

# Oracle® InfiniBand Switch IS2-46 Service Manual

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## Using This Documentation

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- **Overview** – Describes how to troubleshoot and service the Oracle InfiniBand Switch IS2-46.
- **Audience** – Technicians, system administrators, and authorized service providers.
- **Required knowledge** – Advanced experience servicing 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>.



# Identifying Components

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These topics identify switch components and provide links to service tasks.

- [“Switch Components” on page 12](#)
- [“Front Panel Components” on page 13](#)
- [“Rear Panel Components” on page 14](#)

## **Related Information**

- [“Detecting and Managing Faults” on page 15](#)
- [“Preparing for Service” on page 63](#)
- [“Servicing Data Cables” on page 81](#)
- [“Servicing the Battery” on page 107](#)
- [“Servicing Fan Modules” on page 119](#)
- [“Servicing Power Supplies” on page 129](#)
- [“Replacing the Switch” on page 139](#)
- [“Returning the Switch to Operation” on page 153](#)

## Switch Components

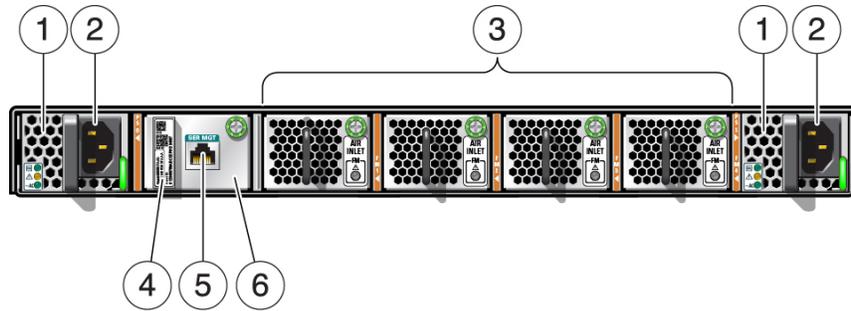


No.	Description	Links
1	Fan module	<a href="#">“Servicing Fan Modules” on page 119</a>
2	SER MGT module (SMM) (battery inside)	<a href="#">“Servicing the Battery” on page 107</a>
3	Power supply	<a href="#">“Servicing Power Supplies” on page 129</a>

### Related Information

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

## Front Panel Components

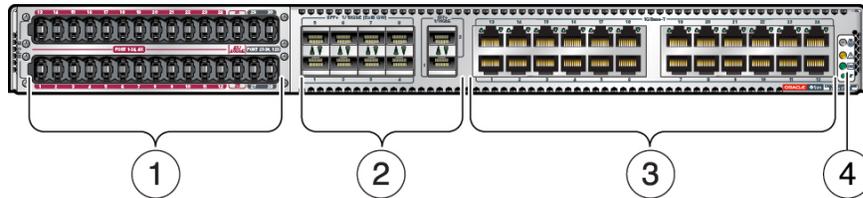


Item	Description	Links
1	Power supplies	<a href="#">“Servicing Power Supplies” on page 129</a>
2	Power cord receptacles	<a href="#">“Power Off a Power Supply” on page 76</a> <a href="#">“Power On a Power Supply” on page 157</a>
3	Fan modules	<a href="#">“Servicing Fan Modules” on page 119</a>
4	RFID tag	<a href="#">“Read the Switch Serial Number (Oracle ILOM)” on page 66</a> <a href="#">“Remove the Air Duct Assembly” on page 68</a>
5	SER MGT port	<a href="#">“Access the SP (SER MGT Port)” on page 38</a>
6	SMM, with battery inside	<a href="#">“Servicing the Battery” on page 107</a>

### Related Information

- [“Switch Components” on page 12](#)
- [“Rear Panel Components” on page 14](#)

## Rear Panel Components



Item	Description	Links
1	PrizmMT connectors <ul style="list-style-type: none"> <li>■ Ports 1 to 24 – IB 4x</li> <li>■ Ports 25 and 26 – Either IB 4x or 10GbE</li> <li>■ Ports 27 to 30 – IB 12x</li> </ul>	<a href="#">“PrizmMT Cables” on page 83</a>
2	SFP+ connectors <ul style="list-style-type: none"> <li>■ Ports 1 to 8 (left) – 10GbE Ethernet overlay network (IB switch chip)</li> <li>■ Ports 1 and 2 (right) – 10GbE network management uplinks (Ethernet switch chip)</li> </ul>	<a href="#">“SFP+ Cable Transceivers” on page 84</a>
3	RJ-45 connectors	<a href="#">“RJ-45 Cables” on page 84</a>
4	Chassis status LEDs	<a href="#">“Front Panel LEDs” on page 33</a>

### Related Information

- [“Switch Components” on page 12](#)
- [“Front Panel Components” on page 13](#)

# Detecting and Managing Faults

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These topics describe the troubleshooting process.

- [“Troubleshooting the Switch” on page 15](#)
- [“Identifying Components of Faulted Targets” on page 26](#)
- [“Diagnostic Tools” on page 31](#)
- [“Troubleshooting \(LEDs\)” on page 31](#)
- [“Accessing the SP” on page 37](#)
- [“Troubleshooting \(Oracle ILOM /SP Targets\)” on page 42](#)
- [“Troubleshooting \(Oracle ILOM /System Targets\)” on page 47](#)
- [“Troubleshooting \(Oracle ILOM Legacy Targets\)” on page 52](#)

## Related Information

- [“Identifying Components” on page 11](#)
- [“Preparing for Service” on page 63](#)
- [“Servicing Data Cables” on page 81](#)
- [“Servicing the Battery” on page 107](#)
- [“Servicing Fan Modules” on page 119](#)
- [“Servicing Power Supplies” on page 129](#)
- [“Replacing the Switch” on page 139](#)
- [“Returning the Switch to Operation” on page 153](#)

## Troubleshooting the Switch

These topics describe how to troubleshoot the switch.

- [“Begin the Diagnostic Process” on page 16](#)
- [“Perform Diagnostics at the Switch” on page 17](#)
- [“Perform Additional Diagnostics at the Switch” on page 19](#)
- [“Perform Diagnostics Remotely” on page 21](#)
- [“Perform Oracle ILOM Target Diagnostics” on page 25](#)

### Related Information

- [“Identifying Components of Faulted Targets” on page 26](#)
- [“Diagnostic Tools” on page 31](#)
- [“Troubleshooting \(LEDs\)” on page 31](#)
- [“Accessing the SP” on page 37](#)
- [“Troubleshooting \(Oracle ILOM /SP Targets\)” on page 42](#)
- [“Troubleshooting \(Oracle ILOM /System Targets\)” on page 47](#)
- [“Troubleshooting \(Oracle ILOM Legacy Targets\)” on page 52](#)

## ▼ Begin the Diagnostic Process

Follow this process when you are informed of or recognize a problem.

1. **Are you sure you know the cause of the problem?**
  - **Yes – Go to [Step 2](#).**
  - **No – Go to [Step 5](#).**
2. **Is the cause from a software failure or hardware failure?**
  - **Hardware – Go to [Step 3](#).**
  - **Software – The solution is beyond the scope of this document.**  
Refer to the *Oracle EDR InfiniBand Switch and Virtualized I/O Systems Administration Guide* and the software troubleshooting documentation. If necessary, contact your authorized Oracle Service Provider.
3. **Are you sure you know the solution to the hardware problem?**
  - **Yes – Go to [Step 4](#).**
  - **No – Go to [Step 5](#).**
4. **Replace the problematic component.**  
See [“Faulted Item Replaceable Components” on page 30](#) for links to component service tasks.
5. **Are you in the physical presence of the switch?**

- Yes – Go to [“Perform Diagnostics at the Switch” on page 17.](#)
- No – Go to [“Perform Diagnostics Remotely” on page 21.](#)

#### Related Information

- [“Perform Diagnostics at the Switch” on page 17](#)
- [“Perform Additional Diagnostics at the Switch” on page 19](#)
- [“Perform Diagnostics Remotely” on page 21](#)
- [“Perform Oracle ILOM Target Diagnostics” on page 25](#)

## ▼ Perform Diagnostics at the Switch

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**Note** - This procedure assumes that the air duct assembly has been removed and the SER MGT cable remains attached. See [“Remove the Air Duct Assembly” on page 68](#) for instructions.

