Oracle® Switch ES2-72 and Oracle Switch ES2-64 Installation Guide

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Contents

Using This Documentation

- **Overview** – Describes how to install and power on Oracle Switch ES2-72 and Oracle Switch ES2-64 (the switch)
- **Audience** – Technicians, system administrators, and authorized service providers
- **Required knowledge** – Advanced experience troubleshooting and replacing hardware

Product Documentation Library

Documentation and resources for this product and related products are available at http://www.oracle.com/goto/es2-72_es2-64/docs.

Feedback

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

Understanding the Installation

These topics provide an overview of the switch and its installation.

Related Information

- "Confirming Specifications"
- "Understanding Cabling"
- "Preparing for Installation"
- "Installing the Switch"

Installation Task Overview

This table lists the tasks to perform for switch installation.

The switch is available with various options, which are addressed in the installation procedures.

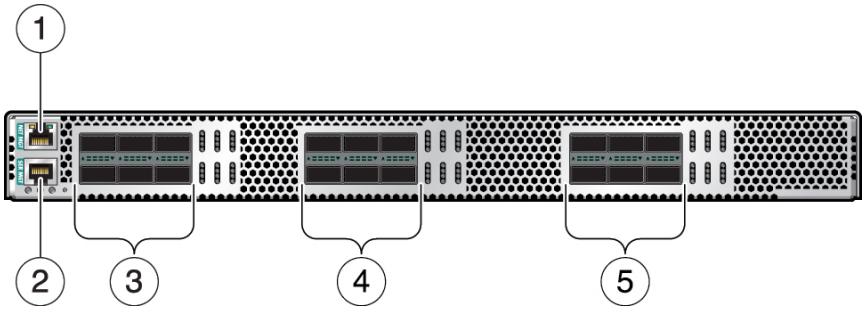
Step	Description	Links
1.	Understanding the front and rear panels	"Cable Connections (Oracle Switch ES2-72)" on page 10 "Cable Connections (Oracle Switch ES2-64)" on page 11 "Power Supplies and Fans" on page 12
2.	Confirming specifications	"Physical Specifications" on page 15 "Electrical Specifications" on page 16 "Environmental Specifications" on page 16
3.	Understanding cabling requirements	"Understanding Cabling"
4.	Understanding ESD and requirements for tools	"ESD Precautions" on page 29

Step	Description	Links
		"Tools Needed for Installation" on page 30
5.	Inventorying the parts	"Verify the Main Switch Kit Contents" on page 30
6.	Routing data, power, and management cables	"Route Cables" on page 34
7.	Attaching the switch to the rack	"Install the Switch in the Rack" on page 37
8.	Attaching management cables	"Connect Management Cables" on page 43
9.	Attaching power cords	"Attach Power Cords" on page 42
10.	Attaching data cables	"Connect Data Cables" on page 44
11.	Powering on the switch	"Power On the Switch" on page 48

Related Information

- "Management Connection Overview" on page 19

Cable Connections (Oracle Switch ES2-72)



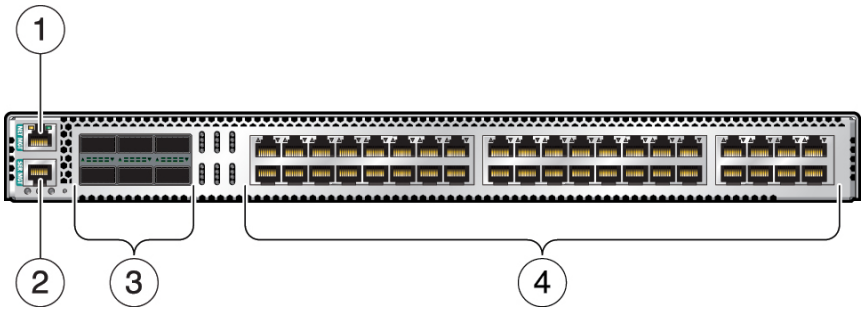
No.	Description	Links
1	NET MGT port	"NET MGT Port" on page 20
2	SER MGT port	"SER MGT Port" on page 21
3	QSFP+ ports 1 to 24	"QSFP+ Data Cable Overview" on page 24
3	QSFP+ ports 25 to 48	"QSFP+ Data Cable Overview" on page 24
3	QSFP+ ports 49 to 72	"QSFP+ Data Cable Overview" on page 24

Related Information

- "Installation Task Overview" on page 9

- “Cable Connections (Oracle Switch ES2-64)” on page 11
- “Power Supplies and Fans” on page 12
- “Connect Data Cables” on page 44

Cable Connections (Oracle Switch ES2-64)

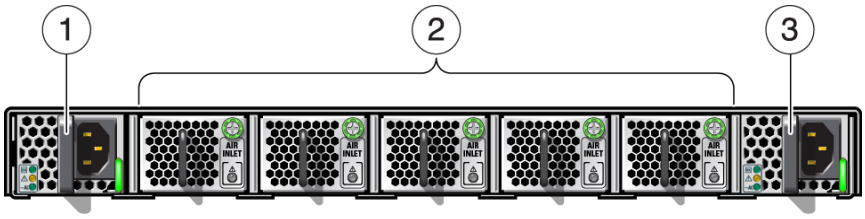


No.	Description	Links
1	NET MGT port	“NET MGT Port” on page 20
2	SER MGT port	“SER MGT Port” on page 21
3	QSFP+ ports 1 to 24	“QSFP+ Data Cable Overview” on page 24
4	10GBASE-T ports 25 to 64	“10GBASE-T Data Cable Overview” on page 24

Related Information

- “Installation Task Overview” on page 9
- “Cable Connections (Oracle Switch ES2-72)” on page 10
- “Power Supplies and Fans” on page 12
- “Connect Data Cables” on page 44

Power Supplies and Fans



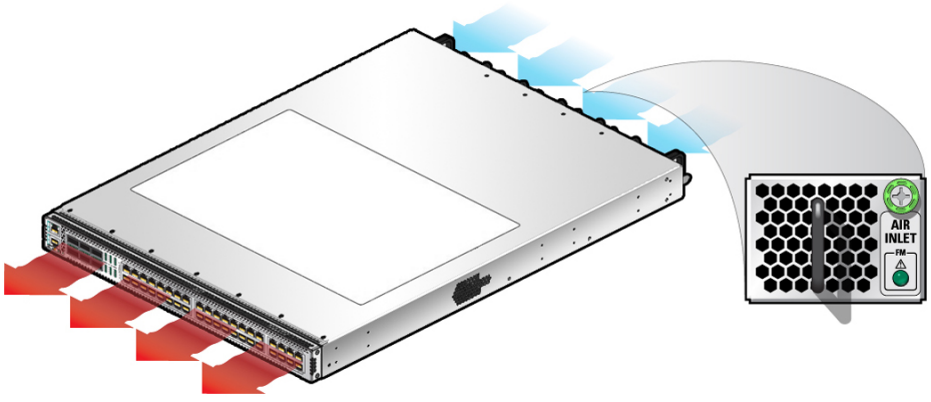
No.	Description	Service Information
1	Power supply 0	*Switch Service*, servicing power supplies
2	Fan modules 0 to 4	*Switch Service*, servicing the fan module
3	Power supply 1	*Switch Service*, servicing power supplies

Power supplies have two options.

