shafts of the LC connector, insert the LC connector into the receptacles of the SFP+ optical transceiver.**

Note - The LC connector and SFP+ receptacles are keyed for proper fitting.



6. Push the connector into the transceiver until it clicks.
7. Repeat from [Step 3](#) for the other end of the cable.
8. Repeat from [Step 2](#) for all SFP+ cables to be assembled.
9. Route the data cables.
See [“Route the Cables”](#) on page 56.

Related Information

- [“Cable Requirements”](#) on page 49
- [“Standard MT and PrizmMT Cables”](#) on page 50
- [“Cable Precautions”](#) on page 52
- [“Route the Cables”](#) on page 56
- [“Connect the RJ-45 Ethernet Cables”](#) on page 57

- [“Connect the PrizmMT Cables” on page 58](#)
- [“Connect the SFP+ Cables” on page 60](#)
- [“Secure Cables to the CMB” on page 62](#)

▼ Route the Cables

When cabling a topology, start at the nodes of the fabric or hosts of the network, and work toward the switch.

- 1. Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**
See [“Installation Task Overview” on page 11](#).
- 2. If necessary, prepare the cables to connect the nodes or hosts to the switch.**
See [“Assemble the SFP+ Cables” on page 54](#).
- 3. Prepare and verify that the nodes or hosts are operational, properly configured, and ready to accept fabric or network cabling.**
- 4. For each node or host, begin data cabling.**
 - a. Attach the cable to the appropriate connector of the node or host.**
 - b. Route and bundle the data cable through the topology following the cautions provided in this document.**
See [“Cable Precautions” on page 52](#).
 - c. Bring the cables to the location in the rack where the switch is installed.**
 - d. Repeat [Step 4a](#) through [Step 4c](#) for each node or host.**
- 5. Connect the cables to the switch.**
See [“Connect the RJ-45 Ethernet Cables” on page 57](#).

Related Information

- [“Cable Requirements” on page 49](#)
- [“Standard MT and PrizmMT Cables” on page 50](#)
- [“Cable Precautions” on page 52](#)
- [“Assemble the SFP+ Cables” on page 54](#)
- [“Connect the RJ-45 Ethernet Cables” on page 57](#)
- [“Connect the PrizmMT Cables” on page 58](#)

- “Connect the SFP+ Cables” on page 60
- “Secure Cables to the CMB” on page 62

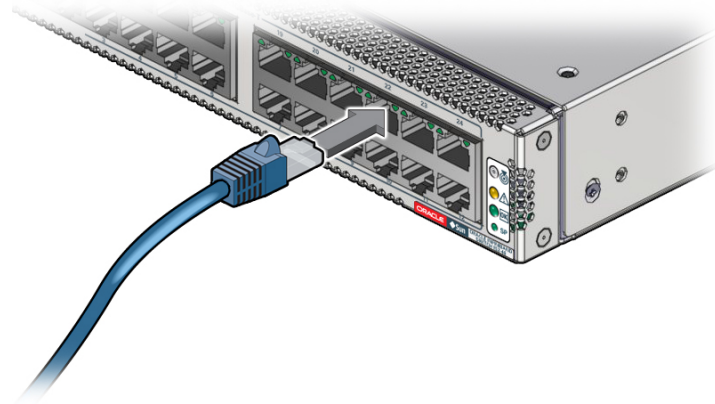
▼ Connect the RJ-45 Ethernet Cables

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**

See “Installation Task Overview” on page 11.

2. **Orient the RJ-45 connector to where it will connect to the switch.**

The tab is up for the upper row of receptacles, and the tab is down for the lower row of receptacles.



3. **Insert the connector into the receptacle until it clicks, securing it in place.**
4. **Lay the cable into a slot on the CMB.**
5. **Repeat [Step 2](#) through [Step 4](#) for each cable to be connected.**
6. **Consider your next task.**
 - **Connect the PrizmMT cables if necessary.**
See “Connect the PrizmMT Cables” on page 58.
 - **Connect the SFP+ cables if necessary.**
See “Connect the SFP+ Cables” on page 60.

- **Secure the cables to the CMB.**
See [“Secure Cables to the CMB”](#) on page 62.

Related Information

- [“Cable Requirements”](#) on page 49
- [“Standard MT and PrizmMT Cables”](#) on page 50
- [“Cable Precautions”](#) on page 52
- [“Assemble the SFP+ Cables”](#) on page 54
- [“Route the Cables”](#) on page 56
- [“Connect the PrizmMT Cables”](#) on page 58
- [“Connect the SFP+ Cables”](#) on page 60
- [“Secure Cables to the CMB”](#) on page 62

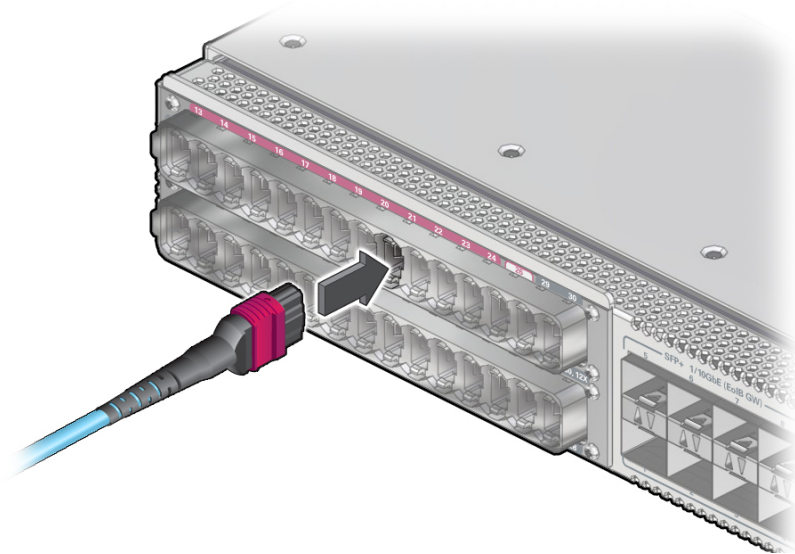
▼ Connect the PrizmMT Cables

Note - PrizmMT receptacles labeled 1 through 26 are for 4x magenta-colored housing PrizmMT cables. PrizmMT receptacles labeled 27 through 30 are for 12x black-colored housing PrizmMT cables.

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**
See [“Installation Task Overview”](#) on page 11.
2. **Remove any filler plug (if installed) from the PrizmMT receptacle where you are installing the cable and visually inspect the receptacle.**
The receptacle should be clean and free of dirt or debris.
3. **If the receptacle is dirty, clean it.**
 - a. **Remove the adapter from the end of the PrizmMT cleaner.**
 - b. **Insert the cleaner tip into the receptacle.**
 - c. **Pump the cleaner into the receptacle, advancing the cleaning cloth inside.**
 - d. **Remove the cleaner from the receptacle and verify cleanliness.**
 - e. **Repeat from [Step 3b](#) if the fibers are still dirty.**

- f. **Replace the adapter onto the end of the PrizmMT cleaner.**
4. **Remove the protective cap from the cable connector and visually inspect the connector.**

The connector should be clean and free of dirt or debris.
5. **If the connector is dirty, clean it.**
 - a. **Open the lid of the adapter on the end of the PrizmMT cleaner.**
 - b. **Insert the connector into the adapter.**
 - c. **Press the connector against the adapter, thereby pumping the cleaner, and advancing the cleaning cloth inside.**
 - d. **Remove the connector from the adapter and verify cleanliness.**
 - e. **Repeat from [Step 5b](#) if the fibers are still dirty.**
 - f. **Close the lid of the adapter on the end of the PrizmMT cleaner.**
6. **Align the PrizmMT connector to where it will connect.**



7. **Firmly press the PrizmMT connector into the receptacle until you feel a detent.**

8. **Lay the cable into a slot on the CMB.**
9. **Repeat [Step 2](#) through [Step 8](#) for each cable to be connected.**
10. **Consider your next task.**
 - **Connect the SFP+ cables if necessary.**
See [“Connect the SFP+ Cables”](#) on page 60.
 - **Secure the cables to the CMB.**
See [“Secure Cables to the CMB”](#) on page 62.