---

1. **Are you starting a new troubleshooting session with this task?**
  - Yes – Go to [“Begin the Diagnostic Process” on page 16](#) and start your troubleshooting session there.
  - No – Go to [Step 2.](#)
2. **Are any power supply LEDs on?**
  - Yes – Go to [Step 4.](#)
  - No – Go to [Step 3.](#)
3. **Check the power cords and supplied power, and correct as necessary.**

Refer to the *Oracle InfiniBand Switch IS2-46 Installation Guide*, then return to [Step 2.](#)
4. **Is a power supply amber Attention LED on?**
  - Yes – Go to [Step 5.](#)
  - No – Go to [Step 7.](#)
5. **Release the tab and unseat the faulted power supply, wait a minute, then reseat the power supply and secure the tab.**

6. **Does the power supply Attention LED persist?**
  - Yes – Go to [Step 16](#).
  - No – Go to [Step 7](#).
7. **Is the green SP LED off?**
  - Yes – Go to [Step 16](#).
  - No – Go to [Step 8](#).
8. **Is a 1GBASE-T port or SFP+ port used for the network management interface?**
  - Yes – Go to [Step 9](#).
  - No – Go to [Step 17](#).
9. **Is the port's Link LED on?**
  - Yes – Go to [Step 10](#).
  - No – Go to [Step 11](#).
10. **Does the Link LED flash on occasion?**
  - Yes – Go to [Step 17](#).
  - No – Go to [Step 13](#).
11. **Are you sure you know that the cabling is wired correctly with good cables and firm connections?**
  - Yes – Go to [Step 13](#).
  - No – Go to [Step 12](#).
12. **Inspect and replace cabling as necessary.**

Then return to [Step 9](#).
13. **Are you sure you know that the communication hardware (terminals, routers, and switches) are fully functional?**
  - Yes – Go to [Step 15](#).

- **No – Go to [Step 14](#).**
14. **Inspect and replace communication hardware as necessary.**  
Then return to [Step 9](#).
  15. **Use new cabling and connect to a different 1GBASE-T port or SFP+ port.**  
Go to [Step 9](#). If you arrive back at this step a second time, go to [Step 16](#).
  16. **Remove the faulted component and install a new component.**  
See [“Faulted Item Replaceable Components” on page 30](#) for links to service tasks.
  17. **Perform further diagnostics.**  
See [“Perform Additional Diagnostics at the Switch” on page 19](#).

#### Related Information

- [“Begin the Diagnostic Process” on page 16](#)
- [“Perform Additional Diagnostics at the Switch” on page 19](#)
- [“Perform Diagnostics Remotely” on page 21](#)
- [“Perform Oracle ILOM Target Diagnostics” on page 25](#)

## ▼ Perform Additional Diagnostics at the Switch

---

**Note** - This procedure assumes that the air duct assembly has been removed and the SER MGT cable remains attached. See [“Remove the Air Duct Assembly” on page 68](#) for instructions.

---

1. **Are you starting a new troubleshooting session with this task?**
  - **Yes – Go to [“Begin the Diagnostic Process” on page 16](#) and start your troubleshooting session there.**
  - **No – Go to [Step 2](#).**
2. **Is the chassis status amber Attention LED on to indicate a fault?**
  - **Yes – Go to [Step 3](#).**
  - **No – Go to [Step 15](#).**
3. **Is a fan module amber Attention LED on?**

- Yes – Go to [Step 4](#).
  - No – Go to [Step 6](#).
4. Fully loosen the thumbscrew and unseat the faulted fan module, wait a minute, then reseat the fan module and tighten the thumbscrew finger-tight.
  5. Does the fan module Attention LED persist?
    - Yes – Go to [Step 14](#).
    - No – Go to [Step 6](#).
  6. Are magenta-colored PrizmMT cables connected in ports 1 through 26?
    - Yes – Go to [Step 7](#).
    - No – Reattach the magenta-colored PrizmMT cables to ports 1 through 26, then go to [Step 7](#).
  7. Are black-colored PrizmMT cables connected in ports 27 through 30?
    - Yes – Go to [Step 8](#).
    - No – Reattach the black-colored PrizmMT cables to ports 27 through 30, then go to [Step 8](#).
  8. Are all cabled Ethernet port Link LEDs on?
    - Yes – Go to [Step 9](#).
    - No – Go to [Step 10](#).
  9. Does any cabled Ethernet port Link LED flash on occasion?
    - Yes – Go to [Step 15](#).
    - No – Go to [Step 12](#).
  10. Are you sure you know that the cabling for the suspect ports is wired correctly with good cables and firm connections?
    - Yes – Go to [Step 12](#).

- No – Go to [Step 11](#).
11. **Inspect and replace cabling as necessary.**  
Then return to [Step 8](#).
  12. **Are you sure you know that the communication hardware (NICs, hosts, routers, and switches) are fully functional?**
    - Yes – The switch itself is defective. Go to [Step 14](#).
    - No – Go to [Step 13](#).
  13. **Inspect and replace communication hardware as necessary.**  
Then return to [Step 8](#).
  14. **Remove the faulted component and install a new component.**  
See “[Faulted Item Replaceable Components](#)” on page 30 for links to service tasks.
  15. **Perform further diagnostics.**  
See “[Perform Diagnostics Remotely](#)” on page 21.

#### Related Information

- “[Begin the Diagnostic Process](#)” on page 16
- “[Perform Diagnostics at the Switch](#)” on page 17
- “[Perform Diagnostics Remotely](#)” on page 21
- “[Perform Oracle ILOM Target Diagnostics](#)” on page 25

## ▼ Perform Diagnostics Remotely

1. **Are you starting a new troubleshooting session with this task?**
  - Yes – Go to “[Begin the Diagnostic Process](#)” on page 16 and start your troubleshooting session there.
  - No – Go to [Step 2](#).
2. **Do you access the SP from the network or terminal server?**
  - Network – Go to [Step 3](#).

- **Terminal server (serial interface) – Go to [Step 8](#).**
- 3. Can you access the SP from the network?**  
See “[Access the SP \(RJ-45 Port\)](#)” on page 37, then return to this step.
- **Yes – Go to [Step 17](#).**
  - **No – Go to [Step 4](#).**
- 4. Can you ping the switch from the network?**
- **Yes – Go to [Step 6](#).**
  - **No – Go to [Step 5](#).**
- 5. Are you sure that the network parameters are configured correctly?**
- **Yes – Go to [Step 12](#).**
  - **No – Go to [Step 7](#).**
- 6. From the terminal server (serial interface), enable the network administrative interface and network services through Oracle ILOM.**
- ```
-> set /SP/network state=enabled  
-> set /SP/services/ssh state=enabled  
-> set /SP/services/https servicestate=enabled
```
- Then return to [Step 3](#).
- 7. From the terminal server (serial interface), configure the correct network parameters through Oracle ILOM.**  
See “[Access the SP \(SER MGT Port\)](#)” on page 38, then return to this step.  
Type:
- ```
-> set /SP/network pendingipdiscovery=static  
-> set /SP/network pendingipaddress=IP_address_for_SP  
-> set /SP/network pendingipgateway=IP_address_for_gateway  
-> set /SP/network pendingipnetmask=255.255.255.0  
-> set /SP/network commitpending=true
```
- Then return to [Step 3](#).
- 8. Can you access the SP from the terminal server or serial interface?**  
See “[Access the SP \(SER MGT Port\)](#)” on page 38, then return to this step.

- Yes – Go to [Step 17](#).
  - No – Go to [Step 9](#).
9. Are you sure that the serial parameters are configured correctly?
- Yes – Go to [Step 12](#).
  - No – Go to [Step 10](#).
10. Configure the correct serial parameters for the terminal server or serial console.
- Baud – 9600
  - Data bits – 8
  - Parity – N
  - Stop bits – 1
  - Flow control – none
11. From the network, configure the correct serial parameters through Oracle ILOM.  
See “[Access the SP \(RJ-45 Port\)](#)” on page 37, then return to this step.  
Type:
- ```
-> set /SP/serial/external pendingflowcontrol=none  
-> set /SP/serial/external pendingspeed=9600  
-> set /SP/serial/external commitpending=true
```
- Then return to [Step 8](#).
12. Are you sure that the cabling is wired correctly with good cables and firm connections?
- Yes – Go to [Step 14](#).
  - No – Go to [Step 13](#).
13. Inspect and replace cabling as necessary.  
Then return to [Step 2](#).
14. Are you sure that the communication hardware (NICs, hosts, terminals, routers, and switches) is fully functional?
- Yes – Go to [Step 16](#).
  - No – Go to [Step 15](#).