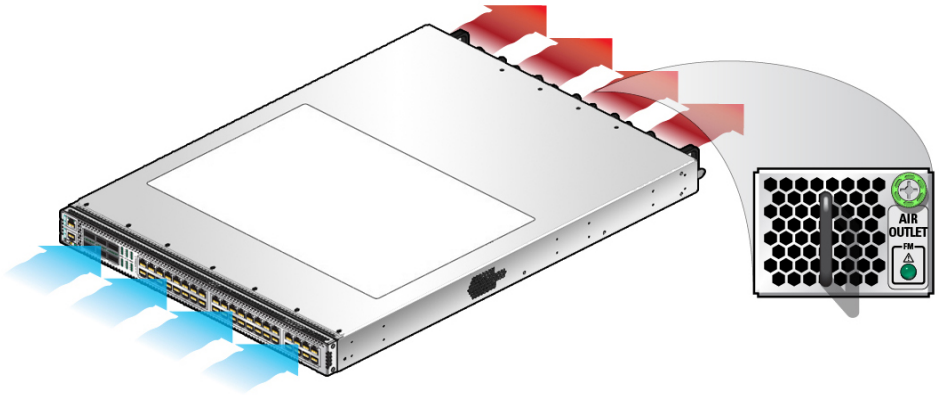
- AC
- DC

Fans have two options.

- Reverse fans — Reverse fans are labeled AIR INLET. Heated exhaust air exits through the cable connector side of the switch.



- Forward fans — Forward fans are labeled AIR OUTLET. Heated exhaust air exits through the fan side of the switch.



Related Information

- “Installation Task Overview” on page 9
- “Cable Connections (Oracle Switch ES2-72)” on page 10
- “Cable Connections (Oracle Switch ES2-64)” on page 11
- “Power Cord Specifications” on page 22
- “Attach Power Cords” on page 42

Overheating From Air Recirculation

Caution - When the switch is installed in a cabinet, overheating can occur if the switch uses reverse fans, and the rack rails are attached to the front of the cabinet.

To prevent this recirculation of heated air, place longer rack unit products immediately above or below the switch to direct exhaust air out of the rear of the cabinet.

Related Information

- “Power Supplies and Fans” on page 12
- “Install the Switch in the Rack” on page 37

Confirming Specifications

These topics provide the specifications and requirements of the switch.

Related Information

- “Understanding the Installation”
- “Understanding Cabling”
- “Preparing for Installation”
- “Installing the Switch”

Physical Specifications

Description	U.S.	Metric
Rack units	1U	1U
Height	1.77 in.	4.5 cm
Depth	23.7 in.	60.3 cm
Width	17.2 in.	43.8 cm
Weight	28.6 lb	13 kg

Related Information

- “Electrical Specifications” on page 16
- “Environmental Specifications” on page 16

Electrical Specifications

The switch can be ordered with either two AC power supplies or two DC power supplies.

AC power supplies have these specifications.

Description	Value	Notes
AC voltage	100 to 120 VAC / 200 to 240 VAC	Single phase, 50/60 Hz
AC current	5.5 A	Maximum expected per input
	9.0 A	Maximum allowable per input

DC power supplies have these specifications.

Description	Value	Notes
DC voltage	–48 to –60 VDC	
DC current	10 A	Maximum expected per input
	19 A	Maximum allowable per input

Related Information

- “Physical Specifications” on page 15
- “Environmental Specifications” on page 16
- “Power Cord Specifications” on page 22

Environmental Specifications

This topic includes:

- Airflow direction
- Temperature, humidity, and elevation specifications
- Acoustic specifications

TABLE 1 Airflow Direction

Fan type	Fan label	Direction
Forward fan	AIR OUTLET	Air flows from cable sockets to fans
Reverse fan	AIR INLET	Air flows from fans to cable sockets

TABLE 2 Temperature, Humidity, and Elevation Specifications

Description	Operating	Metric	Nonoperating	Metric
	U.S.		U.S.	
Temperature	59˚F to 89.6˚F	15˚C to 32˚C	-40 to 158°F	-40 to 70°C
Humidity	10-90% noncondensing	10-90% noncondensing		
Relative humidity	20% to 80% noncondensing, 80˚F maximum wet bulb	20% to 80% noncondensing, 27˚C maximum wet bulb	5 to 95% noncondensing	5 to 95% noncondensing
Elevation	Maximum 10,006 feet at 77˚F 2,953 feet at 89.6˚F Derate maximum ambient 1.8 ˚F per 984 feet above 2952 feet.	Maximum 3050 meters at 25˚C900 meters at 32˚CDerate maximum ambient 1˚C per 300 meters above 900 meters.	0 to 39370 feet	12000 meters

TABLE 3 Acoustic Noise Emission Declaration for Oracle Switch ES2-64

Description	With Inlet Fans	With Outlet Fans
Acoustic idle power (LWAd)	7.4 B	7.2 B
Acoustic operating power (LWAd)	7.4 B	7.2 B

TABLE 4 Acoustic Noise Emission Declaration for Oracle Switch ES2-72

Description	With Inlet Fans	With Outlet Fans
Acoustic idle power (LWAd)	7.5 B	7.5 B
Acoustic operating power (LWAd)	7.5 B	7.5 B

Related Information

- “Physical Specifications” on page 15
- “Electrical Specifications” on page 16

Understanding Cabling

These topics describe the types, connectors, and handling of cables supported by the switch.

Related Information

- “Understanding the Installation”
- “Confirming Specifications”
- “Preparing for Installation”
- “Installing the Switch”

Understanding Management and Power Cabling

These topics provide management and power cabling information.

Related Information

- “Understanding Data Cabling” on page 23

Management Connection Overview

The switch is managed at the management console, which is either a 10/100/1000 Ethernet connection at the NET MGT port or a serial device attached to the SER MGT port.

The NET MGT connection is the default means of communicating with the SP. The SP has a DHCP client in operation and requires the Ethernet network to have a DHCP server. The DHCP server must be configured with the MAC address of the SP, so the server can provide an IP address to the SP upon booting. If a DHCP server is not available, then the SER MGT connection is used.

The advantage of the NET MGT connection over the SER MGT connection is that administration of the gateway can happen from anywhere on the network. There is no cable length constraint for the network management route because of the re-amplification, filtering, and processing that happens at each hub or switch within the Ethernet network. No network management cable should be any longer than 100 meters.

The SER MGT connection requires a serial connection to a serial device management console. The serial device management console can be a serial terminal, a terminal server, or a serial connection running on a system or laptop.

If no DHCP server is available on the management network, the SER MGT port must be used to configure the NET MGT port. Because of the nature of the serial signal, a serial management cable cannot be used reliably if it is more than 10 meters long.

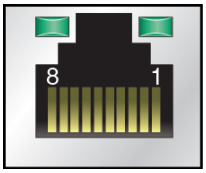
Related Information

- “NET MGT Port” on page 20
- “SER MGT Port” on page 21

NET MGT Port

The NET MGT port is a 1GBASE-T Ethernet RJ-45 connector that provides access to the SEFOS and Oracle ILOM CLI and web interfaces running on the SP. The port is located at the upper left corner of the switch front panel. See “Cable Connections (Oracle Switch ES2-72)” on page 10 or “Cable Connections (Oracle Switch ES2-64)” on page 11.

The figure and table describe the pinouts of the NET MGT port.



Pin	Signal
1	Transmit Data+ (TXD+)
2	Transmit Data- (TXD-)
3	Receive Data+ (RXD+)
4	Not used
5	Not used
6	Receive Data- (RXD-)
7	Not used
8	Not used

Related Information

- “Management Connection Overview” on page 19
- “SER MGT Port” on page 21
- “Cable Connections (Oracle Switch ES2-64)” on page 11
- “Connect Data Cables” on page 44

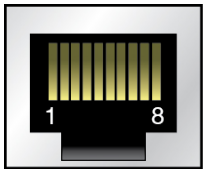
SER MGT Port

The SER MGT port is an RJ-45 connector that provides RS-232 access to the SEFOS and Oracle ILOM CLI interfaces running on the SP. The port is located at the lower-left corner of the switch front panel. See “Cable Connections (Oracle Switch ES2-72)” on page 10 or “Cable Connections (Oracle Switch ES2-64)” on page 11.