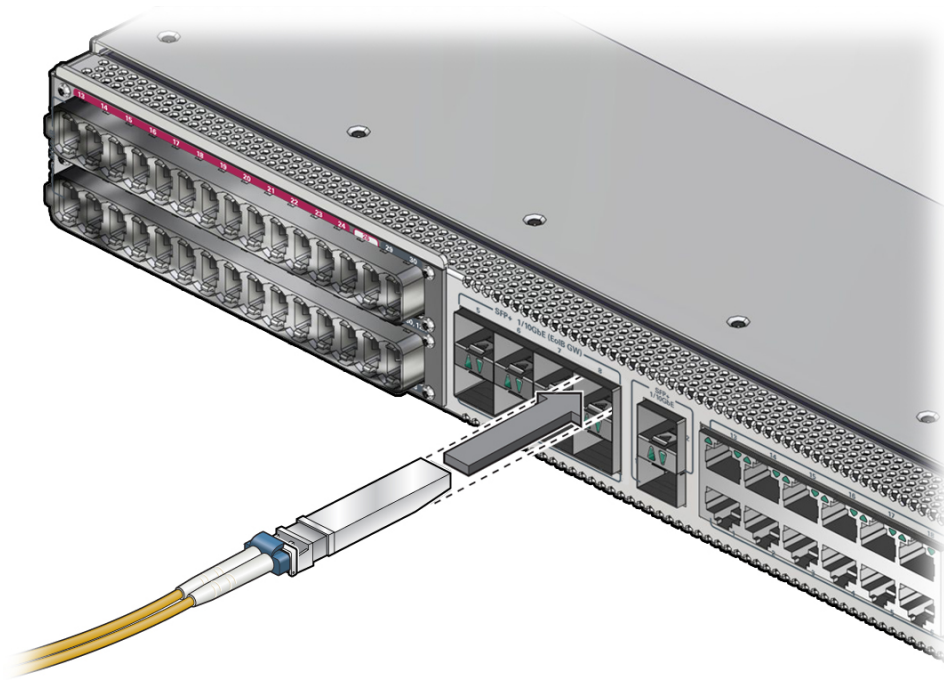
Related Information

- [“Cable Requirements”](#) on page 49
- [“Standard MT and PrizmMT Cables”](#) on page 50
- [“Cable Precautions”](#) on page 52
- [“Assemble the SFP+ Cables”](#) on page 54
- [“Route the Cables”](#) on page 56
- [“Connect the RJ-45 Ethernet Cables”](#) on page 57
- [“Connect the SFP+ Cables”](#) on page 60
- [“Secure Cables to the CMB”](#) on page 62

▼ **Connect the SFP+ Cables**

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**
See [“Installation Task Overview”](#) on page 11.
2. **Remove the protective cap from the connector or transceiver and visually inspect the cable connector.**
The shell should not be bent and should be parallel to the inner boards. If the connector is bent or damaged, use a different cable.
3. **Ensure that the retraction strap is folded back against the cable.**
4. **Orient the cable connector to the SFP+ receptacle squarely and horizontally.**

Ensure that the L groove is up for the top row of receptacles, or that the L groove is down for the bottom row of receptacles.



5. **Slowly move the connector in.**

As you slide the connector in, the shell should be in the center of the SFP+ receptacle.

 - If the connector stops or binds after about 1/4 in. (5 mm) travel, back out and repeat from [Step 4](#).
 - If the connector stops or binds with about 1/8 in. (2 mm) still to go, back out and repeat [Step 5](#).
6. **Continue to push the connector in until you feel a detent.**
7. **Lay the cable into a slot on the CMB.**
8. **Repeat [Step 2](#) through [Step 7](#) for each cable to be connected.**
9. **Secure the cables to the CMB.**

See [“Secure Cables to the CMB”](#) on page 62.

Related Information

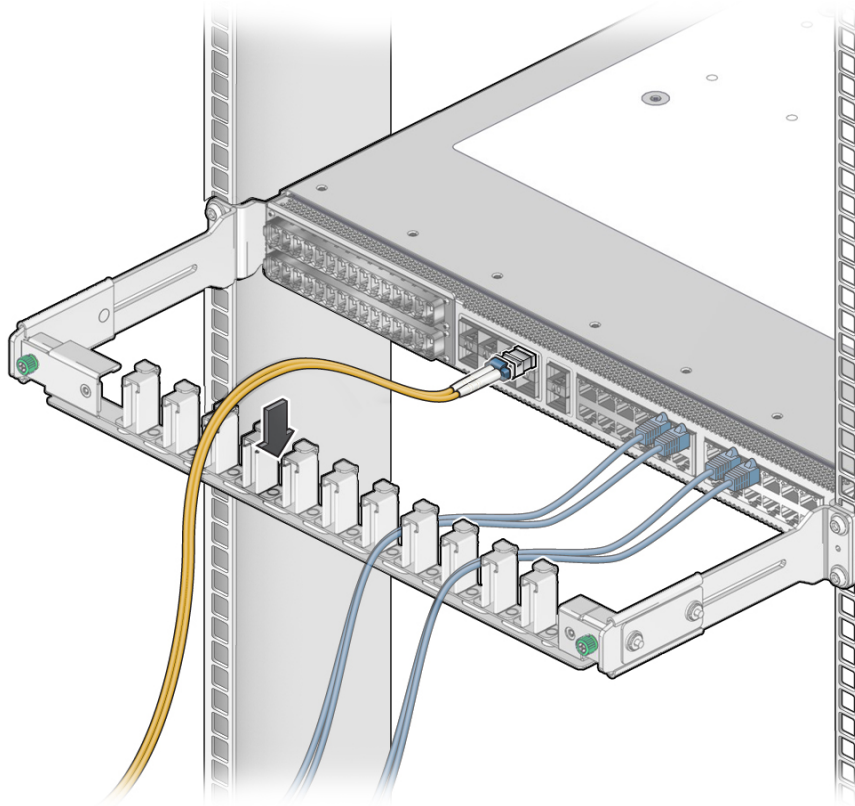
- [“Cable Requirements”](#) on page 49
- [“Standard MT and PrizmMT Cables”](#) on page 50
- [“Cable Precautions”](#) on page 52
- [“Assemble the SFP+ Cables”](#) on page 54
- [“Route the Cables”](#) on page 56
- [“Connect the RJ-45 Ethernet Cables”](#) on page 57
- [“Connect the PrizmMT Cables”](#) on page 58
- [“Secure Cables to the CMB”](#) on page 62

▼ Secure Cables to the CMB

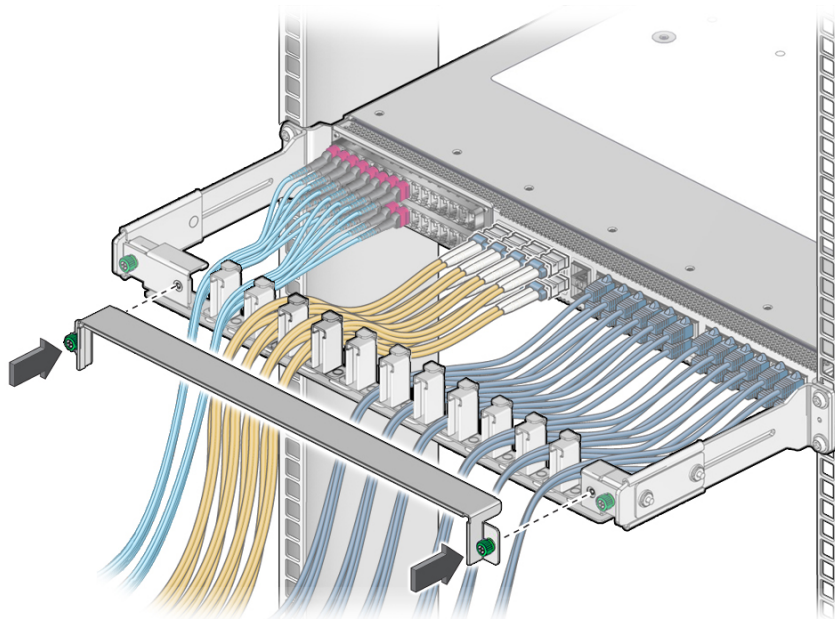
1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**

See [“Installation Task Overview”](#) on page 11.

2. While connecting the RJ-45, SFP+, and PrizmMT cables to the switch, lay the cables into an available slot on the CMB.



3. **After all cables have been laid, replace the cover for the CMB and tighten the thumbscrews.**



4. **Route the data cables so that they do not interfere with other cables, or with servicing the switch or other systems.**

Use hook and loop fastener straps to bundle and secure the cables.

Note - Do not use cable zip ties to bundle or secure the cables, because the ties damage the fibers inside the cables.

5. **Retrieve the power cords and SER MGT cable (if previously routed) for connection to the switch.**

See [“Retrieve the Power Cords and SER MGT Cable” on page 67.](#)

Related Information

- [“Cable Requirements” on page 49](#)
- [“Standard MT and PrizmMT Cables” on page 50](#)
- [“Cable Precautions” on page 52](#)
- [“Assemble the SFP+ Cables” on page 54](#)
- [“Route the Cables” on page 56](#)

- [“Connect the RJ-45 Ethernet Cables” on page 57](#)
- [“Connect the PrizmMT Cables” on page 58](#)
- [“Connect the SFP+ Cables” on page 60](#)

Powering On the Switch

These topics describe how to power on the switch for the first time.

Description	Links
Retrieve the power cords and SER MGT cable.	“Retrieve the Power Cords and SER MGT Cable” on page 67
Connect the serial management device.	<ul style="list-style-type: none">■ “Connect the SER MGT Cable” on page 71■ “Connect a Serial Management Device to the SER MGT Port” on page 74
Connect the power cords.	“Connect the Power Cords” on page 74
If you have a full-time SER MGT connection, install the air duct.	“Install the Air Duct Assembly” on page 76
Power on the switch.	“Power On the Switch” on page 78
If you are not using DHCP-assigned IP addresses, log in to the service processor (SP) through the SER MGT connection.	“Log In to the SP (SER MGT)” on page 79
Assign a static IP address to the SP	“Assign a Static IP Address to the SP” on page 80
Assign a static IP address to the SCP	“Assign a Static IP Address to the SCP” on page 82
Log in to the SP again	“Log In to the SP (Network Management)” on page 84