**15. Inspect and replace communication hardware as necessary.**

Then return to [Step 2](#).

**16. Perform a visual inspection of the switch.**

See [“Perform Diagnostics at the Switch” on page 17](#).

**17. Display the log files from Oracle ILOM.**

```
-> show /SP/logs/event/list Class==Fault Type==Fault
```

**18. Do the log entries identify the problem?**

■ Yes – Go to [Step 19](#).

■ No – Go to [Step 22](#).

**19. Is the problem hardware or software related?**

■ Hardware – Go to [Step 20](#).

■ Software – The solution is beyond the scope of this document. Refer to the switch *Oracle InfiniBand Switch and Virtualized I/O Systems Administration Guide* and the software troubleshooting documentation. If necessary, contact your authorized Oracle Service Provider.

**20. Has enough information been provided to justify a service operation?**

■ Yes – Go to [Step 21](#).

■ No – Go to [Step 22](#).

**21. Remove the faulted component and install a new component.**

See [“Faulted Item Replaceable Components” on page 30](#) or [“Oracle ILOM Legacy Target Replaceable Components” on page 28](#) for links to component service tasks.

**22. Perform Oracle ILOM target diagnostics.**

See [“Perform Oracle ILOM Target Diagnostics” on page 25](#).

**Related Information**

- [“Begin the Diagnostic Process” on page 16](#)
- [“Perform Diagnostics at the Switch” on page 17](#)
- [“Perform Additional Diagnostics at the Switch” on page 19](#)
- [“Perform Oracle ILOM Target Diagnostics” on page 25](#)

## ▼ Perform Oracle ILOM Target Diagnostics

1. Are you starting a new troubleshooting session with this task?
  - Yes – Go to [“Begin the Diagnostic Process” on page 16](#) and start your troubleshooting session there.
  - No – Go to [Step 2](#).
2. Display problematic components with Oracle ILOM.  

```
-> show /System/Open_Problems
```
3. Are there any problematic components?
  - Yes – Go to [Step 11](#).
  - No – Go to [Step 4](#).
4. Display the subsystems' health with Oracle ILOM.  

```
-> show /System -t health
```
5. Are there any unhealthy subsystems?
  - Yes – Go to [Step 6](#).
  - No – Go to [Step 7](#).
6. Are any individual components unhealthy?
  - Yes – Go to [Step 11](#).
  - No – Go to [Step 7](#).
7. Are you sure that Oracle ILOM legacy targets are enabled?
  - Yes – Go to [Step 9](#).
  - No – Go to [Step 8](#).
8. Enable Oracle ILOM legacy targets.  

```
-> set /SP/cli legacy_targets=enabled
```

**9. Investigate the sensors of suspect components.**

See [“Display Status for Specific Components”](#) on page 53, then return to this step. Use these tables for legacy targets.

| Legacy Target Type    | Links                                                                             |
|-----------------------|-----------------------------------------------------------------------------------|
| Alarm state and FRUID | <a href="#">“Oracle ILOM Legacy Targets for Fault State and FRUID”</a> on page 55 |
| Power consumption     | <a href="#">“Oracle ILOM Legacy Targets for Power Consumption”</a> on page 58     |
| Voltage               | <a href="#">“Oracle ILOM Legacy Targets for Voltage”</a> on page 58               |
| Temperature           | <a href="#">“Oracle ILOM Legacy Targets for Temperature”</a> on page 59           |
| Fan speed             | <a href="#">“Oracle ILOM Legacy Targets for Fan Speeds”</a> on page 60            |
| LED state             | <a href="#">“Oracle ILOM Legacy Targets for LED States”</a> on page 61            |

**10. Were any displayed values outside the range of normal operation or indicative of an alarm or fault?**

- **Yes – Go to [Step 11](#).**
- **No – Continued diagnostics are beyond the scope of this document.**  
Refer to the software documentation or contact your Authorized Oracle Service Provider.

**11. Use the component Oracle ILOM path or component name to determine which component to service.**

See [“Oracle ILOM Legacy Target Replaceable Components”](#) on page 28 and [“Faulted Item Replaceable Components”](#) on page 30 for links to component service tasks.

**Related Information**

- [“Begin the Diagnostic Process”](#) on page 16
- [“Perform Diagnostics at the Switch”](#) on page 17
- [“Perform Additional Diagnostics at the Switch”](#) on page 19
- [“Perform Diagnostics Remotely”](#) on page 21

## Identifying Components of Faulted Targets

These topics map targets and faulted components to their service tasks.

- [“Oracle ILOM /HOST and /SP Target Replaceable Components”](#) on page 27
- [“Oracle ILOM /System Target Replaceable Components”](#) on page 27
- [“Oracle ILOM Legacy Target Replaceable Components”](#) on page 28
- [“Faulted Item Replaceable Components”](#) on page 30

### Related Information

- [“Troubleshooting the Switch” on page 15](#)
- [“Diagnostic Tools” on page 31](#)
- [“Troubleshooting \(LEDs\)” on page 31](#)
- [“Accessing the SP” on page 37](#)
- [“Troubleshooting \(Oracle ILOM /SP Targets\)” on page 42](#)
- [“Troubleshooting \(Oracle ILOM /System Targets\)” on page 47](#)
- [“Troubleshooting \(Oracle ILOM Legacy Targets\)” on page 52](#)

## Oracle ILOM /HOST and /SP Target Replaceable Components

| Oracle ILOM Target       | Component | Links                                               |
|--------------------------|-----------|-----------------------------------------------------|
| /HOST and all subtargets | Switch    | <a href="#">“Replacing the Switch” on page 139</a>  |
| /SP and all subtargets   | Switch    | <a href="#">“Replacing the Switch” on page 139</a>  |
| /SP/clock                | Battery   | <a href="#">“Servicing the Battery” on page 107</a> |

### Related Information

- [“Oracle ILOM /System Target Replaceable Components” on page 27](#)
- [“Oracle ILOM Legacy Target Replaceable Components” on page 28](#)
- [“Faulted Item Replaceable Components” on page 30](#)

## Oracle ILOM /System Target Replaceable Components

| Oracle ILOM Target         | Component    | Links                                               |
|----------------------------|--------------|-----------------------------------------------------|
| /System                    | Switch       | <a href="#">“Replacing the Switch” on page 139</a>  |
| /System/Cooling            | Fan modules  | <a href="#">“Servicing Fan Modules” on page 119</a> |
| /System/Cooling/Fans/Fan_0 | Fan module 0 | <a href="#">“Servicing Fan Modules” on page 119</a> |
| /System/Cooling/Fans/Fan_1 | Fan module 0 | <a href="#">“Servicing Fan Modules” on page 119</a> |
| /System/Cooling/Fans/Fan_2 | Fan module 1 | <a href="#">“Servicing Fan Modules” on page 119</a> |
| /System/Cooling/Fans/Fan_3 | Fan module 1 | <a href="#">“Servicing Fan Modules” on page 119</a> |
| /System/Cooling/Fans/Fan_4 | Fan module 2 | <a href="#">“Servicing Fan Modules” on page 119</a> |

| Oracle ILOM Target                          | Component      | Links                                                                         |
|---------------------------------------------|----------------|-------------------------------------------------------------------------------|
| /System/Cooling/Fans/Fan_5                  | Fan module 2   | <a href="#">“Servicing Fan Modules” on page 119</a>                           |
| /System/Cooling/Fans/Fan_6                  | Fan module 3   | <a href="#">“Servicing Fan Modules” on page 119</a>                           |
| /System/Cooling/Fans/Fan_7                  | Fan module 3   | <a href="#">“Servicing Fan Modules” on page 119</a>                           |
| /System/Firmware                            | Firmware       | <i>Oracle EDR InfiniBand and Virtualized I/O Systems Administration Guide</i> |
| /System/Firmware/Other_Firmware/Firmware_x  | Firmware       | <i>Oracle EDR InfiniBand and Virtualized I/O Systems Administration Guide</i> |
| /System/Log                                 | Switch         | <a href="#">“Replacing the Switch” on page 139</a>                            |
| /System/Networking                          | Switch         | <a href="#">“Replacing the Switch” on page 139</a>                            |
| /System/Networking/Switches/Switch_x        | Switch         | <a href="#">“Replacing the Switch” on page 139</a>                            |
| /System/Power                               | Power supplies | <a href="#">“Servicing Power Supplies” on page 129</a>                        |
| /System/Power/Power_Supplies/Power_Supply_0 | Power supply 0 | <a href="#">“Servicing Power Supplies” on page 129</a>                        |
| /System/Power/Power_Supplies/Power_Supply_1 | Power supply 1 | <a href="#">“Servicing Power Supplies” on page 129</a>                        |