The serial device must be configured to these parameters:

- 9600 baud (default, can be set to any standard rate up to 115200)
- 8N1 — eight data bits, no parity, one stop bit
- Software flow control (XON/XOFF) disabled

The figure and table describe the pinouts of the SER MGT connector.



Pin	Signal Description
1	Request To Send (RTS)
2	Data Terminal Ready (DTR)
3	Transmit Data (TXD)
4	Ground
5	Ground
6	Receive Data (RXD)
7	Data Set Ready (DSR)
8	Clear To Send (CTS)

Related Information

- “Management Connection Overview” on page 19
- “NET MGT Port” on page 20
- “Cable Connections (Oracle Switch ES2-64)” on page 11
- “Connect Data Cables” on page 44

Power Cord Specifications

The power supplies are in an N+N redundancy. Line power must be provided from two sources, A and B, for redundant operation.

The switch accessory kit should contain two power cords that are specific to your country or application. This table describes the power cords available.

Caution - Install and route power cabling only in a manner that complies with federal, state, and local electrical codes.

Cable Part Number	Description
X311L-N (180-1097)	North America/Asia, IEC 320 C13 to NEMA 5-15P - 15A/125V 2.5M Black, RoHS:Y
X312E-N (180-1982)	China, IEC 320 C13 to GB 2099/GB 1002 - 10A/250V 2.0M, RoHS:Y
X312F-N (180-1999)	Argentina, IEC 320 C13 to IRAM 2073 - 10A/250V 2.0M Black, RoHS:Y
X312G-N (180-1662)	Korea, IEC 320 C13 to KSC 8305 - 15A/250V 2.0M Black, RoHS:Y
X312L-N (180-1993)	Continental Europe, IEC 320 C13 to CEE 7/7 10A/250V 2.0M Black, RoHS:Y
X314L-N (180-1994)	Swiss, IEC 320 C13 to SEV 1011 - 10A/250V 2.0M Black, RoHS:Y
X317L-N (180-1997)	U.K., IEC 320 C13 to BS 1363 - 10A/250V 2.0M Black, RoHS:Y
X320A-N	North America/Asia,2.5m,6-15P,10A,C13
X332A-N (180-2121)	Taiwan, IEC 320 C13 to NEMA 5-15P - 10A/125V 2.5M Black, RoHS:Y
X332T-N	INTL, 4.0m, IEC309-IP44, 10A, C13

Cable Part Number	Description
X333A-25-10-BR-N	Brazil, 2.5m, NBR14136, 10A, C13
X333A-25-10-IL-N	Israel, 2.5m, SI-32, 10A, C13
X333A-25-10-IN-N	India, 2.5m, IS1293, 10A, C13
X333A-25-10-ZA-N	South Africa, 2.5m, SANS164, 10A, C13
X333A-25-15-JP-N	Japan, 2.5m, PSE 5-15, 15A, C13
X333A-25-15-TW-N	Taiwan, 2.5M, CNS10917, 15A, C13
X333F-25-15-JP-N	Japan, 2.5m, PSE 6-15, 15A, C13
X333V-20-15-C14-N	Rack Jmpr Cbl, Straight, 2.0m, C14, 15A, C13
X333V-30-15-C14-N	Rack Jmpr Cbl, Straight, 3.0m, C14, 15A, C13
X340L-N	North America/Asia, 4.0m, L6-20P, 15A, C13
X383L-N (180-1995)	Danish, IEC 320 C13 to Asfnit 107 - 10A/250V 2.0M Black, RoHS:Y
X384L-N (180-1996)	Italian, IEC 320 C13 to CEI 23-16/VII - 10A/250V 2.0M Black, RoHS:Y
X386L-N (180-1998)	Australian, IEC 320 C13 to AS 3112 - 10A/250V 2.0M Black, RoHS:Y
X9237-1-A-N	Jumper, 1.0m, C13, 13A, C14
X9238-1-A-N	Jumper, 2.5m, C13, 13A, C14
XSR-JUMP-1MC13-N	Jumper Cable, SR2, 1.0m, C13, 13A, C14RA, QTY 1
XSR-JUMP-2MC13-N	Jumper Cable, SR2, 2.0m, C13, 13A, C14RA, QTY 1

Related Information

- “Management Connection Overview” on page 19
- “NET MGT Port” on page 20
- “SER MGT Port” on page 21
- “Electrical Specifications” on page 16
- “Attach Power Cords” on page 42

Understanding Data Cabling

These topics provide data cabling information.

- “QSFP+ Data Cable Overview” on page 24
- “10GBASE-T Data Cable Overview” on page 24
- “Data Cable Cautions” on page 25
- “Data Cable Guidelines” on page 26

Related Information

- “Understanding Management and Power Cabling” on page 19

QSFP+ Data Cable Overview

The switch's QSFP+ ports support the following types of cables:

- 10 Gbyte/1 Gbyte dual speed fiber (300m maximum)
- 10 Gbps direct attach copper (5m maximum)

A passive copper data cable is a single-part unit. The cable and the connectors are a single combined assembly.

An active fiber QSFP+ data cable is a three-part unit, where the cable and the optical transceivers are separate components. You must assemble this type of cable before connecting it.

Related Information

- “10GBASE-T Data Cable Overview” on page 24
- “Data Cable Cautions” on page 25
- “Data Cable Guidelines” on page 26
- “Connect Data Cables” on page 44

10GBASE-T Data Cable Overview

Modulation in the host ports uses frequencies of up to 500 MHz to achieve 10Gbps transmission over copper twisted-pair cabling. This modulation requires suppression of both external and internal noise up to 500 MHz.

The 10GBASE-T ports on the switch support the following types of twisted-pair copper cables:

- Category 7, shielded (100m)
- Category 6A, shielded and unshielded (100m)
- Category 6, shielded and unshielded (55m)
- Category 5e, shielded and unshielded (55m)

Related Information

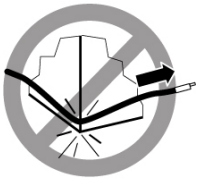
- “QSFP+ Data Cable Overview” on page 24
- “Data Cable Cautions” on page 25
- “Data Cable Guidelines” on page 26

■ “Connect Data Cables” on page 44

Data Cable Cautions

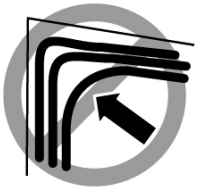
Caution - Data cables with laser transceivers *must* be Class I.

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



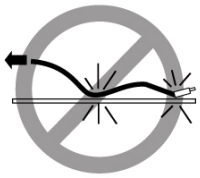
Do not pull the cable out of the shipping box, through any opening, or around any corners. Unroll the cable as you lay it down and move it through turns.

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

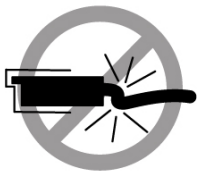


Do not pack the cable to fit a tight space. Use an alternative cable route.

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 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

- "QSFP+ Data Cable Overview" on page 24
- "10GBASE-T Data Cable Overview" on page 24
- "Data Cable Guidelines" on page 26
- "Route Cables" on page 34

Data Cable Guidelines

Proper data cable installation requires the following:

1. Plan the cable routes and cable length needs.

   See "QSFP+ Data Cable Overview" on page 24 and "10GBASE-T Data Cable Overview" on page 24.
2. Ensure that cable route turns are larger than 85 mm (3.4 inches) radius for optical cables.

   Find alternative routes for turns that are tighter.
3. Secure the cable to hard points and bundle it with soft, hook-and-loop fasteners.
4. Mediate the slack between securing points to maintain minimal cable tension and proper support.
5. Label the ends of cables to identify their routes.
6. Rest the cable connectors on a stable surface when they are not connected.