Related Information

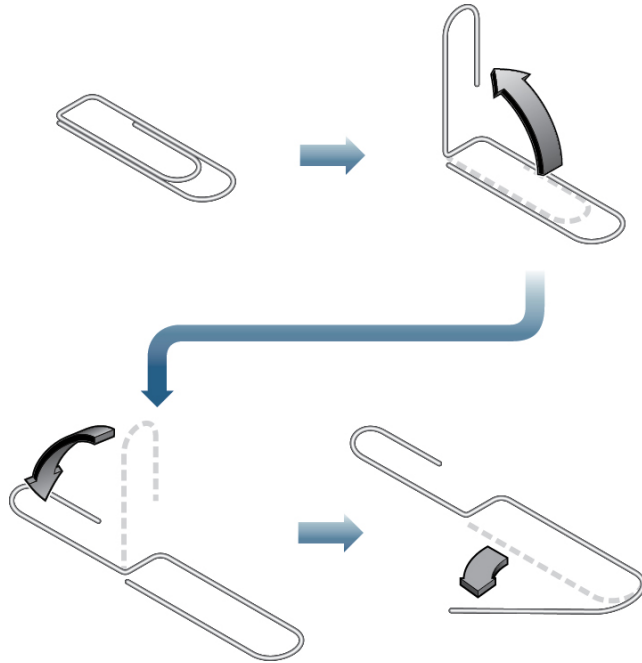
- [“Understanding the Switch” on page 11](#)
- [“Confirming Specifications” on page 17](#)
- [“Preparing for Installation” on page 23](#)
- [“Installing the Switch” on page 29](#)
- [“Connecting Cables” on page 49](#)
- [“Verifying Functionality” on page 87](#)

▼ Retrieve the Power Cords and SER MGT Cable

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**

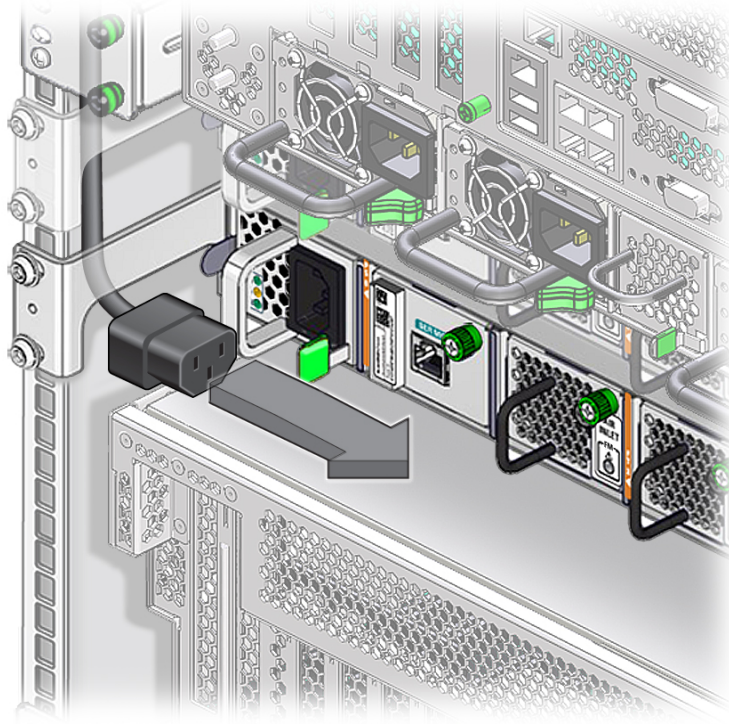
See [“Installation Task Overview”](#) on page 11.

2. **Take the paper clip and lift the smaller loop away from the larger loop.**



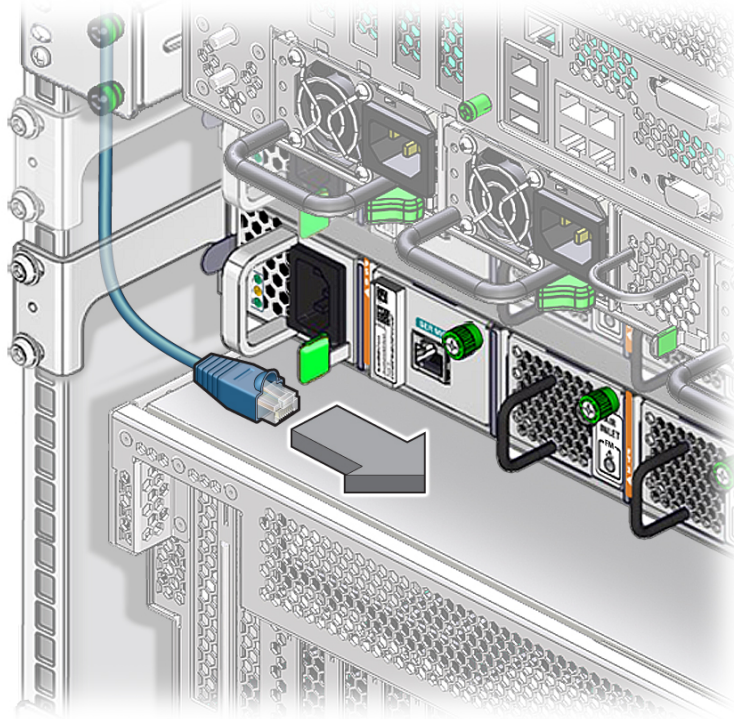
3. **Continue to open the paper clip and fold the smaller loop over, so that the paper clip now resembles the letter S.**
4. **Open the larger loop approximately 45 degrees to form a hook.**
5. **Holding the smaller loop, insert the larger loop into the opening of the long front mounting bracket, to hook the power cord hanging inside.**

6. Pull the power cord through the opening, until you can grasp it with your fingers.



7. Pull the cord through so that the end of the cord is free.
8. Repeat [Step 5](#) through [Step 7](#) for the other power cord.
9. If you will have a full-time SER MGT connection, repeat [Step 5](#) through [Step 7](#) for the SER MGT cable.

Note - When pulling the SER MGT cable, be careful not to break the tab of the RJ-45 connector.



10. Consider your next steps.

- **If you have DHCP-assigned IP addresses, connect the power cords.**
See [“Connect the Power Cords” on page 74.](#)
- **Otherwise, connect the SER MGT cable.**
See [“Connect the SER MGT Cable” on page 71.](#)

Related Information

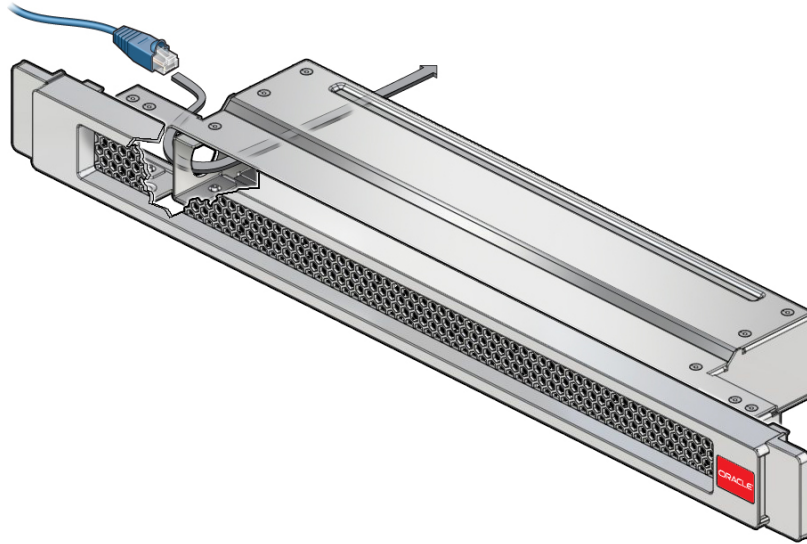
- [“Connect the SER MGT Cable” on page 71](#)
- [“Connect a Serial Management Device to the SER MGT Port” on page 74](#)
- [“Connect the Power Cords” on page 74](#)
- [“Install the Air Duct Assembly” on page 76](#)

- [“Power On the Switch” on page 78](#)
- [“Log In to the SP \(SER MGT\)” on page 79](#)
- [“Assign a Static IP Address to the SP” on page 80](#)
- [“Assign a Static IP Address to the SCP” on page 82](#)
- [“Log In to the SP \(Network Management\)” on page 84](#)

▼ **Connect the SER MGT Cable**

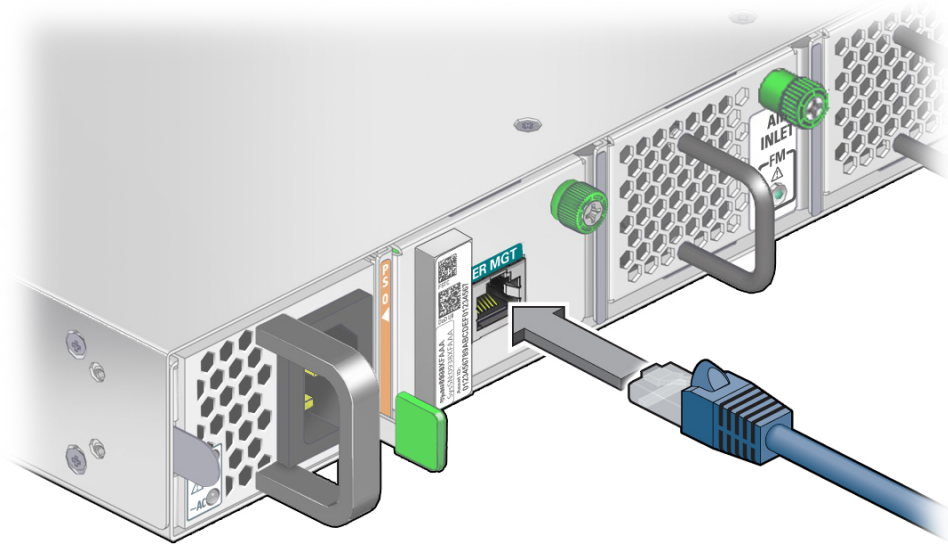
1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**
See [“Installation Task Overview” on page 11](#).
2. **Consider your next step.**
 - If the SER MGT cable will be a full-time connection, go to [Step 3](#).
 - If the SER MGT connection will only be temporary for installation, go to [Step 5](#).
3. **Pass the end of the SER MGT cable through the opening on the side of the air duct assembly.**
 - If the SER MGT cable is on the left, pass the cable from the outside, through the opening on the left side (no Oracle logo) in to the center.