### Related Information

- [“Oracle ILOM /HOST and /SP Target Replaceable Components” on page 27](#)
- [“Oracle ILOM Legacy Target Replaceable Components” on page 28](#)
- [“Faulted Item Replaceable Components” on page 30](#)

## Oracle ILOM Legacy Target Replaceable Components

| Oracle ILOM Target | Component    | Links                                               |
|--------------------|--------------|-----------------------------------------------------|
| /SYS               | Switch       | <a href="#">“Replacing the Switch” on page 139</a>  |
| /SYS/COMe          | Switch       | <a href="#">“Replacing the Switch” on page 139</a>  |
| /SYS/ETHSWITCH0    | Switch       | <a href="#">“Replacing the Switch” on page 139</a>  |
| /SYS/FMx           | Fan module x | <a href="#">“Servicing Fan Modules” on page 119</a> |
| /SYS/FMx/FANy      | Fan module x | <a href="#">“Servicing Fan Modules” on page 119</a> |
| /SYS/FMx/FANy/TACH | Fan module x | <a href="#">“Servicing Fan Modules” on page 119</a> |
| /SYS/FMx/PRSNT     | Fan module x | <a href="#">“Servicing Fan Modules” on page 119</a> |
| /SYS/IBSWITCH0     | Switch       | <a href="#">“Replacing the Switch” on page 139</a>  |
| /SYS/LOCATE        | Switch       | <a href="#">“Replacing the Switch” on page 139</a>  |
| /SYS/MB            | Switch       | <a href="#">“Replacing the Switch” on page 139</a>  |
| /SYS/MB/T_AMB      | Switch       | <a href="#">“Replacing the Switch” on page 139</a>  |

| Oracle ILOM Target    | Component      | Links                                                     |
|-----------------------|----------------|-----------------------------------------------------------|
| /SYS/MB/T_HCA         | Switch         | <a href="#">“Replacing the Switch” on page 139</a>        |
| /SYS/MB/T_IBSWITCH    | Switch         | <a href="#">“Replacing the Switch” on page 139</a>        |
| /SYS/MB/T_OUT         | Switch         | <a href="#">“Replacing the Switch” on page 139</a>        |
| /SYS/MB/V_+1V0        | Switch         | <a href="#">“Replacing the Switch” on page 139</a>        |
| /SYS/MB/V_+1V2        | Switch         | <a href="#">“Replacing the Switch” on page 139</a>        |
| /SYS/MB/V_+1V5        | Switch         | <a href="#">“Replacing the Switch” on page 139</a>        |
| /SYS/MB/V_+1V8        | Switch         | <a href="#">“Replacing the Switch” on page 139</a>        |
| /SYS/MB/V_+2V5        | Switch         | <a href="#">“Replacing the Switch” on page 139</a>        |
| /SYS/MB/V_+3V3        | Switch         | <a href="#">“Replacing the Switch” on page 139</a>        |
| /SYS/MB/V_+0V85_HCA   | Switch         | <a href="#">“Replacing the Switch” on page 139</a>        |
| /SYS/MB/V_+1V05_HCA   | Switch         | <a href="#">“Replacing the Switch” on page 139</a>        |
| /SYS/MB/V_+0V85_IBSW  | Switch         | <a href="#">“Replacing the Switch” on page 139</a>        |
| /SYS/MB/V_+1V05_IBSW  | Switch         | <a href="#">“Replacing the Switch” on page 139</a>        |
| /SYS/MB/V_+3V3_MBOMA  | Switch         | <a href="#">“Replacing the Switch” on page 139</a>        |
| /SYS/MB/V_VBAT        | Battery        | <a href="#">“Servicing the Battery” on page 107</a>       |
| /SYS/OK               | Switch         | <a href="#">“Replacing the Switch” on page 139</a>        |
| /SYS/PSx              | Power supply x | <a href="#">“Servicing Power Supplies” on page 129</a>    |
| /SYS/PSx/INPUT_POWER  | Power cord     | <i>Oracle InfiniBand Switch IS2-46 Installation Guide</i> |
| /SYS/PSx/I_IN         | Power supply x | <a href="#">“Servicing Power Supplies” on page 129</a>    |
| /SYS/PSx/I_OUT        | Power supply x | <a href="#">“Servicing Power Supplies” on page 129</a>    |
| /SYS/PSx/OUTPUT_POWER | Power supply x | <a href="#">“Servicing Power Supplies” on page 129</a>    |
| /SYS/PSx/PRSNT        | Power supply x | <a href="#">“Servicing Power Supplies” on page 129</a>    |
| /SYS/PSx/PWROK        | Power supply x | <a href="#">“Servicing Power Supplies” on page 129</a>    |
| /SYS/PSx/V_IN         | Power cord     | <i>Oracle InfiniBand Switch IS2-46 Installation Guide</i> |
| /SYS/PSx/V_OUT        | Power supply x | <a href="#">“Servicing Power Supplies” on page 129</a>    |
| /SYS/SERVICE          | Switch         | <a href="#">“Replacing the Switch” on page 139</a>        |
| /SYS/SP               | Switch         | <a href="#">“Replacing the Switch” on page 139</a>        |
| /SYS/SP/OK            | Switch         | <a href="#">“Replacing the Switch” on page 139</a>        |
| /SYS/SP/V_+1V0        | Switch         | <a href="#">“Replacing the Switch” on page 139</a>        |
| /SYS/SP/V_+1V5        | Switch         | <a href="#">“Replacing the Switch” on page 139</a>        |
| /SYS/SP/V_+1V8        | Switch         | <a href="#">“Replacing the Switch” on page 139</a>        |
| /SYS/SP/V_+3V3        | Switch         | <a href="#">“Replacing the Switch” on page 139</a>        |

## Related Information

- [“Oracle ILOM /HOST and /SP Target Replaceable Components” on page 27](#)
- [“Oracle ILOM /System Target Replaceable Components” on page 27](#)

- [“Faulted Item Replaceable Components” on page 30](#)