Related Information

- "QSFP+ Data Cable Overview" on page 24

Preparing for Installation

These topics describe preliminary information and procedures to complete before installing the switch.

Related Information

- “Understanding the Installation”
- “Confirming Specifications”
- “Understanding Cabling”
- “Installing the Switch”

ESD Precautions

A grounded antistatic wrist strap is shipped with the switch. Electronic equipment is susceptible to damage by static electricity. Use a grounded antistatic wrist strap, foot strap, or equivalent safety equipment to prevent ESD when you install or service the switch.

Caution - To protect electronic components from electrostatic damage, which can permanently disable the switch or require repair by service technicians, place components on an antistatic surface, such as an antistatic discharge mat, an antistatic bag, or a disposable antistatic mat. Wear an antistatic grounding strap connected to a metal surface on the switch when you work on switch components.

Related Information

- “Tools Needed for Installation” on page 30

Tools Needed for Installation

To install the switch, you must have these tools:

- No. 2 Phillips screwdriver
- ESD mat and grounding strap

In addition, you must provide a serial device management console, if you manage the switch from the SER MGT port, or if you will configure the NET MGT port. The serial device can be:

- ASCII terminal
- Workstation or laptop with serial port
- Terminal server
- Patch panel connected to a terminal server

The serial device needs serial cables, null modems, and appropriate adapters for operation.

Related Information

- “ESD Precautions” on page 29

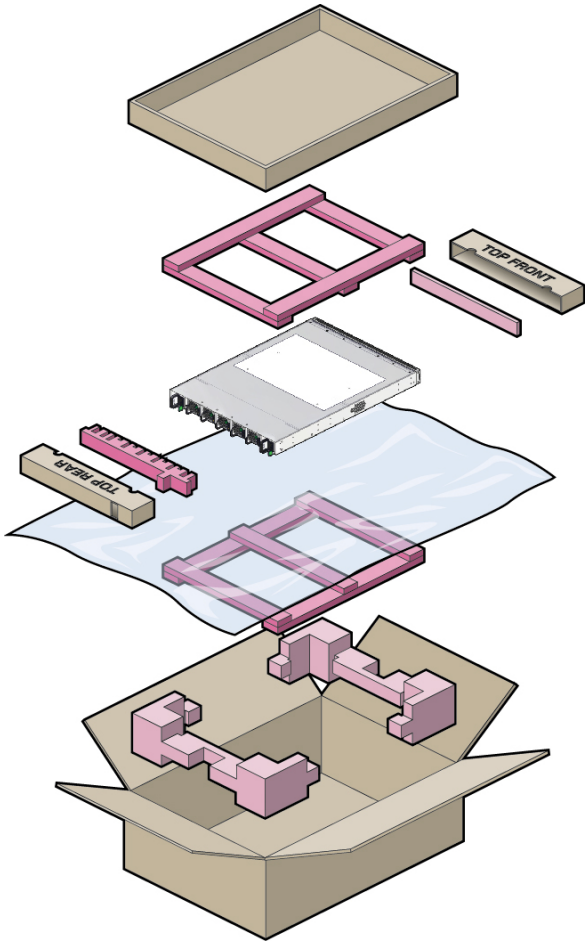
▼ Verify the Main Switch Kit Contents

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

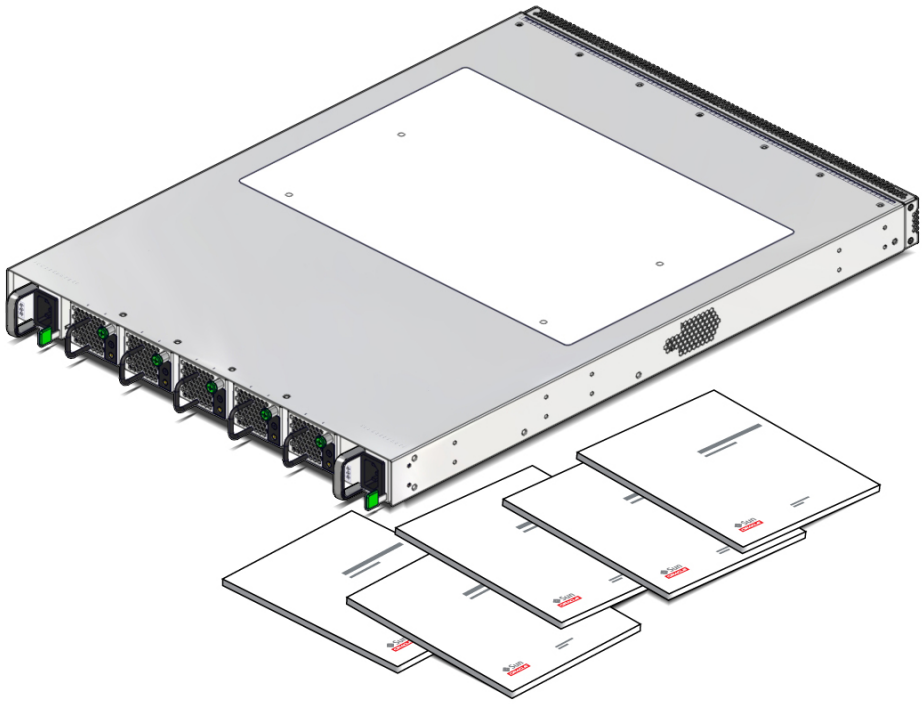
   See “Installation Task Overview” on page 9.

2. **Carefully unpack the switch and the rack mount kit.**

   Do not discard the packing materials in the event that the switch must be returned to the factory.



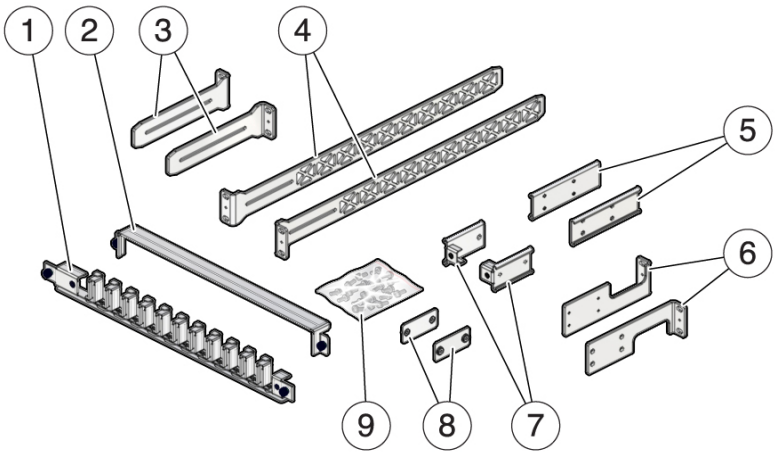
3. **Verify that the switch kit contains one switch with power supplies and fan modules installed.**



4. **Verify that the correct fan and power options are installed.**

   - Check that the fan modules provide the correct direction of airflow (forward or reverse). See “Environmental Specifications” on page 16.
   - Check that the power supplies are the correct AC or DC type. See “Electrical Specifications” on page 16.

5. **Verify that your rack rail kit is complete.**



No.	Description
1	Cable management assembly (CMA)
2	CMA cover
3	Short rail brackets (2)
4	Long rail brackets (2)
5	Front mount brackets (2)
6	Rear mount brackets (2)
7	CMA slides (2)
8	Slide attachment plates (2)
9	Assorted screws and cage nuts: ■ M3 x 6 mm screws (16) ■ M6 x 12 mm screws (10) ■ No. 10-32 x 1/2 in screws (10) ■ No. 10-32 x 3/4 in screws (4) ■ M4 x 10 mm screws (4) ■ M6 x 16 mm (4) ■ M6 cage nuts (6)

6. **Route the data, power, and management cables.**

   See “Route Cables” on page 34.