- If the SER MGT cable is on the right, pass the cable from the outside, through the opening on the right side (Oracle logo) in to the center.



4. Continue to pull the cable through the air duct assembly to take up the slack.
5. Orient the RJ-45 connector to the SER MGT receptacle at the front of the switch, adjacent to the left power supply.

The tab is up for the receptacle.



6. **Insert the connector into the receptacle until it clicks, securing it in place.**
7. **Connect the other end of the SER MGT cable to a serial device.**
See [“Connect a Serial Management Device to the SER MGT Port”](#) on page 74.

Related Information

- [“Retrieve the Power Cords and SER MGT Cable”](#) on page 67
- [“Connect a Serial Management Device to the SER MGT Port”](#) on page 74
- [“Connect the Power Cords”](#) on page 74
- [“Install the Air Duct Assembly”](#) on page 76
- [“Power On the Switch”](#) on page 78
- [“Log In to the SP \(SER MGT\)”](#) on page 79
- [“Assign a Static IP Address to the SP”](#) on page 80
- [“Assign a Static IP Address to the SCP”](#) on page 82
- [“Log In to the SP \(Network Management\)”](#) on page 84

▼ Connect a Serial Management Device to the SER MGT Port

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**
See [“Installation Task Overview”](#) on page 11.
2. **Configure the serial management device to these parameters:**
 - 9600 baud
 - 8 data bits
 - No parity
 - 1 stop bit
 - No handshake
3. **Connect the SER MGT cable from the switch to the serial management device.**
4. **If necessary, route the SER MGT cable so that it does not interfere with other cables, with servicing the switch, or with other systems.**
5. **Connect the power cords.**
See [“Connect the Power Cords”](#) on page 74.

Related Information

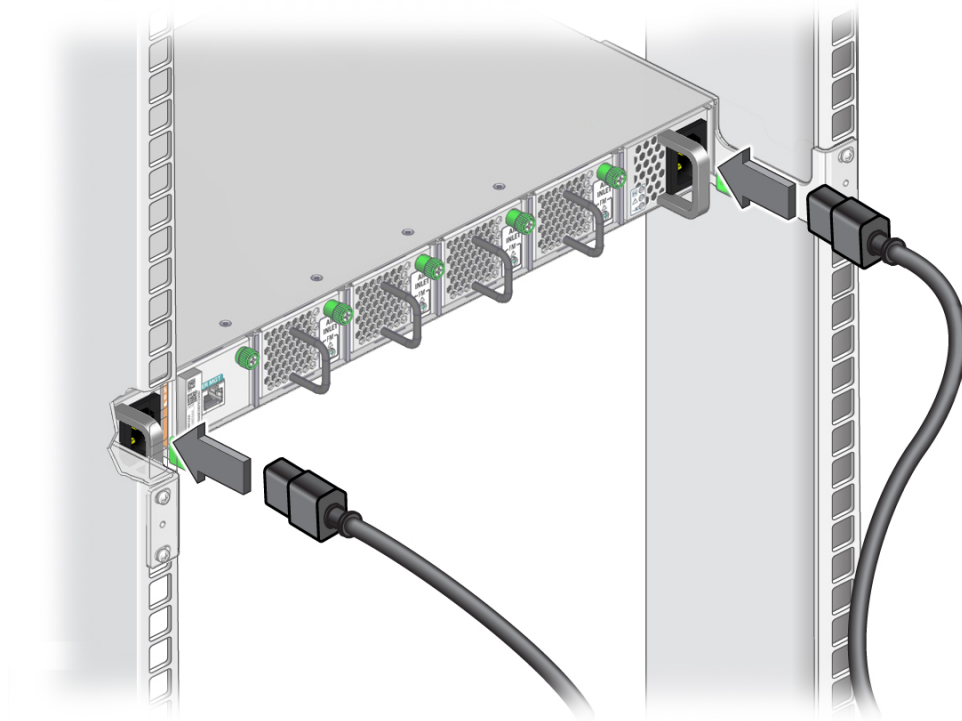
- [“Retrieve the Power Cords and SER MGT Cable”](#) on page 67
- [“Connect the SER MGT Cable”](#) on page 71
- [“Connect the Power Cords”](#) on page 74
- [“Install the Air Duct Assembly”](#) on page 76
- [“Power On the Switch”](#) on page 78
- [“Log In to the SP \(SER MGT\)”](#) on page 79
- [“Assign a Static IP Address to the SP”](#) on page 80
- [“Assign a Static IP Address to the SCP”](#) on page 82
- [“Log In to the SP \(Network Management\)”](#) on page 84

▼ Connect the Power Cords

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**

See “Installation Task Overview” on page 11.

2. **Ensure that the circuit breakers for the facility power receptacle or power distribution device are switched off.**
3. **Plug the power cords into the receptacles at the front of the switch chassis.**



4. **Plug each power cord into the facility power receptacle or power distribution device.**

Note - To provide redundancy, connect each power cord to a separate power source. The switch can operate with only one power source, but there is no redundancy in that case.



Caution - Do not apply power at this time.

5. **Consider your next steps.**
 - **If you have DHCP-assigned IP addresses, install the air duct assembly.**

See [“Install the Air Duct Assembly”](#) on page 76.

- **If you have a full-time SER MGT connection, install the air duct assembly.**
See [“Install the Air Duct Assembly”](#) on page 76.
- **If your SER MGT connection is only temporary, power on the switch.**
See [“Power On the Switch”](#) on page 78.

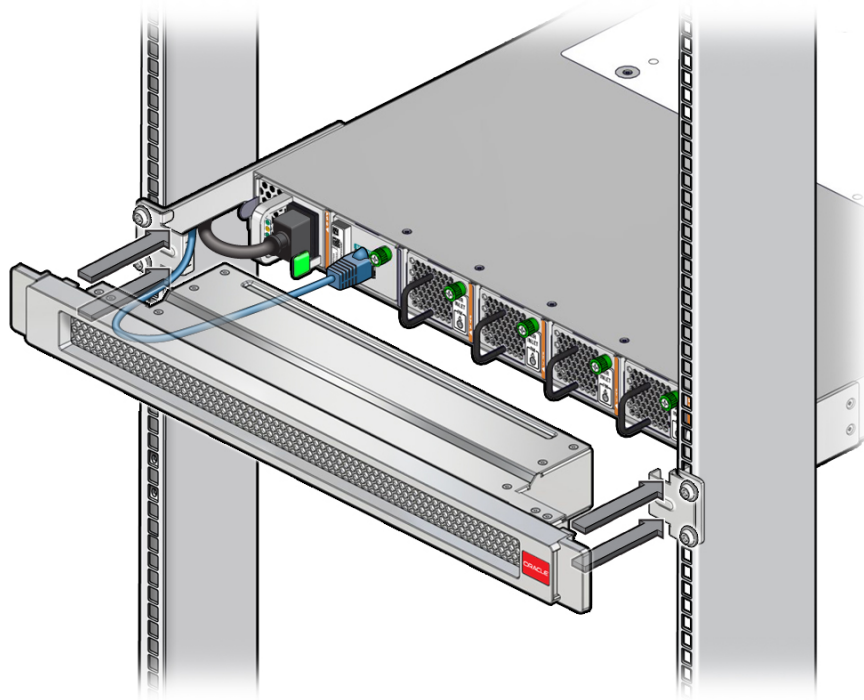
Related Information

- [“Retrieve the Power Cords and SER MGT Cable”](#) on page 67
- [“Connect the SER MGT Cable”](#) on page 71
- [“Connect a Serial Management Device to the SER MGT Port”](#) on page 74
- [“Install the Air Duct Assembly”](#) on page 76
- [“Power On the Switch”](#) on page 78
- [“Log In to the SP \(SER MGT\)”](#) on page 79
- [“Assign a Static IP Address to the SP”](#) on page 80
- [“Assign a Static IP Address to the SCP”](#) on page 82
- [“Log In to the SP \(Network Management\)”](#) on page 84

▼ Install the Air Duct Assembly

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**
See [“Installation Task Overview”](#) on page 11.
2. **Ensure that the power cords and SER MGT cable (if attached) are out of the way and will not interfere with installing the air duct assembly.**
Tuck the power cord slack into the opening of the long front mounting bracket. Tuck the SER MGT cable slack into the cavity of the air duct assembly.
3. **Lift the air duct assembly to where it installs on the switch.**

Though the air duct assembly is symmetrical, the logo, if present, goes to the right.



4. Push the air duct assembly in to the front of the switch, until it snaps into place.
5. Consider your next steps.
 - If you have DHCP-assigned IP addresses, power on the switch.
See [“Power On the Switch” on page 78](#).
 - If you have a full-time SER MGT connection, power on the switch.
See [“Power On the Switch” on page 78](#).
 - If your SER MGT connection was only temporary, verify the switch installation.
See [“Verify LED Status” on page 87](#).