## Faulted Item Replaceable Components

| Faulted Item                | Component    | Links                                                     |
|-----------------------------|--------------|-----------------------------------------------------------|
| Battery                     | Battery      | <a href="#">“Servicing the Battery” on page 107</a>       |
| Battery voltage             | Battery      | <a href="#">“Servicing the Battery” on page 107</a>       |
| Cables                      | Cables       | <a href="#">“Servicing Data Cables” on page 81</a>        |
| Chassis LEDs                | Switch       | <a href="#">“Replacing the Switch” on page 139</a>        |
| Date                        | Battery      | <a href="#">“Servicing the Battery” on page 107</a>       |
| Ethernet switch chip        | Switch       | <a href="#">“Replacing the Switch” on page 139</a>        |
| Fan module                  | Fan module   | <a href="#">“Servicing Fan Modules” on page 119</a>       |
| Fan module Attention LED    | Fan module   | <a href="#">“Servicing Fan Modules” on page 119</a>       |
| Fan module fan speed        | Fan module   | <a href="#">“Servicing Fan Modules” on page 119</a>       |
| Fan module presence         | Fan module   | <a href="#">“Servicing Fan Modules” on page 119</a>       |
| IB switch chip              | Switch       | <a href="#">“Replacing the Switch” on page 139</a>        |
| Link LEDs                   | Switch       | <a href="#">“Replacing the Switch” on page 139</a>        |
|                             | Cable        | <a href="#">“Servicing Data Cables” on page 81</a>        |
| Main board                  | Switch       | <a href="#">“Replacing the Switch” on page 139</a>        |
| Main board LEDs             | Switch       | <a href="#">“Replacing the Switch” on page 139</a>        |
| Main board temperatures     | Switch       | <a href="#">“Replacing the Switch” on page 139</a>        |
| Main board voltages         | Switch       | <a href="#">“Replacing the Switch” on page 139</a>        |
| PrizmMT cable               | Cable        | <a href="#">“Servicing Data Cables” on page 81</a>        |
| Power consumption           | Power supply | <a href="#">“Servicing Power Supplies” on page 129</a>    |
|                             | Power cord   | <i>Oracle InfiniBand Switch IS2-46 Installation Guide</i> |
|                             | Switch       | <a href="#">“Replacing the Switch” on page 139</a>        |
| Power supply                | Power supply | <a href="#">“Servicing Power Supplies” on page 129</a>    |
| Power supply Attention LED  | Power supply | <a href="#">“Servicing Power Supplies” on page 129</a>    |
| Power supply current        | Power supply | <a href="#">“Servicing Power Supplies” on page 129</a>    |
| Power supply fan            | Power supply | <a href="#">“Servicing Power Supplies” on page 129</a>    |
| Power supply output voltage | Power supply | <a href="#">“Servicing Power Supplies” on page 129</a>    |
| Power supply presence       | Power supply | <a href="#">“Servicing Power Supplies” on page 129</a>    |
| RJ-45 cable                 | Cable        | <a href="#">“Servicing Data Cables” on page 81</a>        |
| SFP+ cable                  | Cable        | <a href="#">“Servicing Data Cables” on page 81</a>        |
| SP                          | Switch       | <a href="#">“Replacing the Switch” on page 139</a>        |
| SP LED                      | Switch       | <a href="#">“Replacing the Switch” on page 139</a>        |
| Time                        | Battery      | <a href="#">“Servicing the Battery” on page 107</a>       |

### Related Information

- [“Oracle ILOM /HOST and /SP Target Replaceable Components” on page 27](#)
- [“Oracle ILOM /System Target Replaceable Components” on page 27](#)
- [“Oracle ILOM Legacy Target Replaceable Components” on page 28](#)

## Diagnostic Tools

| Tool                                                                                                                                                                                                        | Links                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| <b>Status LEDs</b> – Indicate the condition or state of the chassis and components. <ul style="list-style-type: none"> <li>■ Chassis</li> <li>■ Fan module</li> <li>■ Power supply</li> <li>■ SP</li> </ul> | <a href="#">“Troubleshooting (LEDs)” on page 31</a>                        |
| <b>Oracle ILOM /SP targets</b> – Provide information about services, sessions, and configuration parameters for Oracle ILOM.                                                                                | <a href="#">“Troubleshooting (Oracle ILOM /SP Targets)” on page 42</a>     |
| <b>Oracle ILOM logs</b> – Provide an accounting of events that happened with the switch hardware.                                                                                                           | <a href="#">“Display Oracle ILOM Log Entries” on page 43</a>               |
| <b>Oracle ILOM/System targets</b> – Provide information about the hardware of the switch.                                                                                                                   | <a href="#">“Troubleshooting (Oracle ILOM /System Targets)” on page 47</a> |
| <b>Oracle ILOM legacy targets</b> – Provide detailed component and environmental information about the switch.                                                                                              | <a href="#">“Troubleshooting (Oracle ILOM Legacy Targets)” on page 52</a>  |

### Related Information

- [“Troubleshooting the Switch” on page 15](#)
- [“Identifying Components of Faulted Targets” on page 26](#)
- [“Diagnostic Tools” on page 31](#)
- [“Troubleshooting \(LEDs\)” on page 31](#)
- [“Accessing the SP” on page 37](#)
- [“Troubleshooting \(Oracle ILOM /SP Targets\)” on page 42](#)
- [“Troubleshooting \(Oracle ILOM /System Targets\)” on page 47](#)
- [“Troubleshooting \(Oracle ILOM Legacy Targets\)” on page 52](#)

## Troubleshooting (LEDs)

These topics enable you to visually inspect the state of the switch.

- [“Inspect the LEDs” on page 32](#)
- [“Front Panel LEDs” on page 33](#)
- [“SFP+ Link LEDs” on page 33](#)
- [“RJ-45 Link LEDs” on page 34](#)
- [“Chassis Status LEDs” on page 35](#)
- [“Component LEDs” on page 36](#)

### Related Information

- [“Troubleshooting the Switch” on page 15](#)
- [“Identifying Components of Faulted Targets” on page 26](#)
- [“Diagnostic Tools” on page 31](#)
- [“Accessing the SP” on page 37](#)
- [“Troubleshooting \(Oracle ILOM /SP Targets\)” on page 42](#)
- [“Troubleshooting \(Oracle ILOM /System Targets\)” on page 47](#)
- [“Troubleshooting \(Oracle ILOM Legacy Targets\)” on page 52](#)

## ▼ Inspect the LEDs

1. **At the switch, observe and record the state of each LED.**
2. **Compare your observations with the status descriptions.**

See:

- [“Front Panel LEDs” on page 33](#)
- [“SFP+ Link LEDs” on page 33](#)
- [“RJ-45 Link LEDs” on page 34](#)
- [“Chassis Status LEDs” on page 35](#)
- [“Component LEDs” on page 36](#)

3. **If the information provided is sufficient to justify a service operation, perform service on that component.**

See [“Faulted Item Replaceable Components” on page 30](#) for links to service tasks.

### Related Information

- [“Front Panel LEDs” on page 33](#)
- [“SFP+ Link LEDs” on page 33](#)
- [“RJ-45 Link LEDs” on page 34](#)

- “Chassis Status LEDs” on page 35
- “Component LEDs” on page 36

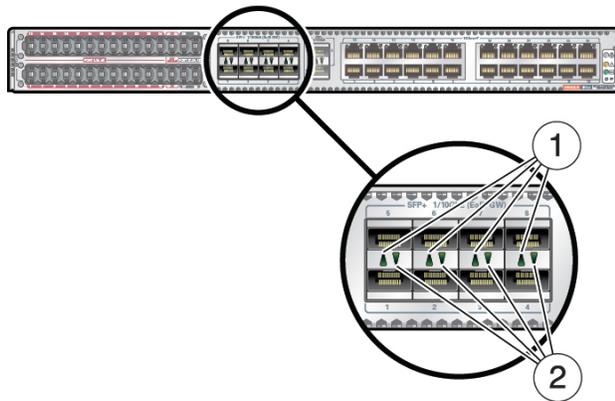
## Front Panel LEDs

Other than the power supply LEDs and the fan module LEDs, there are no other LEDs on the front panel of the switch. See “Component LEDs” on page 36.

### Related Information

- “Inspect the LEDs” on page 32
- “SFP+ Link LEDs” on page 33
- “RJ-45 Link LEDs” on page 34
- “Chassis Status LEDs” on page 35
- “Component LEDs” on page 36

## SFP+ Link LEDs



| No. | LED                                 | Description                                                                                                                                                    |
|-----|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | SFP+ Link LED (left of pair, green) | Indicates these conditions for the upper row of SFP+ connectors: <ul style="list-style-type: none"> <li>▪ <b>On</b> – A link is established and up.</li> </ul> |

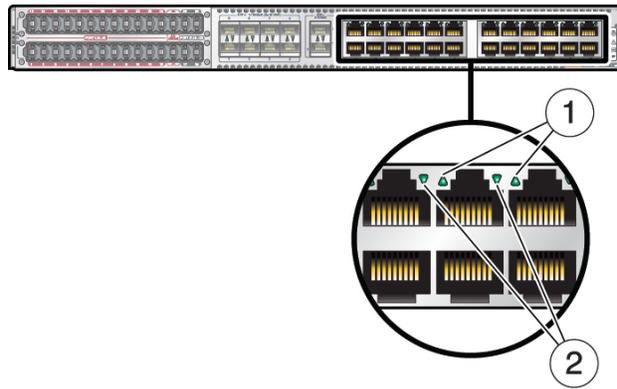
## Inspect the LEDs

| No. | LED                                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2   | SFP+ Link LED (right of pair, green) | <p>Indicates these conditions for the lower row of SFP+ connectors:</p> <ul style="list-style-type: none"><li>■ <b>Flashing</b> – There is activity on the link.</li><li>■ <b>Off</b> – No link is established or the link is down.</li><li>■ <b>On</b> – A link is established and up.</li><li>■ <b>Flashing</b> – There is activity on the link.</li><li>■ <b>Off</b> – No link is established or the link is down.</li></ul> |