Related Information

- “Route Cables” on page 34

▼ Route Cables

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

   See “Installation Task Overview” on page 9.

2. **Determine whether the data cables must be routed to the front or rear of the cabinet.**

   The type of fans in your switch determine where you should route the cables. See “Power Supplies and Fans” on page 12 for descriptions of forward and reverse fans.

   - **If your switch has reverse fans, plan on routing the cables to the rear of the cabinet.**
   - **If your switch has forward fans, plan on routing the cables to the front of the cabinet.**

3. **At the remote hosts, begin attaching the data cables to the appropriate connectors.**

4. **Route and bundle the data cables to and through the rack, following the appropriate cautions and guidelines.**

   See “Data Cable Cautions” on page 25 and “Data Cable Guidelines” on page 26.

5. **Bring the data cables to the location in the rack where the switch will install.**

6. **Connect the management cables to the appropriate Ethernet port or serial device.**

7. **Route the management cables to and through the rack, bundling them with the data cables, if convenient to do so.**

8. **Bring the management cables to the location in the rack where the switch will install.**

9. **Ensure that line power is off at the rack.**

   Note - If this is not possible, go to Step 11.

10. **Insert the switch power cord plugs into the line power receptacles.**

11. **Route the power cords through the rack, bundling them if necessary.**

12. **Bring the power cords to the location in the rack where the switch will install.**

13. **Attach rails to the switch.**

See “Install the Switch in the Rack” on page 37.

Related Information

- “Verify the Main Switch Kit Contents” on page 30
- “Data Cable Cautions” on page 25
- “Data Cable Guidelines” on page 26

Installing the Switch

These topics describe installing the switch into the rack.

Related Information

- "Understanding the Installation"
- "Confirming Specifications"
- "Understanding Cabling"
- "Preparing for Installation"

▼ Install the Switch in the Rack

Note - The cable management assembly cannot used at the front of a cabinet if you are required to close the cabinet doors after installing the switch.

---

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

   See "Installation Task Overview" on page 9.

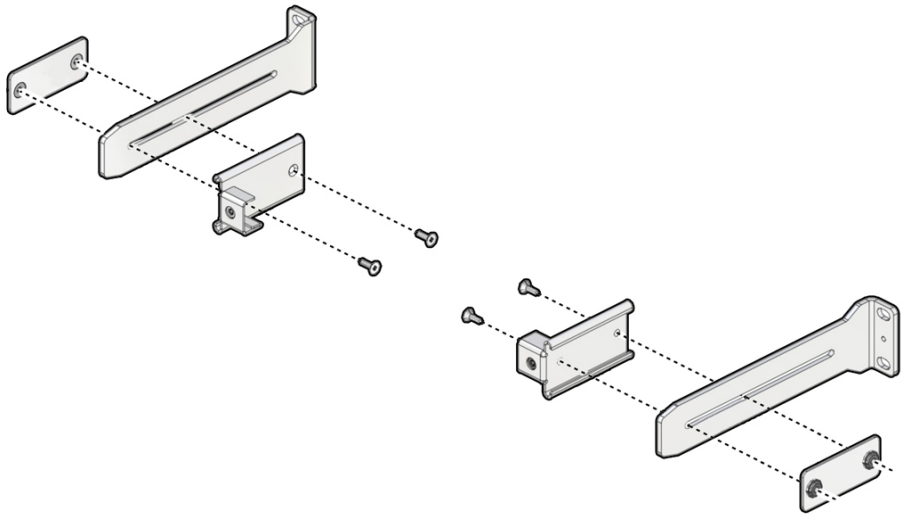
2. **Assemble the CMA brackets.**

Note - Skip this step if you are installing the switch at the front of a cabinet where the doors must be kept closed.

---

   a. **Place a cable management slide onto a short rail bracket.**

      Orient the parts so that the flanges on the slide and the bracket face in opposite directions.



b. Use a No. 2 Phillips screwdriver and two M4 x 10 mm flathead screws to attach a slide attachment plate to the CMA slide and the short rail bracket.

c. Assemble the second bracket in the same way.

3. Determine where you will attach the rack mount rails in a rack or cabinet.

The type of fans in the switch determine whether you choose the front or the rear of the rack or cabinet as the attachment point. This choice is particularly critical if you are installing the switch in a closed cabinet.

See "Power Supplies and Fans" on page 12 for descriptions of forward and reverse fans.

- **Forward fans — Attach the rack mount rails to the front of the cabinet.**
- **Reverse fans — Attach the rack mount rails to the rear of the cabinet.**

4. Attach the rack mount rails to the rack.

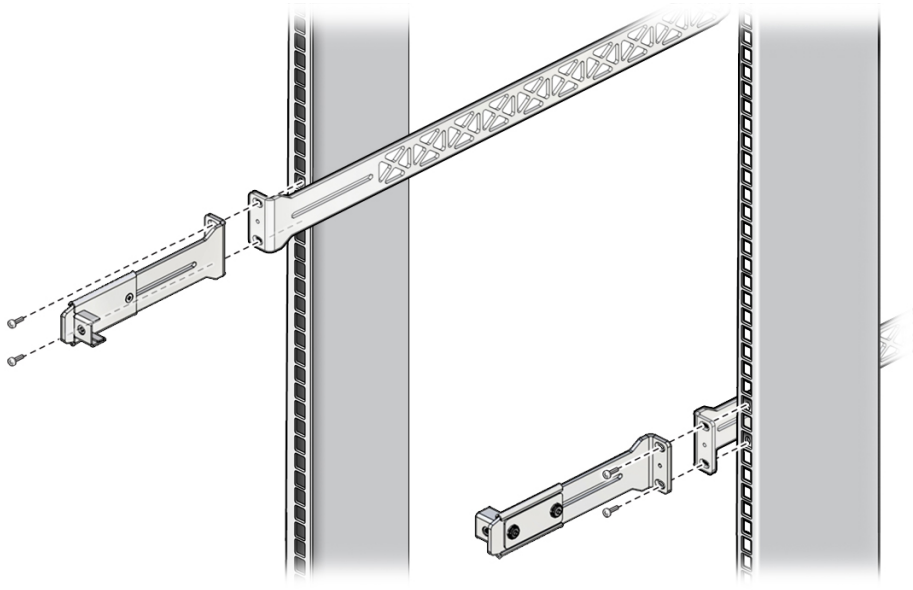
a. Locate the appropriate screws in the package of assorted screws and nuts.

- **If the rack has threaded screw holes, use either M6 x 12 mm or No. 10-32 x 1/2" screws.**

- **If the rack does not have threaded screw holes, use M6 screws and M6 cage nuts.**

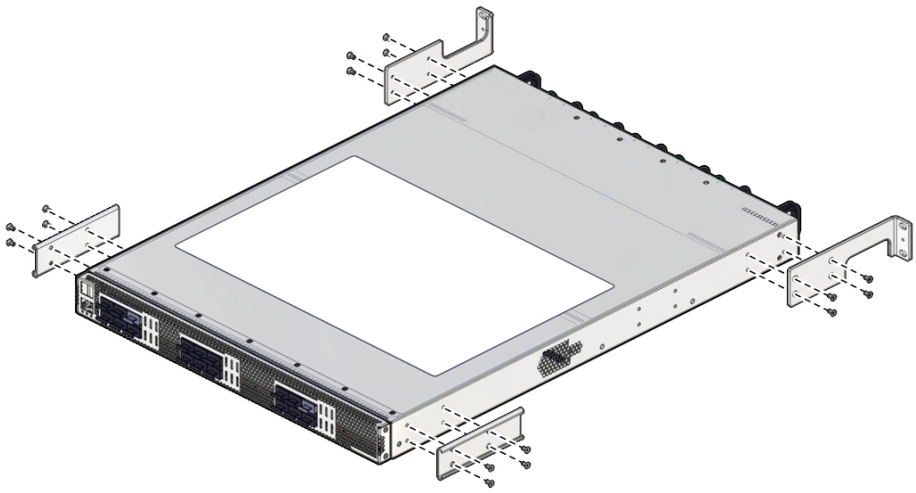
b. **Attach the rack mount rails.**

- **If you are using the CMA, attach the CMA brackets and the long rail brackets.**