Related Information

- [“Retrieve the Power Cords and SER MGT Cable” on page 67](#)

- [“Connect the SER MGT Cable” on page 71](#)
- [“Connect a Serial Management Device to the SER MGT Port” on page 74](#)
- [“Connect the Power Cords” on page 74](#)
- [“Power On the Switch” on page 78](#)
- [“Log In to the SP \(SER MGT\)” on page 79](#)
- [“Assign a Static IP Address to the SP” on page 80](#)
- [“Assign a Static IP Address to the SCP” on page 82](#)
- [“Log In to the SP \(Network Management\)” on page 84](#)

▼ Power On the Switch

When live power is delivered to the receptacles at the rear of the chassis, standby and main power is made available by the power supplies. The switch immediately comes to full power. Both the SP and SCP begin their boot processes.

1. Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.

See [“Installation Task Overview” on page 11](#).

2. Ensure that:

- The nodes of the IB fabric and hosts of the Ethernet network are operational and securely cabled to the switch.
- The serial management console is operational, configured with correct parameters, and cabled to the switch. See [“Connect a Serial Management Device to the SER MGT Port” on page 74](#).
- The management network is operational and securely cabled to the switch.
- The facility power source or power distribution device is properly cabled to the switch, available, and standing by.
- All data, management, and power cabling to the switch is secure at the switch.

3. Energize the circuit breakers so that facility power is delivered to the switch.

These actions occur in order:

- All chassis status LEDs illuminate, then go dark.
- The power supply LEDs indicate input power, then output power.
- The fans spin up to maximum speed.

Note - Over the next few minutes, the fans gradually decrease in speed.

- Full power is applied to all circuits and systems inside the switch.

- Both the SP and SCP are powered on and booting up.

Note - You might see the boot sequence on the serial device.

- The SP LED slow blinks.

When the SP LED stops blinking and stays lit, and the OK LED lights, it is possible to log in to the SP.

4. Consider your next steps.

- **If you have DHCP-assigned IP addresses, log in to the SP through the network.**

See [“Log In to the SP \(Network Management\)”](#) on page 84.

- **Otherwise, log in to the SP through the SER MGT port.**

See [“Log In to the SP \(SER MGT\)”](#) on page 79.

Related Information

- [“Retrieve the Power Cords and SER MGT Cable”](#) on page 67
- [“Connect the SER MGT Cable”](#) on page 71
- [“Connect a Serial Management Device to the SER MGT Port”](#) on page 74
- [“Connect the Power Cords”](#) on page 74
- [“Install the Air Duct Assembly”](#) on page 76
- [“Log In to the SP \(SER MGT\)”](#) on page 79
- [“Assign a Static IP Address to the SP”](#) on page 80
- [“Assign a Static IP Address to the SCP”](#) on page 82
- [“Log In to the SP \(Network Management\)”](#) on page 84

▼ Log In to the SP (SER MGT)

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**

See [“Installation Task Overview”](#) on page 11.

2. **On the serial management device, press the Return or Enter key several times to synchronize the connection.**

The login prompt is displayed.

```
hostname login:
```

where *hostname* is the host name of the SP. If no host name is assigned, ORACLESP-unknown might be displayed.

3. Log in to the SP.

```
hostname login: root
Password: changeme
->
```

The -> prompt is displayed.

Note - You can change the password at a later time. Refer to the *Oracle EDR InfiniBand Switch and Virtualized I/O Systems Administration Guide*, changing the administrator password.

4. Consider your next task.

- If you have a full-time SER MGT connection, go to [“Verify LED Status” on page 87](#) or [“Assign a Static IP Address to the SP” on page 80](#).
- If your SER MGT connection is only temporary, go to [“Assign a Static IP Address to the SP” on page 80](#).

Related Information

- [“Retrieve the Power Cords and SER MGT Cable” on page 67](#)
- [“Connect the SER MGT Cable” on page 71](#)
- [“Connect a Serial Management Device to the SER MGT Port” on page 74](#)
- [“Connect the Power Cords” on page 74](#)
- [“Install the Air Duct Assembly” on page 76](#)
- [“Power On the Switch” on page 78](#)
- [“Assign a Static IP Address to the SP” on page 80](#)
- [“Assign a Static IP Address to the SCP” on page 82](#)
- [“Log In to the SP \(Network Management\)” on page 84](#)

▼ Assign a Static IP Address to the SP

The switch ships with DHCP IP address assignment for the SP.

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**
See [“Installation Task Overview” on page 11](#).

2. Access the Oracle ILOM CLI.

See [“Log In to the SP \(SER MGT\)”](#) on page 79.

3. Configure the network management parameters.

```
-> set /SP/network property=value property=value ...
```

where:

- *property* is the parameter of the network to configure.
- *value* is the value of the *property* to configure.

These properties are supported:

- *pendingipaddress* – *value* is the IP address of the SP to be configured.
- *pendingipdiscovery* – *value* is the method of IP discovery to be configured, either *static* or *dhcp*.
- *pendingipgateway* – *value* is the IP address of the routing gateway to be configured.
- *pendingipnetmask* – *value* is the netmask to be configured.

Note - You can configure one, several, or all properties in one command line.

For example:

```
-> set /SP/network pendingipdiscovery=static pendingipaddress=123.45.67.89
    pendingipgateway=123.45.67.1 pendingipnetmask=255.255.255.0
Set 'pendingipdiscovery' to 'static'
Set 'pendingipaddress' to '123.45.67.89'
Set 'pendingipgateway' to '123.45.67.1'
Set 'pendingipnetmask' to '255.255.255.0'
->
```

4. Commit the changes.

```
-> set /SP/network commitpending=true
Set 'commitpending' to 'true'
->
```

The static IP address has been configured to 123.45.67.89. You can now manage the SP from any one of the RJ-45 connectors on the rear panel.

5. Consider your next steps.

- **Configure a static IP address for the SCP.**
See [“Assign a Static IP Address to the SCP”](#) on page 82.
- **Log in to the SP through the management network.**

See [“Log In to the SP \(Network Management\)”](#) on page 84.

Related Information

- [“Retrieve the Power Cords and SER MGT Cable”](#) on page 67
- [“Connect the SER MGT Cable”](#) on page 71
- [“Connect a Serial Management Device to the SER MGT Port”](#) on page 74
- [“Connect the Power Cords”](#) on page 74
- [“Install the Air Duct Assembly”](#) on page 76
- [“Power On the Switch”](#) on page 78
- [“Log In to the SP \(SER MGT\)”](#) on page 79
- [“Assign a Static IP Address to the SCP”](#) on page 82
- [“Log In to the SP \(Network Management\)”](#) on page 84

▼ Assign a Static IP Address to the SCP

The switch ships with DHCP IP address assignment for the SCP.

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**

See [“Installation Task Overview”](#) on page 11.

2. **Access the Oracle ILOM CLI.**

See [“Log In to the SP \(SER MGT\)”](#) on page 79 or [“Log In to the SP \(Network Management\)”](#) on page 84.

3. **Start the host console.**

```
-> start /HOST/console
Are you sure you want to start /HOST/console (y/n)? y
Serial console started. To stop, type ESC (
```

4. **Press the Enter key.**

```
Oracle Linux Server release 6.6
Kernel 4.0.4-15.el6uek.x86_64 on an x86_64
hostname login:
```

5. **Log in as the root user.**

```
hostname login: root
Password:password
Last login: Fri May 25 09:51:36 on ttyS0
```

```
[root@hostname ~]#
```

The default *password* is changeme.

6. Set the SCP IP address.

```
[root@hostname ~]# nm3tool ipaddress SCP_IP_address|dhcp|ilom
```

where *SCP_IP_address* is the IP address to be assigned to the SCP. Alternatively, you can configure IP address assignment by DHCP or Oracle ILOM. If you provide a static IP address, you will also need to provide the netmask and the IP address of the management network gateway. For example:

```
[root@hostname ~]# nm3tool ipaddress 123.45.67.90
Enter netmask: 255.255.255.0
Enter default gateway: 123.45.67.1
Restart network now? (Y/n)
```

7. Restart the network to use the new values.

```
Restart network now? (Y/n)Y
Shutting down interface eth0:           [ OK ]
Shutting down interface eth1:           [ OK ]
Shutting down loopback interface:       [ OK ]
Bringing up loopback interface:         [ OK ]
Bringing up interface eth0:
Determining IP information for eth0... done.
                                           [ OK ]
Bringing up interface eth1: Determining if ip address 169.254.2.1 is already in use for
device eth1...
                                           [ OK ]
```

```
[root@hostname ~]#
```

8. (Optional) Set the hostname.

Provide the new host name. For example:

```
[root@hostname ~]# nm3tool hostname hostname
```

where *hostname* is the host name of the SCP. For example:

```
[root@hostname ~]# nm3tool hostname hostwiththemost
[root@hostname ~]#
```

9. Apply the changes.

```
[root@hostname ~]# nm3tool apply
Setting network configuration from XML
[root@hostname ~]#
```

10. Log in to the SP through the management network.

See [“Log In to the SP \(Network Management\)”](#) on page 84.

Related Information

- [“Retrieve the Power Cords and SER MGT Cable”](#) on page 67
- [“Connect the SER MGT Cable”](#) on page 71
- [“Connect a Serial Management Device to the SER MGT Port”](#) on page 74
- [“Connect the Power Cords”](#) on page 74
- [“Install the Air Duct Assembly”](#) on page 76
- [“Power On the Switch”](#) on page 78
- [“Log In to the SP \(SER MGT\)”](#) on page 79
- [“Assign a Static IP Address to the SP”](#) on page 80
- [“Log In to the SP \(Network Management\)”](#) on page 84

▼ Log In to the SP (Network Management)

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**
See [“Installation Task Overview”](#) on page 11.
2. **Open an SSH session and connect to the SP by specifying the IP address you previously configured.**

For example, type:

```
% ssh -l root IP_address
password: password
->
```

where *IP_address* is the IP address of the SP. Initially, the password is changeme.