## Related Information

- [“Inspect the LEDs” on page 32](#)
- [“Front Panel LEDs” on page 33](#)
- [“RJ-45 Link LEDs” on page 34](#)
- [“Chassis Status LEDs” on page 35](#)
- [“Component LEDs” on page 36](#)

## RJ-45 Link LEDs



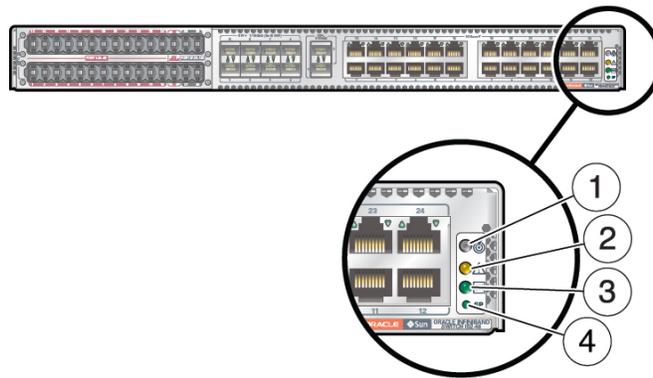
| No. | LED                                        | Description                                                                                                                                                                                                                                                                                        |
|-----|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | RJ-45 Link LED (left of connector, green)  | <p>Indicates these conditions for the upper row of RJ-45 connectors:</p> <ul style="list-style-type: none"><li>■ <b>On</b> – A link is established and up.</li><li>■ <b>Flashing</b> – There is activity on the link.</li><li>■ <b>Off</b> – No link is established or the link is down.</li></ul> |
| 2   | RJ-45 Link LED (right of connector, green) | <p>Indicates these conditions for the lower row of RJ-45 connectors:</p>                                                                                                                                                                                                                           |

| No. | LED | Description                                                                                                                                                                                                                   |
|-----|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |     | <ul style="list-style-type: none"> <li>■ <b>On</b> – A link is established and up.</li> <li>■ <b>Flashing</b> – There is activity on the link.</li> <li>■ <b>Off</b> – No link is established or the link is down.</li> </ul> |

## Related Information

- [“Inspect the LEDs” on page 32](#)
- [“Front Panel LEDs” on page 33](#)
- [“SFP+ Link LEDs” on page 33](#)
- [“Chassis Status LEDs” on page 35](#)
- [“Component LEDs” on page 36](#)

## Chassis Status LEDs



| No. | LED                                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Locate LED (top, white)                     | <p>Indicates these conditions:</p> <ul style="list-style-type: none"> <li>■ <b>Fast blink</b> – Switch is identifying itself. To turn on a Locate LED, at the Oracle ILOM CLI type: <ul style="list-style-type: none"> <li><b>set /SYS/LOCATE value=Fast_Blink</b></li> </ul> </li> <li>■ <b>Off</b> – Switch is not identifying itself. To turn off a Locate LED, at the Oracle ILOM CLI type: <ul style="list-style-type: none"> <li><b>set /SYS/LOCATE value=Off</b></li> </ul> </li> </ul> |
| 2   | Service Action Required LED (middle, amber) | Indicates these conditions:                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| No. | LED                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3   | System OK LED (middle, green) | <ul style="list-style-type: none"> <li>■ <b>On</b> – Service is required. Oracle ILOM can detect a fault or failure resulting in this indication.<br/>The Oracle ILOM /System/Open_Problems target provides details about any faults that cause this indicator to light.<br/>Under some fault conditions, individual component fault LEDs are turned on in addition to the Service Required LED.</li> <li>■ <b>Off</b> – Switch is running in its normal state. There are no faults.</li> </ul> <p>Indicates these conditions:</p> <ul style="list-style-type: none"> <li>■ <b>On</b> – Switch is powered on and is running in its normal operating state. No service actions are required.</li> <li>■ <b>Off</b> – Switch is not running in its normal state. Switch power might be off. The SP might be booting.</li> </ul> |
| 4   | SP LED (bottom, green)        | <p>Indicates these conditions:</p> <ul style="list-style-type: none"> <li>■ <b>On</b> – SP is powered on and is running in its normal operating state. No service actions are required.</li> <li>■ <b>Slow blink</b> – The SP is booting.</li> <li>■ <b>Off</b> – SP is not running in its normal state. Power is off or the SP has faulted.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

### Related Information

- [“Inspect the LEDs” on page 32](#)
- [“Front Panel LEDs” on page 33](#)
- [“SFP+ Link LEDs” on page 33](#)
- [“RJ-45 Link LEDs” on page 34](#)
- [“Component LEDs” on page 36](#)

## Component LEDs

| Component    | Links                                           |
|--------------|-------------------------------------------------|
| Power supply | <a href="#">“Power Supply LEDs” on page 130</a> |
| Fan module   | <a href="#">“Fan Module LED” on page 120</a>    |

### Related Information

- [“Inspect the LEDs” on page 32](#)
- [“Front Panel LEDs” on page 33](#)
- [“SFP+ Link LEDs” on page 33](#)
- [“RJ-45 Link LEDs” on page 34](#)

- “Chassis Status LEDs” on page 35

## Accessing the SP

These topics describe how to access the SP for switch chassis management.

- “Access the SP (RJ-45 Port)” on page 37
- “Access the SP (SER MGT Port)” on page 38
- “Access the SCP (RJ-45 Port)” on page 39
- “Configure and Enable Network Management (SER MGT Port)” on page 39

### Related Information

- “Troubleshooting the Switch” on page 15
- “Identifying Components of Faulted Targets” on page 26
- “Diagnostic Tools” on page 31
- “Troubleshooting (LEDs)” on page 31
- “Troubleshooting (Oracle ILOM /SP Targets)” on page 42
- “Troubleshooting (Oracle ILOM /System Targets)” on page 47
- “Troubleshooting (Oracle ILOM Legacy Targets)” on page 52

## ▼ Access the SP (RJ-45 Port)

1. **Access a network terminal device that is connected to the SP through the management network.**
2. **Using an SSH session, log in to the Oracle ILOM interface.**

```
% ssh user@IP_address
```

where:

- *user* is the user name that manages the SP. The default user is root.
- *IP\_address* is the IP address or host name of the SP.

3. **At the prompt, type the password for the user.**

The default password is changeme.

The Oracle ILOM CLI prompt is displayed, and you can now manage the SP.

4. **If you performed this task as part of a troubleshooting operation, return to the troubleshooting process.**

See [“Perform Diagnostics Remotely” on page 21](#).

#### **Related Information**

- [“Access the SP \(SER MGT Port\)” on page 38](#)
- [“Access the SCP \(RJ-45 Port\)” on page 39](#)
- [“Configure and Enable Network Management \(SER MGT Port\)” on page 39](#)

## ▼ **Access the SP (SER MGT Port)**

1. **Access a terminal server or serial interface connected to the SER MGT port.**
2. **Ensure that the serial device is configured with correct parameters.**

- **Baud** – 9600
- **Data bits** – 8
- **Parity** – N
- **Stop bits** – 1
- **Flow control** – None

3. **Press the Return or Enter key on the serial device several times to synchronize the connection.**

```
hostname login:
```

where *hostname* is the host name of the SP.

4. **Log in to the Oracle ILOM interface with the user name that manages the SP, and its password.**

The default user name is `root`, and the password is `changeme`.

The CLI prompt is displayed, and you can now manage the SP.

5. **Consider your next steps.**
  - **If you performed this task as part of a troubleshooting operation, return to the troubleshooting process.**  
See [“Perform Diagnostics Remotely” on page 21](#).
  - **If you performed this task as part of configuring a replacement switch, return to that procedure.**

See [“Configure the Replacement Switch” on page 161](#).