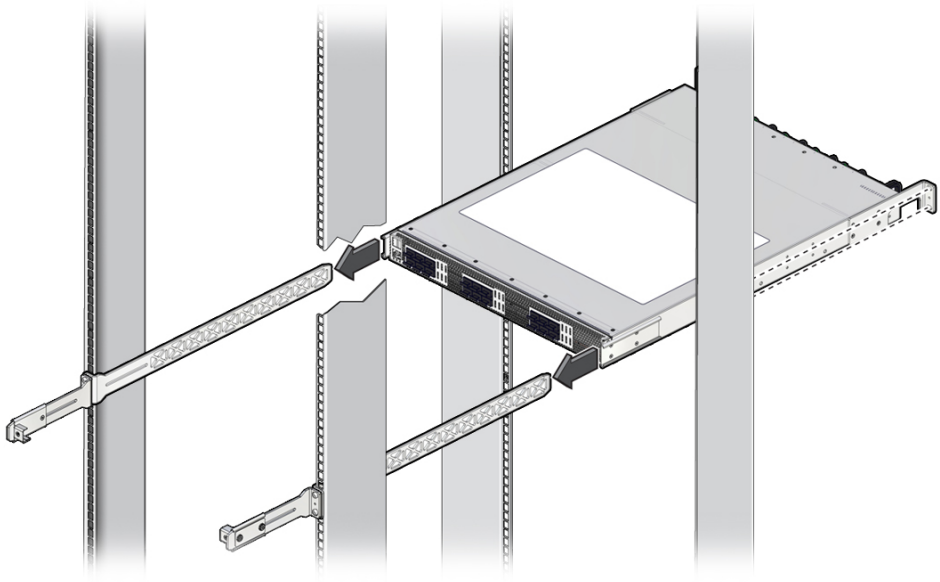


- **If you are not using the CMA, attach only the long rail brackets.**

5. **Use M3 x 6 mm screws to attach slides and brackets to the sides of the switch.**



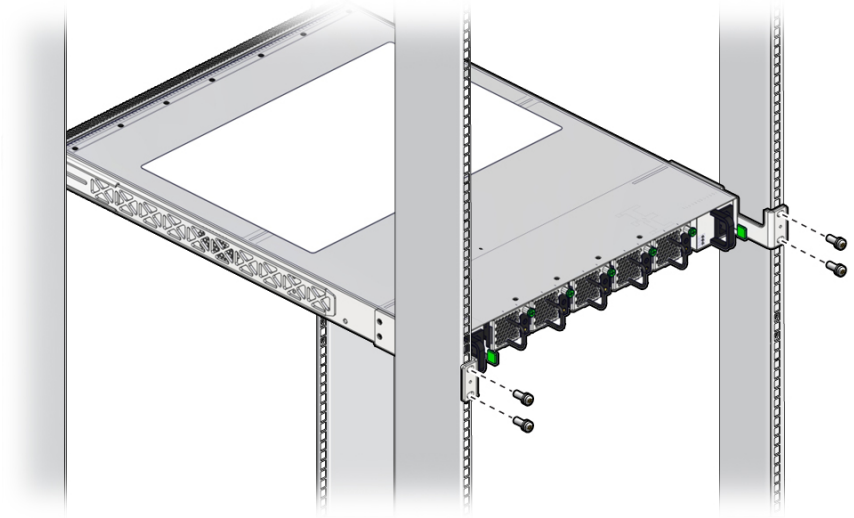
6. **Slide the switch onto the long rail brackets.**



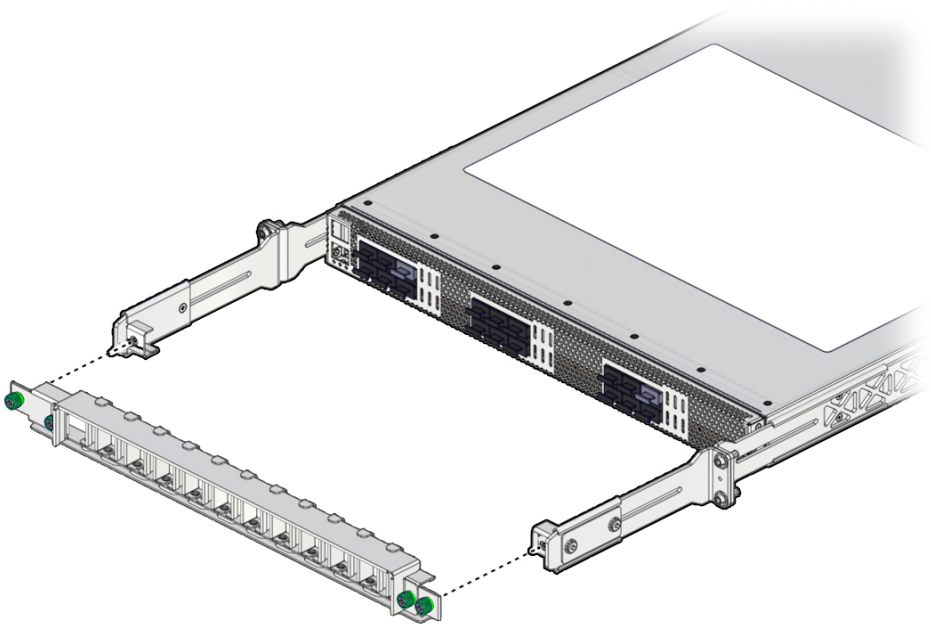
7. **Fasten the mount brackets to the rack.**

   Use M6x12 mm or No. 10-32/1/2” screws as appropriate for the rack.

If the rack does not have threaded holes, install M6 cage nuts in the rack rails.



8. **If you are using the CMA, attach the CMA bracket and CMA cover to the short rail brackets using the outer green thumbscrews.**



9. **Attach the power cords.**

   See “Attach Power Cords” on page 42.