Note - You can change the password at a later time. Refer to the *Oracle EDR InfiniBand Switch and Virtualized I/O Systems Administration Guide*, changing the root user password for instructions.

The Oracle ILOM shell prompt (->) is displayed.

3. **Consider your next steps.**
 - **If you have DHCP-assigned addresses, verify the switch installation.**
See [“Verify LED Status”](#) on page 87.
 - **If you have a full-time SER MGT connection, verify the switch installation.**

See [“Verify LED Status”](#) on page 87.

- **If your SER MGT connection is only temporary, disconnect the SER MGT cable and install the air duct assembly.**

See [“Install the Air Duct Assembly”](#) on page 76.

Related Information

- [“Retrieve the Power Cords and SER MGT Cable”](#) on page 67
- [“Connect the SER MGT Cable”](#) on page 71
- [“Connect a Serial Management Device to the SER MGT Port”](#) on page 74
- [“Connect the Power Cords”](#) on page 74
- [“Install the Air Duct Assembly”](#) on page 76
- [“Power On the Switch”](#) on page 78
- [“Log In to the SP \(SER MGT\)”](#) on page 79
- [“Assign a Static IP Address to the SP”](#) on page 80
- [“Assign a Static IP Address to the SCP”](#) on page 82

Verifying Functionality

These topics describe how to verify the functionality of the switch.

- [“Verify LED Status” on page 87](#)
- [“LED Status” on page 88](#)
- [“Verify That the Switch Is Operational” on page 89](#)
- [“Verify Connectivity” on page 91](#)
- [“Log In to the Oracle Fabric Manager Interface” on page 94](#)
- [“Log In to the Oracle Fabric OS Interface” on page 96](#)
- [“Run the Oracle Fabric OS Configuration Wizard” on page 97](#)
- [“Oracle Fabric OS Configuration Wizard Parameters” on page 98](#)

Related Information

- [“Understanding the Switch” on page 11](#)
- [“Confirming Specifications” on page 17](#)
- [“Preparing for Installation” on page 23](#)
- [“Installing the Switch” on page 29](#)
- [“Connecting Cables” on page 49](#)
- [“Powering On the Switch” on page 67](#)

▼ Verify LED Status

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**
See [“Installation Task Overview” on page 11](#).
2. **At the switch, observe the state of the various chassis and component LEDs.**
 - Chassis status LEDs
 - Power supply LEDs
 - Fan module LEDs
 - SFP+ receptacle LEDs

- RJ-45 receptacle LEDs

Note - If the power supply or fan module LEDs are lit, they can be seen through the air duct assembly.

3. Compare the state of the LEDs to the status indicated.

See “LED Status” on page 88.





4. Verify that the switch is operating.




See “Verify That the Switch Is Operational” on page 89.

Related Information

- “LED Status” on page 88
- “Verify That the Switch Is Operational” on page 89
- “Verify Connectivity” on page 91
- “Log In to the Oracle Fabric Manager Interface” on page 94
- “Log In to the Oracle Fabric OS Interface” on page 96
- “Run the Oracle Fabric OS Configuration Wizard” on page 97
- “Oracle Fabric OS Configuration Wizard Parameters” on page 98

LED Status

Glyph	Name	Color	State and Meaning
Chassis Status			
	Locate	White	Indicates these conditions: <ul style="list-style-type: none"> ■ On – No function. ■ Fast blinking – Switch is identifying itself. ■ Off – Disabled.
	Attention	Amber	Indicates these conditions: <ul style="list-style-type: none"> ■ On – Fault detected. ■ Off – No faults detected.
	OK	Green	Indicates these conditions: <ul style="list-style-type: none"> ■ On – Switch is functional without fault. ■ Off – Switch is off or initializing.
	SP	Green	Indicates these conditions: <ul style="list-style-type: none"> ■ On – SP is ready.

Glyph	Name	Color	State and Meaning
			<ul style="list-style-type: none"> ■ Slow blinking – SP is booting up. ■ Off – SP is powered off, resetting, or at fault.
Cable Status			
	Link	Green	Indicates these conditions: <ul style="list-style-type: none"> ■ On – Link is up. ■ Intermittent flash – There is activity on the link. ■ Off – Link is down.
Power Supply Status			
	OK	Green	Indicates these conditions: <ul style="list-style-type: none"> ■ On – 12 VDC is supplied. ■ Off – No DC voltage is present.
	Attention	Amber	Indicates these conditions: <ul style="list-style-type: none"> ■ On – Fault detected, 12 VDC shut down. ■ Off – No faults detected.
~ AC	AC	Green	Indicates these conditions: <ul style="list-style-type: none"> ■ On – AC power present and good. ■ Off – AC power not present.
Fan Module Status			
	Attention	Amber	Indicates these conditions: <ul style="list-style-type: none"> ■ On – Fault detected, ■ Off – No faults detected.

Related Information

- [“Verify LED Status” on page 87](#)
- [“Verify That the Switch Is Operational” on page 89](#)
- [“Verify Connectivity” on page 91](#)
- [“Log In to the Oracle Fabric Manager Interface” on page 94](#)
- [“Log In to the Oracle Fabric OS Interface” on page 96](#)
- [“Run the Oracle Fabric OS Configuration Wizard” on page 97](#)
- [“Oracle Fabric OS Configuration Wizard Parameters” on page 98](#)

▼ Verify That the Switch Is Operational

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**

See [“Installation Task Overview” on page 11](#).

2. Access the Oracle ILOM CLI.

See [“Log In to the SP \(SER MGT\)” on page 79](#) or [“Log In to the SP \(Network Management\)” on page 84](#).

3. Check the health of the switch.

```
-> show /System -t health
Target                                     | Property | Value
-----+-----+-----
/System                                   | health   | OK
/System/Power                             | health   | OK
/System/Power/Power_Supplies/Power_Supply_0 | health   | OK
/System/Power/Power_Supplies/Power_Supply_1 | health   | OK
/System/Cooling                           | health   | OK
/System/Cooling/Fans/Fan_0                | health   | OK
/System/Cooling/Fans/Fan_1                | health   | OK
/System/Cooling/Fans/Fan_2                | health   | OK
/System/Cooling/Fans/Fan_3                | health   | OK
/System/Cooling/Fans/Fan_4                | health   | OK
/System/Cooling/Fans/Fan_5                | health   | OK
/System/Cooling/Fans/Fan_6                | health   | OK
/System/Cooling/Fans/Fan_7                | health   | OK
/System/Networking                        | health   | OK
/System/Networking/Switches/Switch_0      | health   | OK
/System/Networking/Switches/Switch_1      | health   | OK
->
```

4. If any target has a health value other than OK, investigate why.

Refer to *Switch Service*, detecting and managing faults.

5. Identify any open problems.

```
-> show /System/Open_Problems
Open Problems (0)
Date/Time          Subsystems          Component
-----+-----+-----
->
```

6. If any open problems are discovered, investigate the problem.

Refer to *Switch Service*, detecting and managing faults.

7. Verify the switch's connectivity to the IB fabric and Ethernet network.

See [“Verify Connectivity” on page 91](#).

Related Information

- [“Verify LED Status” on page 87](#)
- [“LED Status” on page 88](#)

- [“Verify Connectivity” on page 91](#)
- [“Log In to the Oracle Fabric Manager Interface” on page 94](#)
- [“Log In to the Oracle Fabric OS Interface” on page 96](#)
- [“Run the Oracle Fabric OS Configuration Wizard” on page 97](#)
- [“Oracle Fabric OS Configuration Wizard Parameters” on page 98](#)

▼ Verify Connectivity

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**
See [“Installation Task Overview” on page 11](#).
2. **If you are at the switch, check the Link LEDs of the SFP+ and RJ-45 connectors.**
See [“LED Status” on page 88](#) for a description of Link LED states.
3. **Access the Oracle ILOM CLI.**
See [“Log In to the SP \(SER MGT\)” on page 79](#) or [“Log In to the SP \(Network Management\)” on page 84](#).
4. **Verify Ethernet connectivity.**

- a. **Start the EMS console.**

```
-> start /System/Networking/Switches/Switch_0/fs_cli
Are you sure you want to start /System/Networking/Switches/Switch_0/fs_cli
(y/n)? y
Management Switch for Oracle InfiniBand Switch IS2-46
SEFOS login:
```

- b. **Log in to SEFOS.**

```
SEFOS login: root
Password: password
SEFOS#
```

The default password is admin123.

- c. **Display the state of the Ethernet ports.**

```
SEFOS# show interfaces status
```

Port	Status	Duplex	Speed	Negotiation	Capability
Gi0/1	not connected	Half	-	Auto	Auto-MDIX on
Gi0/2	connected	Full	1 Gbps	Auto	Auto-MDIX on

```

Gi0/3      connected      Full    1 Gbps    Auto      Auto-MDIX on
Gi0/4      not connected     Half    -         Auto      Auto-MDIX on
Gi0/5      not connected     Half    -         Auto      Auto-MDIX on
Gi0/6      connected         Full    1 Gbps    Auto      Auto-MDIX on
Gi0/7      not connected     Half    -         Auto      Auto-MDIX on
...
Gi0/13     connected         Full    1 Gbps    Auto      Auto-MDIX on
...
Gi0/23     not connected     Half    -         Auto      Auto-MDIX on
Gi0/23     connected         Full    1 Gbps    Auto      Auto-MDIX on
Gi0/25     connected         Full    1 Gbps    Auto      Auto-MDIX on
Gi0/26     connected         Full    1 Gbps    Auto      Auto-MDIX on
Ex0/1      not connected     Full    10 Gbps   No-Negotiation Auto-MDIX on
Ex0/2      not connected     Full    10 Gbps   No-Negotiation Auto-MDIX on
SEFOS#

```

In the output, Port is the port as seen on the rear panel. Ports Gi0/25 and Gi0/26 are internal to the switch architecture. Ports Ex0/1 and Ex0/2 are the two SFP+ uplink ports. The Status is the state of the port. The Duplex, Speed, and Negotiation are the parameters of the link. The Capability indicates if auto-crossover capability is on.