### Related Information

- [“Access the SP \(RJ-45 Port\)” on page 37](#)
- [“Access the SCP \(RJ-45 Port\)” on page 39](#)
- [“Configure and Enable Network Management \(SER MGT Port\)” on page 39](#)

## ▼ Access the SCP (RJ-45 Port)

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 [“Configure and Enable Network Management \(SER MGT Port\)” on page 39](#).

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. **If you performed this task as part of configuring a replacement switch, return to that procedure.**

See [“Configure the Replacement Switch” on page 161](#).

### Related Information

- [“Access the SP \(RJ-45 Port\)” on page 37](#)
- [“Access the SP \(SER MGT Port\)” on page 38](#)
- [“Configure and Enable Network Management \(SER MGT Port\)” on page 39](#)

## ▼ Configure and Enable Network Management (SER MGT Port)

---

**Note** - In some situations, this task can be performed from the network management interface at RJ-45 ports. Upon completion of the task, the connection is severed and you must re-access the SP for continued management.

---

**1. Access the Oracle ILOM CLI from the SER MGT port.**

See [“Access the SP \(SER MGT Port\)” on page 38.](#)

**2. Configure the SP 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* being configured.

These properties are supported:

- *pendingipdiscovery* – *value* is the method of IP discovery to be configured, either *static* or *dhcp*.

---

**Note** - If the value is *dhcp*, you must know how your DHCP server assigns an IP address and host name to the SP.

---

- *pendingipaddress* – *value* is the IP address of the SP to be configured. Not needed for DHCP.
- *pendingipgateway* – *value* is the IP address of the routing gateway of the management network. Not needed for DHCP.
- *pendingipnetmask* – *value* is the netmask for the management network. Not needed for DHCP.

---

**Note** - You can configure one to all properties on one command line.

---

**3. Enable SP network management by IPv4.**

```
-> set /SP/network state=ipv4-only
```

**4. Enable secure connections to the SP.**

**a. For the CLI interface and SSL, type:**

```
-> set /SP/services/ssh state=enabled
```

**b. For the web interface and HTTPS, type:**

```
-> set /SP/services/https servicestate=enabled
```

**5. Commit the SP network management configuration.**

```
-> set /SP/network commitpending=true
```

The new configuration parameters take effect immediately.

## 6. 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 (
```

## 7. Press the Enter key.

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

## 8. Log in to the SCP 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.

## 9. 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)
```

## 10. 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 ~]#
```

**11. (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 ~]#
```

**12. Apply the changes.**

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

**13. Consider your next steps.**

- **If you performed this task as part of a troubleshooting operation, return to the troubleshooting process.**  
See [“Perform Diagnostics Remotely” on page 21.](#)
- **If you performed this task as part of replacement switch configuration, return to that procedure.**  
See [“Configure the Replacement Switch” on page 161.](#)

**Related Information**

- [“Access the SP \(RJ-45 Port\)” on page 37](#)
- [“Access the SP \(SER MGT Port\)” on page 38](#)
- [“Access the SCP \(RJ-45 Port\)” on page 39](#)

## Troubleshooting (Oracle ILOM /SP Targets)

These topics display logs, check network management parameters, display user sessions, and verify firmware versions.

- [“Display Oracle ILOM Log Entries” on page 43](#)
- [“Oracle ILOM Log Entry Filters” on page 44](#)
- [“Display Network Management Configuration Properties” on page 45](#)

- [“Display User Session Information” on page 45](#)
- [“Display the SP Firmware Version” on page 46](#)

### Related Information

- [“Troubleshooting the Switch” on page 15](#)
- [“Identifying Components of Faulted Targets” on page 26](#)
- [“Diagnostic Tools” on page 31](#)
- [“Troubleshooting \(LEDs\)” on page 31](#)
- [“Accessing the SP” on page 37](#)
- [“Troubleshooting \(Oracle ILOM /System Targets\)” on page 47](#)
- [“Troubleshooting \(Oracle ILOM Legacy Targets\)” on page 52](#)

## ▼ Display Oracle ILOM Log Entries

### 1. Access the Oracle ILOM CLI.

See [“Accessing the SP” on page 37](#).

### 2. Display the Oracle ILOM event log.

```
-> show /SP/logs/event/list Class==class Type==type
```

where *class* and *type* are chosen from the table in [“Oracle ILOM Log Entry Filters” on page 44](#).

For example, to display log entries pertaining to faults, type:

```
-> show /SP/logs/event/list Class==Fault Type==Fault
Event
ID      Date/Time                Class   Type   Severity
-----
1741    Tue Mar  6 20:13:05 2012  Fault   Fault   critical
      Fault detected at time = Tue Mar  6 20:13:05 2012. The suspect component:
      /SYS/PS1 has fault.chassis.power.ext-fail with probability=100. Refer to
      ...
->
```

For this example, power supply 1 has had a fault. A URL is provided for more information about the fault.

### Related Information

- [“Oracle ILOM Log Entry Filters” on page 44](#)
- [“Display Network Management Configuration Properties” on page 45](#)

- [“Display User Session Information” on page 45](#)
- [“Display the SP Firmware Version” on page 46](#)

## Oracle ILOM Log Entry Filters

When you display the Oracle ILOM log, you can filter the output to specific classes and types of entries using combinations of the Class and Type parameters. See [“Display Oracle ILOM Log Entries” on page 43](#). This table describes the combinations and entries that are displayed.

| Parameters                  | Entries Displayed                                                                                                               |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Class==Audit Type==Log      | Commands that result in a configuration change. Description includes user, command, command parameters, and success or failure. |
| Class==IPMI Type==Log       | Any event that is placed in the IPMI system event log is also put into the management log.                                      |
| Class==Chassis Type==State  | Changes to the component inventory and general switch state.                                                                    |
| Class==Chassis Type==Action | Shutdown events for switch chassis, hot-insert, and hot-removal of components.                                                  |
| Class==Fault Type==Fault    | Fault management faults. Description gives the time the fault was detected and the suspect component.                           |
| Class==Fault Type==Repair   | Fault management repairs. Description gives the component name.                                                                 |

The output can be further filtered with the Severity parameter, which has one of five values:

- Debug
- Down
- Critical
- Major
- Minor

For example, to display only log entries indicating a minor change to the switch inventory, type:

```
-> show /SP/logs/event/list Class==Chassis Type==State Severity==Minor
```

### Related Information

- [“Display Oracle ILOM Log Entries” on page 43](#)
- [“Display Network Management Configuration Properties” on page 45](#)
- [“Display User Session Information” on page 45](#)
- [“Display the SP Firmware Version” on page 46](#)

## ▼ Display Network Management Configuration Properties

1. **Access the Oracle ILOM CLI.**  
See [“Accessing the SP” on page 37](#).
2. **Display the parameters configured for the SP to communicate over the network.**

```
-> show -d properties /SP/network
/SP/network
Properties:
  commitpending = (Cannot show property)
  dhcp_clientid = none
  dhcp_server_ip = none
  ipaddress = 10.153.113.85
  ipdiscovery = static
  ipgateway = 10.153.113.1
  ipnetmask = 255.255.255.0
.
.
.
  state = ipv4-only
  vland_id - (none)
->
```

### Related Information

- [“Display Oracle ILOM Log Entries” on page 43](#)
- [“Oracle ILOM Log Entry Filters” on page 44](#)
- [“Display User Session Information” on page 45](#)
- [“Display the SP Firmware Version” on page 46](#)

## ▼ Display User Session Information

1. **Access the Oracle ILOM CLI.**  
See [“Accessing the SP” on page 37](#).
2. **Display the user session numbers.**

```
-> show -d targets /SP/sessions
/SP/sessions
Targets:
  4 (current)
->
```

In this example, there is only one user session, number 4.

### 3. Display information about a particular session.

```
-> show -d properties /SP/sessions/x
```

where *x* is the session number. For example:

```
-> show -d properties /SP/sessions/4
/SP/sessions/4
Properties:
  username = root
  role = aucro
  starttime = Wed Sep 16 20:15:36 2015
  type = shell
  mode = normal
->
```

#### Related Information

- [“Display Oracle ILOM Log Entries” on page 43](#)
- [“Oracle ILOM Log Entry Filters” on page 44](#)
- [“Display Network Management Configuration Properties” on page 45](#)
- [“Display the SP Firmware Version” on page 46](#)

## ▼ Display the SP Firmware Version

When referencing external resources, it might be helpful to know the firmware versions for bug fixes or upgrades.