Related Information

- “Attach Power Cords” on page 42
- “Connect Data Cables” on page 44

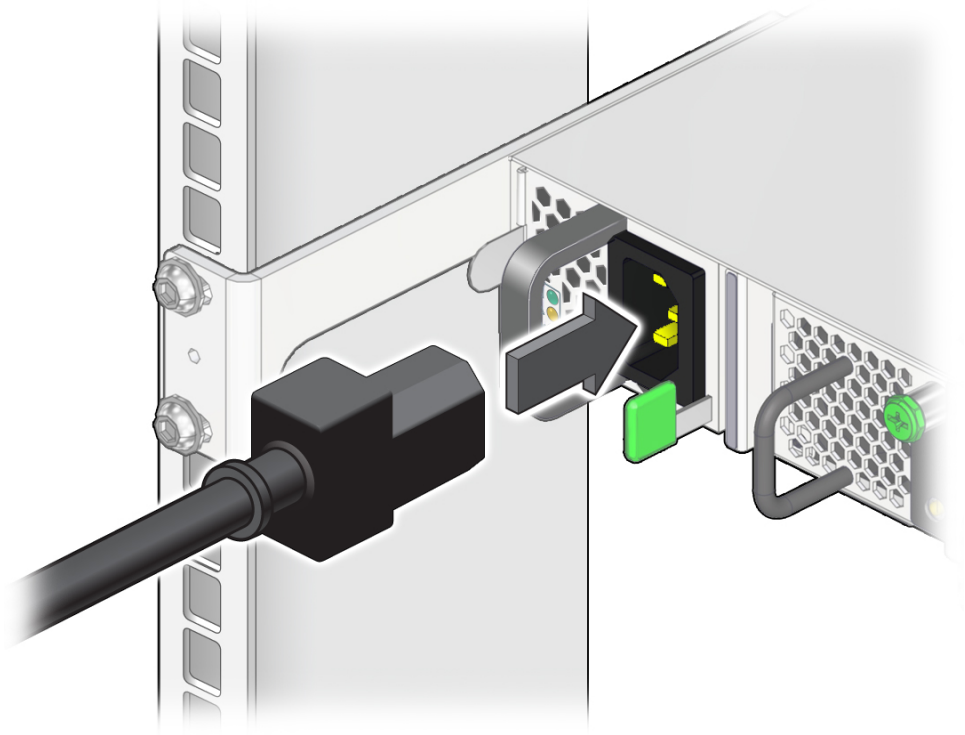
▼ Attach Power Cords

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

   See “Installation Task Overview” on page 9.

2. **Ensure that the two power cords are not energized.**

3. **Plug the power cords into the appropriate power supplies.**



4. **Connect data and management cables to the switch.**

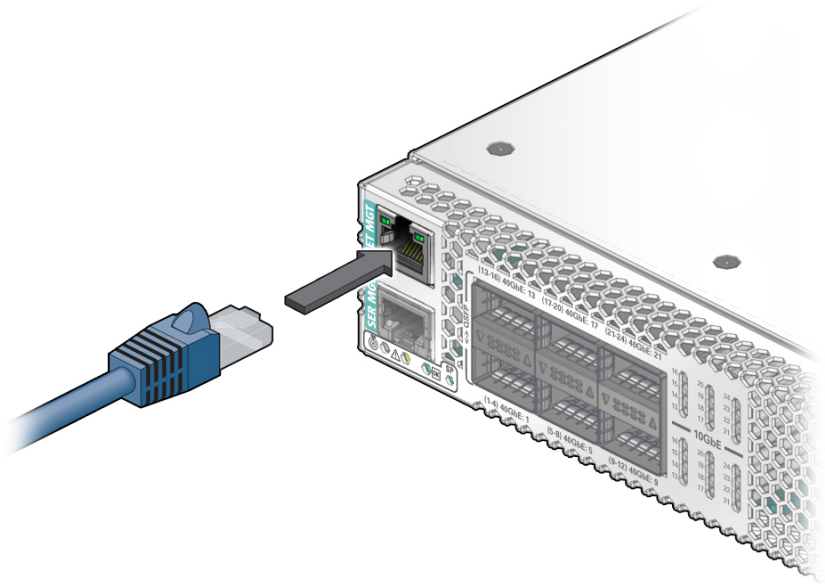
   See “Connect Data Cables” on page 44.

Related Information

- “Install the Switch in the Rack” on page 37
- “Connect Data Cables” on page 44
- “Power On the Switch” on page 48

▼ Connect Management Cables

1. **Connect an RJ-45 cable between the NET MGT port and a network.**



2. **Connect an RJ-45 cable between the SER MGT port and the serial port on a laptop, PC, or terminal.**

3. **Connect data cables.**

   See “Connect Data Cables” on page 44.

Related Information

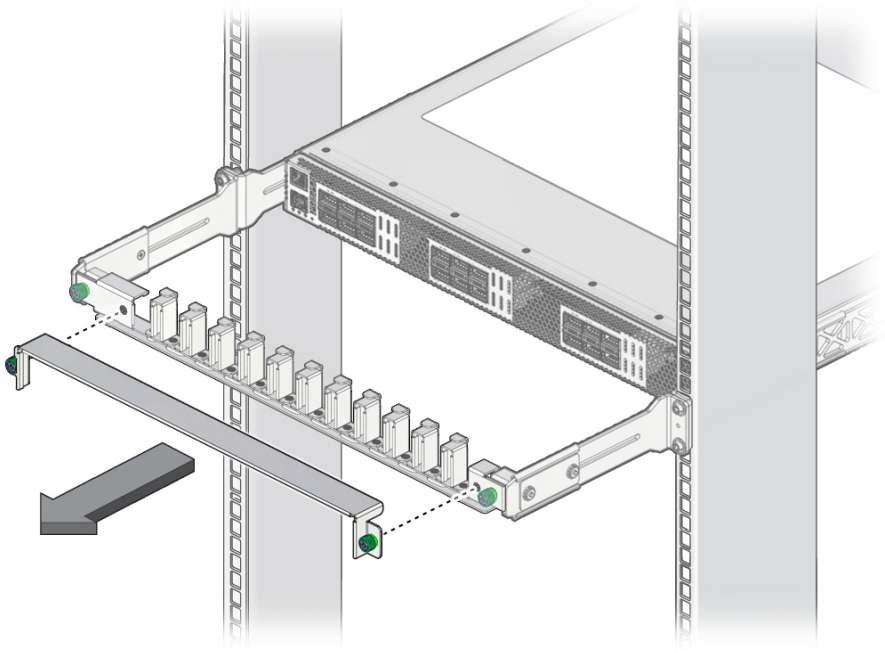
- “NET MGT Port” on page 20
- “SER MGT Port” on page 21

▼ Connect Data Cables

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

   See “Installation Task Overview” on page 9.

2. **If you are using the CMA, loosen the inner green captive thumbscrews and remove the CMA cover.**



3. **Identify where the cable installs.**

   See “Cable Connections (Oracle Switch ES2-72)” on page 10 or “Cable Connections (Oracle Switch ES2-64)” on page 11.

4. **Install a cable.**

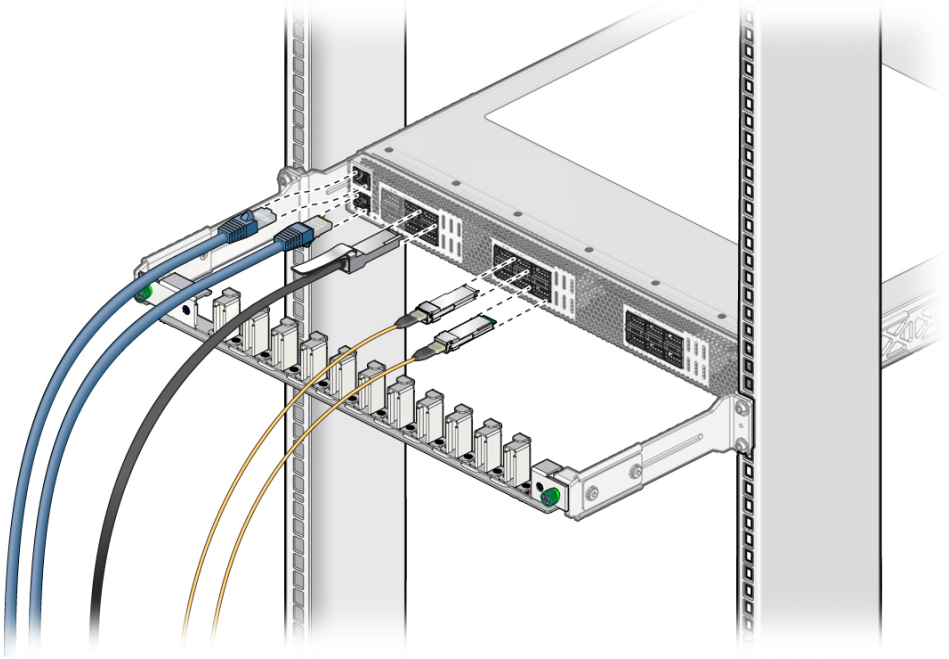
   a. **If installed, remove the protective dust cap on the cable.**

   b. **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.