- d. **If the status of a known-connected port is anything other than connected, investigate why.**

Refer to the EMS module documentation.

- e. **Exit the EMS console.**

```

SEFOS# exit
Connection closed by foreign host

Entering character mode
Escape character is '^'.
start: The session with /System/Networking/Switches/Switch_0/fs_cli has ended.
->

```

5. Verify IB and gateway connectivity.

- a. **Start the host console.**

```

-> start /HOST/console
Are you sure you want to start /HOST/console (y/n)? y

Serial console started. To stop, type ESC (

```

- b. **Press Enter.**

```
[user@hostname ~]#
```

where:

- *user* is the current username.
- *hostname* is the host name of the SCP.

c. Switch to user admin with password admin.

```
[user@hostname ~]# su admin
Welcome to IBOS Controller
Copyright (c) 2012-2015 Oracle Corp. All rights reserved.
Enter "help" for information on available commands.
Enter the command "show system copyright" for licensing information
admin@hostname[OFOS]
```

Note - From here forward in this document, the `admin@hostname[OFOS]` prompt is replaced with simply `[OFOS]`.

If this is the first time Oracle Fabric OS is accessed, the Oracle Fabric OS configuration wizard might start. If this happens, see [“Run the Oracle Fabric OS Configuration Wizard” on page 97](#).

d. Display the state of the gateway ports.

```
[OFOS] show ioports
name      type                state                descr                v-resources
-----
0/1       gwEthernet10GbPort up/indeterminate    0
0/2       gwEthernet10GbPort up/indeterminate    0
0/3       gwEthernet10GbPort up/indeterminate    0
0/4       gwEthernet10GbPort up/indeterminate    0
0/5       gwEthernet10GbPort up/indeterminate    0
0/6       gwEthernet10GbPort up/indeterminate    0
0/7       gwEthernet10GbPort up/indeterminate    0
0/8       gwEthernet10GbPort up/indeterminate    0
8 records displayed
[OFOS]
```

In the output, the name is the port number as seen on the rear panel. The state is of the local port/peer port. The descr is the node descriptor of the peer port. The v-resources are the number of VLANs and VNICs supported on that port.

e. Display the state of the IB ports.

```
[OFOS] show infiniband-port
name      state                mode_state           guid
-----
0/1       up/down             switching            0
0/2       up/down             switching            0
0/3       up/down             switching            0
```

```

0/4          up/down          switching          0
.
.
.
0/27        up/down          switching          0
0/28        up/down          switching          0
0/29        up/down          switching          0
0/30        up/down          switching          0
30 records displayed
[OFOS]

```

In the output, the name is the port number as seen on the rear panel. The state is of the local port/peer port. The mode_state is the condition of the link. The guid is the GUID of the peer port.

- f. **If in the output of these commands a port is identified as being in a down state, or if a link mode_state is other than switching, investigate why.**

Refer to the Oracle Fabric OS documentation for assistance.

- g. **Exit the host console.**

Type `exit` and press the Enter key, then press the Esc key and type (.

```

[OFOS] exit
[root@nsn156-168 ~]#
Serial console stopped.
->

```

6. **Administer the switch from Oracle Fabric Manager or Oracle Fabric OS.**

See [“Log In to the Oracle Fabric Manager Interface” on page 94](#) or [“Log In to the Oracle Fabric OS Interface” on page 96](#).

Related Information

- [“Verify LED Status” on page 87](#)
- [“LED Status” on page 88](#)
- [“Verify That the Switch Is Operational” on page 89](#)
- [“Log In to the Oracle Fabric Manager Interface” on page 94](#)
- [“Log In to the Oracle Fabric OS Interface” on page 96](#)
- [“Run the Oracle Fabric OS Configuration Wizard” on page 97](#)
- [“Oracle Fabric OS Configuration Wizard Parameters” on page 98](#)

▼ Log In to the Oracle Fabric Manager Interface

1. **From a management network attached host, start a web browser.**

2. Log in to Oracle Fabric Manager.

`https://SCP_IP_address:8443/xms`

where *SCP_IP_address* is the IP address of the SCP you configured in [“Assign a Static IP Address to the SCP”](#) on page 82.

The Oracle Fabric Manager login page is displayed.

3. Type the username and password of the Oracle Fabric Manager administrator.

The default username is root, and the password is changeme.

4. Select a language from the drop-down menu and click Log In.

The Fabric Manager Dashboard is displayed.

5. From the Navigation pane, open the Managed Devices folder, and click Discovery Devices.**6. Find the switch in the list of devices, and highlight it.****7. Click the check mark icon.****8. Type the user name and password, and click Submit.**

The default username is admin, and the password is admin.

The Discovery Devices pane updates, and the green circle checkmark in the Manage Status column indicates that the switch is enabled for management.

9. From the Navigation pane, open the General folder, and click Dashboard.

The Navigation pane and Fabric Manager Dashboard reload with additional functionality.

10. You can now administer the switch through Oracle Fabric Manager.

Refer to the Oracle Fabric Manager documentation for further instructions.

Related Information

- [“Verify LED Status”](#) on page 87
- [“LED Status”](#) on page 88
- [“Verify That the Switch Is Operational”](#) on page 89
- [“Verify Connectivity”](#) on page 91
- [“Log In to the Oracle Fabric OS Interface”](#) on page 96
- [“Run the Oracle Fabric OS Configuration Wizard”](#) on page 97
- [“Oracle Fabric OS Configuration Wizard Parameters”](#) on page 98

▼ Log In to the Oracle Fabric OS Interface

When you log in to the Oracle Fabric OS interface for the very first time, the Oracle Fabric OS configuration wizard starts.

1. From a management network attached host, start an SSH session.

```
$ ssh user@SCP_IP_address
user@SCP_IP_address's password: password
Last login: Wed Jun 13 22:50:04 2012 from sca-ss-01.us.oracle.com

Welcome to OFOS Controller
Copyright (c) 2012-2015 Oracle Corp. All rights reserved.
Enter "help" for information on available commands.
Enter the command "show system copyright" for licensing information
user@hostname[OFOS]
```

where:

- *user* is the username of the Oracle Fabric OS administrator. The default is `admin`.
- *password* is the password of the Oracle Fabric OS administrator. The default is `admin`.
- *SCP_IP_address* is the IP address you configured in [“Assign a Static IP Address to the SCP” on page 82](#).
- *hostname* is the host name you configured in [“Assign a Static IP Address to the SCP” on page 82](#).

2. Consider your next steps.

- **If this is the first login to Oracle Fabric OS, the Oracle Fabric OS configuration wizard runs automatically.**
See [“Run the Oracle Fabric OS Configuration Wizard” on page 97](#).
- **Otherwise, you can now administer the switch through Oracle Fabric OS.**
Refer to the Oracle Fabric OS documentation for further instructions.

Related Information

- [“Verify LED Status” on page 87](#)
- [“LED Status” on page 88](#)
- [“Verify That the Switch Is Operational” on page 89](#)
- [“Verify Connectivity” on page 91](#)
- [“Log In to the Oracle Fabric Manager Interface” on page 94](#)
- [“Run the Oracle Fabric OS Configuration Wizard” on page 97](#)
- [“Oracle Fabric OS Configuration Wizard Parameters” on page 98](#)

▼ Run the Oracle Fabric OS Configuration Wizard



Caution - Running the Oracle Fabric OS configuration wizard destroys data. If you are manually running the wizard, consider backing up configuration data before proceeding.

1. **Consider your first step.**
 - If the Oracle Fabric OS configuration wizard has started automatically, go to [Step 2](#).
 - If you want to manually run the Oracle Fabric OS configuration wizard, at the Oracle Fabric OS prompt, type:

```
[OFOS] system clear config
This is a destructive operation. Your configuration will be cleared and the
system will be restarted. Please type 'confirm' to clear the configuration and
restart the system.
> confirm
```
2. **Review the parameters that the Oracle Fabric OS configuration wizard requests.**
See [“Oracle Fabric OS Configuration Wizard Parameters” on page 98](#).
3. **Permit the Oracle Fabric OS configuration wizard to run.**
Type Y.
4. **Answer the questions as the wizard requests.**
When completed, the wizard reboots Oracle Fabric OS.
5. **Log in to Oracle Fabric OS with the newly configured values.**
See [“Log In to the Oracle Fabric OS Interface” on page 96](#).

Related Information

- [“Verify LED Status” on page 87](#)
- [“LED Status” on page 88](#)
- [“Verify That the Switch Is Operational” on page 89](#)
- [“Verify Connectivity” on page 91](#)
- [“Log In to the Oracle Fabric Manager Interface” on page 94](#)
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- [“Oracle Fabric OS Configuration Wizard Parameters” on page 98](#)

Oracle Fabric OS Configuration Wizard Parameters

Parameter	Value
What type of switch is this?	Choose from displayed
Do you want to enable a strong password configuration?	Yes/No
If yes, what is the minimum number of characters in the password?	1 - 8
If yes, what is the minimum number of lower case letters in the password?	1 - 8
If yes, what is the minimum number of digits in the password?	1 - 8
If yes, what is the minimum number of special characters in the password?	1 - 8
If yes, what is the minimum number of upper case letters in the password?	1 - 8
What is the password for the admin user?	Enter the admin password
What is the OSDN MAC address?	Choose from displayed

Related Information

- [“Verify LED Status” on page 87](#)
- [“LED Status” on page 88](#)
- [“Verify That the Switch Is Operational” on page 89](#)
- [“Verify Connectivity” on page 91](#)
- [“Log In to the Oracle Fabric Manager Interface” on page 94](#)
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- [“Run the Oracle Fabric OS Configuration Wizard” on page 97](#)

Glossary

1

10GBASE-T – LR Ethernet technology that supports cable distances of over 300 meters.

10GBASE-T – SR Standard 10GbE Ethernet technology.

10GbE/40GbE module I/O module for the Oracle Fabric Interconnect F2-12 that supports 10GbE and 40GbE interfaces.

16G Fibre Channel module I/O module for the Oracle Fabric Interconnect F2-12 that supports Fibre Channel interfaces.

A

AD Abbreviation for Active Directory.

adapter Physical device, such as an HCA or NIC, that enables a host to communicate through a fabric or network.

ASR Automatic Service Request. A feature of Oracle hardware that automatically opens service requests when specific hardware faults occur. ASR is integrated with My Oracle Support (MOS) and requires a support agreement. See also MOS.

C

CFM Cubic feet per minute. A standard of measuring airflow.

CMB Abbreviation for cable management bracket. A component that supports and groups cables extending from the chassis.

D

DN Abbreviation for distinguished name. An Active Directory term.

DSA key Digital Signature Algorithm key. A component of SSH authentication. See also RSA and SSH.

E

EDR Extended Data Rate. A throughput of InfiniBand (IB) technology, typically 100Gbps. See also IB.

EMS module Embedded Management Switch module. A component within the switch chassis that provides an Ethernet switch and management controller, using the SEFOS operating system. See also SEFOS.

Ethernet gateway A device that either enables data transference from one protocol to another, for example IB to Ethernet. Or a device that serves as a routing node for an Ethernet network.

Ethernet management switch An Ethernet switch that enables single point management of multiple service processors (SP) or hosts through their respective network management interfaces. See also SP.

F

fabric card A component of an IB switch chassis that provides a spine topology construct. See also IB SFM module.

fabric interconnect Short name for an IB switch that provides gateway services and additional functionality.

fan module A hot-swappable replaceable component that provides cooling air to the chassis interior.

Fibre Channel A data transference technology used primarily for storage systems.

FM Abbreviation of fan module. See also fan module.

G

GB Abbreviation of GigaByte. 1 GB is approximately 1000 MB.

GbE Abbreviation of Gigabit Ethernet. A unit of throughput for Ethernet technology.

GUID Globally unique identifier. A 32-digit hexadecimal number that uniquely identifies an IB node. See also IB.

H

HCA Host channel adapter. A physical device that is the terminating point of an IB node used in a computing instance, such as a server or host.

housing The colored plastic portion of the PrizmMT connector, magenta for 4x, black for 12x. Though it functions as a release device and not as a containment, the term "housing" was assigned by the manufacturer, USConec.

I

I/O module A user-replaceable physical interface component for the Oracle Fabric Interconnect F2-12 and Oracle InfiniBand Switch IS2-254.

I²C A hardware bus employing the IPMI protocol to query and affect I²C nodes. See also IPMI and Oracle ILOM.

IB InfiniBand. A high bandwidth messaging technology, used for very high performance computing.

IB SFM module I/O module for the Oracle InfiniBand Switch IS2-254 that provides a spine topology construct. Is used in conjunction with the IB SLM modules. See also fabric card and IB SLM module.

IB SLM module I/O module for the Oracle InfiniBand Switch IS2-254 that provides a leaf topology construct. Is used in conjunction with the IB SFM modules. See also line card and IB SFM module.

IB switch A physical device that provides connections between nodes within an IB fabric.

ILOM See Oracle ILOM.

IPMI Intelligent Platform Management Interface. A protocol for monitoring and controlling chassis components over the I²C bus.

K

KVMS Abbreviation for keyboard, video, mouse, and storage. A means of providing remote operation of a host.

L

LDAP	Lightweight Directory Access Protocol. A protocol for providing directory services over IP.
LDAP over SSL	A scheme of securing LDAP through a Secure Sockets Layer tunnel. See also LDAP.
leaf switch	A switch utilizing a leaf topology.
line card	A component of an IB switch chassis, that provides a leaf topology construct. See also IB SLM module.
long-range IB module	I/O module for the Oracle Fabric Interconnect F2-12 that supports QDR IB throughput over distances up to 40 kilometers.
LR IB IOM	I/O module for the Oracle Fabric Interconnect F2-12 that supports QDR IB throughput over distances up to 40 kilometers.
LR transceiver	A transceiver used for long range Fibre Channel communication.

M

MAC	Machine Allocation Code. A 12-digit hexadecimal number that uniquely identifies a network node.
MIB	Management Information Base. A plain text file that contains a collection of object identifiers (OID). Used when managing a switch with the SNMP protocol. See also OID and SNMP.
module	A user-replaceable component for a chassis, typically externally accessible. See also I/O module and fan module.
MOS	My Oracle Support, at: http://support.oracle.com

N

network management	A means of managing an SP or SCP through an Ethernet network. See also serial management, SP, and SCP.
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O

OID	Object identifier. Component of a MIB that serves a particular purpose and has parameters that are interpreted by the SNMP protocol. See also MIB and SNMP.
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Oracle F2 10 Gb and 40Gb Ethernet Module	An I/O module that provides either 10GbE or 40GbE functionality.
Oracle F2 Dual Port 16G Fibre Channel Module	An I/O module that provides 16Gb Fibre Channel functionality.
Oracle F2 Long Range InfiniBand Module	An I/O module that provides QDR InfiniBand functionality over long distances.
Oracle F2 Quad Port 10GBASE-T Module	An I/O module that provides four 10GbE interface functionality.
Oracle Fabric Interconnect F2-12	A virtualization switch. See also virtualization switch.
Oracle Fabric Manager	A web-based GUI to administer the switch and fabric.
Oracle Fabric OS	Oracle Fabric Operating System. The operating system within the SCP, that manages the fabric. See also SCP.
Oracle ILOM	Oracle Integrated Lights-Out Manager. An interface using the IPMI protocol and the I ² C bus to monitor and control the hardware components of a chassis.
Oracle InfiniBand Switch IS2-254	A spine switch. See also spine switch.
Oracle InfiniBand Switch IS2-46	A leaf switch. See also leaf switch.
Oracle Linux OS	Oracle Linux operating system. A UNIX-based operating system, often embedded into service processors. See also SP.
Oracle Solaris OS	Oracle Solaris operating system. A UNIX-based operating system, typically used for high-performance Enterprise computing platforms.

P

PrizmMT cable An optical fiber connector and cable used for IB 4x and 12x technology. Is configured with a PrizmMT ferrule. Appears similar to, but is not compatible with standard MT cables and connectors. See also standard MT cable.

Q

QSFP Quad small form-factor pluggable. A form-factor for high-speed data interconnects.

R

RADIUS Remote Authentication Dial-In User Service. A protocol that provides authentication, authorization, and accounting for users.

RJ-45 Standard for an eight-pin modular form-factor for Ethernet interconnects.

RSA key Rivest Shamir Adleman algorithm key. A component of SSH authentication. See also DSA and SSH.

S

SCP System control processor. A type of service processor that manages more complex and resource intensive services, such as IB technology, fabric management interfaces, the Subnet Manager, and so on. The SCP might also be the chassis host. See also SP.

SEFOS Sun Ethernet Fabric Operating System. The operating system used by the EMS module to administer the Ethernet network. See also EMS module.

SER MGT Serial management. A low-speed serial datastream used to interface with the SP. See also SP.

serial management A means of managing an SP or SCP through a serial datastream. See also SER MGT, network management, SP, and SCP.

SFP+ Small form-factor pluggable. A form-factor for high-speed data interconnects.

SNMP Simple Network Management Protocol. A machine interface for remote monitoring and controlling of a switch. Uses MIBs and OIDs to exchange messages containing data or instructions. See also MIB and OID.

SP Service processor. A device that monitors and controls a chassis, regardless of the chassis host state, through an Oracle ILOM interface. See also Oracle ILOM and SCP.

spine switch	A switch utilizing a spine topology.
SR transceiver	A transceiver used for short range Fibre Channel communication.
SSH	Secure Shell. A secure network communication protocol, utilizing DSA and RSA algorithms. See also DSA and RSA.
standard MT cable	An optical fiber connector and cable used for IB 4x technology. Appears similar to, but is not compatible with PrizmMT cables and connectors. See also PrizmMT cable.
switch front	The intake end of the switch chassis that faces the cold aisle when mounted in a rack. Typically is the end with fan modules and power supplies.
switch rear	The exhaust end of the switch chassis that faces the hot aisle when mounted in a rack. Typically is the end populated with high-speed data connections.

V

VAC	Voltage alternating current.
VDC	Voltage direct current.
virtualization switch	A switch supporting multiple interfaces having virtualization capabilities.

W

WWN	World Wide Name. An identifier used for Fibre Channel and other storage interface devices.
WWNN	World Wide Node Name. A Fibre Channel name specifically for a node.
WWPN	World Wide Port Name. A Fibre Channel name specifically for a port.

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