   c. **Hold the transceiver or connector, and slide it into the opening.**

      - **Orient a QSFP or QSFP+ cable with the tab up.**
      - **Orient a 10GBASE-T connector with the tab up or down, according to the slot orientation.**



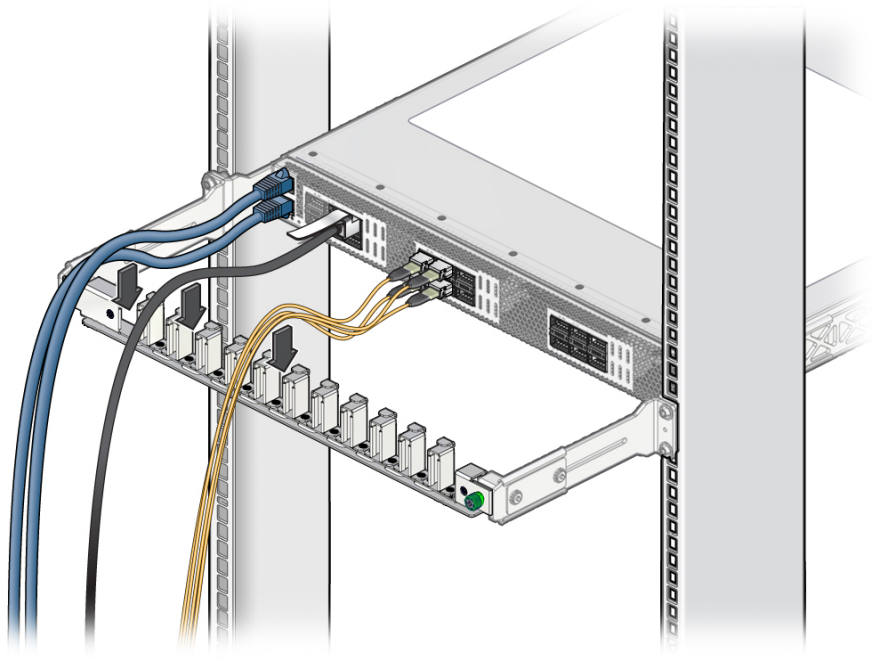
d. **Applying even pressure to both sides of the connector, push the cable in until it is firmly seated and clicks in the slot.**

e. **Repeat Step 3 through Step 4.d for all connectors.**

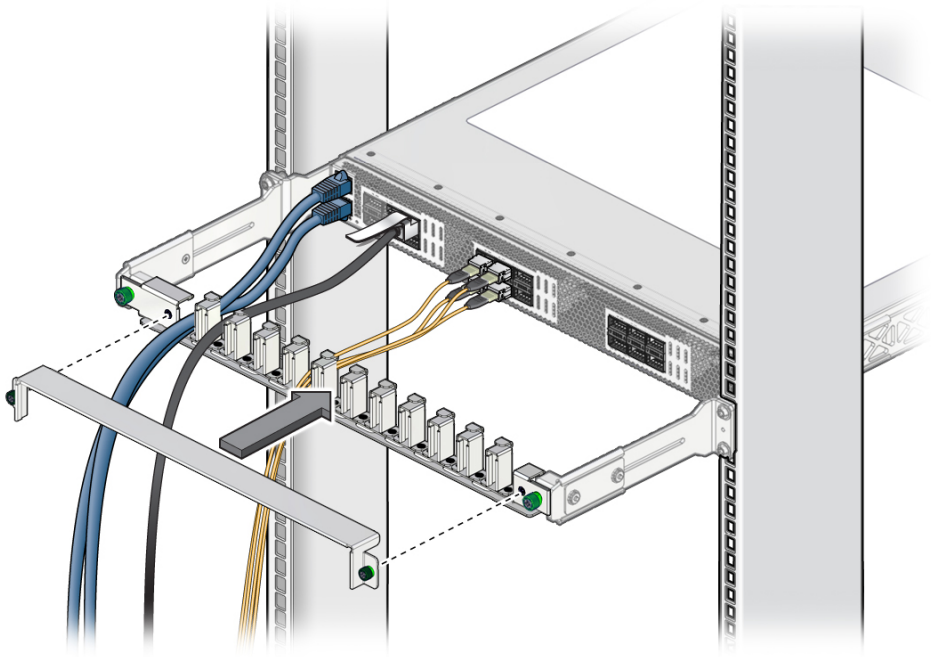
5. **If you are using the CMA, arrange the cables in the CMA.**

   a. **Place the cable into the open slot in the CMA.**

      Four cables fit into each slot in the CMA.



b. **Replace the CMA cover, and tighten the green captive thumbscrews.**



6. **If there is a possibility of heated air recirculating into the switch, place longer rack units above and below the switch to direct heated air out of the cabinet.**
   See “Overheating From Air Recirculation” on page 13.

7. **Power on the switch.**
   See “Power On the Switch” on page 48.

Related Information

- “Install the Switch in the Rack” on page 37
- “Attach Power Cords” on page 42

▼ Power On the Switch

1. **Perform one or both of the following to energize the power supplies.**
   - **Plug the power cords into the line power receptacles.**
   - **Energize the circuit breakers so that the line power receptacles are live.**

2. **Verify that the status LEDs for each power supply indicate normal operation.**

   The AC LED lights and in a moment, the OK LED should light. The Attention LED should be unlit.

   Note - At this time, power is being supplied to the SP. The SP is effectively on and booting up. You might see the boot sequence on the management console.

3. **Verify that the fans are spinning.**

   You should feel air at the fan module, and the fan Attention LEDs should be unlit.

4. **Verify that the switch System OK LED lights.**

5. **Connect to the SP.**

   Refer to *Switch Configuration*, connecting to the serial console.

Related Information

- “Attach Power Cords” on page 42
- Switch *Configuration*, administering the switch

Glossary

10

10GbE 10 Gigabit Ethernet.

A

ACL Access control list.

C

CMA Cable management assembly.

D

DHCP Dynamic Host Configuration Protocol.

G

GARP Generic Attribute Registration Protocol.

GMRP GARP Multicast Registration Protocol.

GVRP GARP VLAN Registration Protocol.

L

LA Link aggregation.

O

Oracle ILOM Oracle Integrated Lights Out Manager. Oracle ILOM provides advanced server processor hardware and software to manage and monitor servers.

Oracle Switch ES2-64 An Ethernet switch by Oracle. Oracle Switch ES2-64 provides six QSFP ports and 40 10GBASE-T RJ-45 ports. See also switch .

Oracle Switch ES2-72 An Ethernet switch by Oracle. Oracle Switch ES2-72 provides 18 QSFP ports. See also switch .

OSPF Open Shortest Path First protocol.

Q

QSFP+ Quad small form-factor pluggable. QSFP+ is a hot-pluggable transceiver that provides 40 Gb/s or 4 x 10 Gb/s of data transfer.

R

RIP Routing Information Protocol.

RSTP Rapid Spanning Tree Protocol.

S

SEFOS Sun Ethernet Fabric Operating System. A full-featured fabric and switch management software package for configuring and monitoring the switches network infrastructure.

SEL System event log. The switch includes a number of replaceable component sensors that generate entries in the SEL when the sensor crosses a threshold. Many of these readings are used to adjust the fan speeds and perform other actions, such as illuminating LEDs and powering off the switch.

SR Short range. A short range SFP+ optical transceiver module.

STP Spanning-Tree Protocol.

switch Shortened name for the Oracle Switch ES2-64 and Oracle Switch ES2-72. See also Oracle Switch ES2-64 and Oracle Switch ES2-72 .

Index