### 1. Access the Oracle ILOM CLI.

See [“Accessing the SP” on page 37](#).

### 2. Display the SP firmware version and build time.

```
-> version /SP
SP firmware 3.2.0.0
SP firmware build number: 102282
SP firmware date: Fri Aug 28 13:41:21 CEST 2015
SP filesystem version: 0.2.10
->
```

#### Related Information

- [“Display Oracle ILOM Log Entries” on page 43](#)

- [“Oracle ILOM Log Entry Filters” on page 44](#)
- [“Display Network Management Configuration Properties” on page 45](#)
- [“Display User Session Information” on page 45](#)

## Troubleshooting (Oracle ILOM /System Targets)

These topics display the health state of various systems and components.

- [“Display Problematic Components” on page 47](#)
- [“Open Problem Faults” on page 48](#)
- [“Display the General Health of Components and Systems” on page 49](#)
- [“Oracle ILOM Target Health States” on page 50](#)
- [“Display Active Power Consumption” on page 51](#)

### Related Information

- [“Troubleshooting the Switch” on page 15](#)
- [“Identifying Components of Faulted Targets” on page 26](#)
- [“Diagnostic Tools” on page 31](#)
- [“Troubleshooting \(LEDs\)” on page 31](#)
- [“Accessing the SP” on page 37](#)
- [“Troubleshooting \(Oracle ILOM /SP Targets\)” on page 42](#)
- [“Troubleshooting \(Oracle ILOM Legacy Targets\)” on page 52](#)

## ▼ Display Problematic Components

1. **Access the Oracle ILOM CLI.**  
See [“Accessing the SP” on page 37](#).

2. **Display problematic components.**

```
-> show /System/Open_Problems
Open Problems (0)
Date/Time           Subsystems           Component
-----
Thu Dec 17 05:00:01 2015 System              MB (Motherboard)
  fault.chassis.battery.fail (Probability:100,
  UUID:76a2179a-51bd-c836-a7f1-af62953577fa,
  Resource:/SYS/MB, Part
  Number:7092577, Serial Number:AK00329231, Reference Document:http://support.oracle.com/
  msg/---)
```

->

In this example, the backup battery is problematic as identified by the text following the words `fault.chassis`.

3. **Compare the output with the examples in “Open Problem Faults” on page 48.**
4. **Consider your next step.**
  - **Replace the component identified in the output.**  
See “Oracle ILOM Legacy Target Replaceable Components” on page 28 and “Faulted Item Replaceable Components” on page 30 for links to service tasks.
  - **Perform further troubleshooting.**  
See “Display the General Health of Components and Systems” on page 49 and “Display Status for Specific Components” on page 53.

### Related Information

- “Open Problem Faults” on page 48
- “Display the General Health of Components and Systems” on page 49
- “Oracle ILOM Target Health States” on page 50
- “Display Active Power Consumption” on page 51

## Open Problem Faults

In the output of the `/System/Open_Problems` target, the string of text that begins with `fault.chassis.` identifies the faulty component. Additionally, the text that follows `Resource` is the Oracle ILOM target of the component that faulted. This table provides example output for various component faults. Once you identify the component that has faulted, see “Oracle ILOM Legacy Target Replaceable Components” on page 28 and “Faulted Item Replaceable Components” on page 30 for links to service tasks.

| Component Faulted   | /System/Open_Problems Output                                                                                                                                                                                                                                                                                         |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ambient temperature | Date/Time Subsystems Component ----- Thu<br>Dec 17 05:11:35 2015 System MB (Motherboard) fault.chassis.env.temp.over-fail (Probability:<br>100, UUID:4c4bdfa1-f7d5-c7a7-e59e-f9a8ce4fab21, Resource:/SYS/MB, Part Number:7092577,<br>Serial Number:BS00329231, Reference Document:http://support.oracle.com/msg/---) |
| Battery             | Date/Time Subsystems Component ----- Thu<br>Dec 17 05:00:01 2015 System MB (Motherboard) fault.chassis.battery.fail (Probability:100,<br>UUID:76a2179a-51bd-c836-a7f1-af62953577fa, Resource:/SYS/MB, Part Number:7092577, Serial<br>Number:BS00329231, Reference Document:http://support.oracle.com/msg/---)        |

| Component Faulted      | /System/Open_Problems Output                                                                                                                                                                                                                                                                                                 |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fan module             | Date/Time Subsystems Component ----- Thu<br>Dec 17 05:18:44 2015 System FMx (Fan Module) fault.chassis.device.fan.fail (Probability:<br>100, UUID:0ebf1655-8700-c90e-fa53-ea6c3b2b25a0, Resource:/SYS/FMx, Part Number:N/A, Serial<br>Number:N/A, Reference Document:http://support.oracle.com/msg/---)                      |
| Main board temperature | Date/Time Subsystems Component ----- Thu<br>Dec 17 05:04:16 2015 System MB (Motherboard) fault.chassis.temp.shutdown (Probability:50,<br>UUID:01bacc0f-986e-e346-94aa-84e41a1c1595, Resource:/SYS/MB, Part Number:7092577, Serial<br>Number:BS00329231, Reference Document:http://support.oracle.com/msg/---)                |
| Main board voltage     | Date/Time Subsystems Component ----- Thu<br>Dec 17 05:13:26 2015 System SP (Service Processor) fault.chassis.voltage.fail (Probability:<br>100, UUID:0a408985-6011-ccd7-c3a1-e01c7254ea87, Resource:/SYS/SP, Part Number:7096151,<br>Serial Number:BS9089M+15306P00M0, Reference Document:http://support.oracle.com/msg/---) |
| Power supply           | Date/Time Subsystems Component ----- Thu<br>Dec 17 05:17:11 2015 Power PSx (Power Supply 1) fault.chassis.device.psu.fail (Probability:<br>100, UUID:b516a939-23c2-ee8b-e997-d915ca03d044, Resource:/SYS/PSx, Part Number:7065505-01,<br>Serial Number:BS2517, Reference Document:http://support.oracle.com/msg/---)         |

### Related Information

- [“Display Problematic Components” on page 47](#)
- [“Display the General Health of Components and Systems” on page 49](#)
- [“Oracle ILOM Target Health States” on page 50](#)
- [“Display Active Power Consumption” on page 51](#)

## ▼ Display the General Health of Components and Systems

### 1. Access the Oracle ILOM CLI.

See [“Accessing the SP” on page 37](#).

### 2. Display the health of the switch components.

```
-> 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
->

```

**3. In the output, identify the health state from the value column.**

See [“Oracle ILOM Target Health States” on page 50](#).

Use this table to help identify unhealthy components.

| Target             | Component      |
|--------------------|----------------|
| /System            | Switch         |
| /System/Cooling    | Fan elements   |
| /System/Networking | Switch chips   |
| /System/Power      | Power supplies |

**4. Consider your next step.**

- **Perform further troubleshooting.**

See [“Display Status for Specific Components” on page 53](#).

- **Replace the component.**

See [“Oracle ILOM /System Target Replaceable Components” on page 27](#) or [“Faulted Item Replaceable Components” on page 30](#) for links to service tasks.

**Related Information**

- [“Display Problematic Components” on page 47](#)
- [“Open Problem Faults” on page 48](#)
- [“Oracle ILOM Target Health States” on page 50](#)
- [“Display Active Power Consumption” on page 51](#)

## Oracle ILOM Target Health States

Use this table to clarify health states as seen in the health property of Oracle ILOM /System targets.

| Health state     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OK               | Switch or hardware component is fully functional.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Not Available    | Oracle ILOM is unable to provide health status for this hardware component.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Service Required | Oracle ILOM might require HMP to be installed. See the Oracle HMP documentation library at <a href="http://docs.oracle.com/cd/E20451_01/">http://docs.oracle.com/cd/E20451_01/</a> .<br>Oracle ILOM has detected a problem with the component that requires a service action to resolve the issue.<br><br>If this health status appears at the system level, view the /System/Open_Problems target. See <a href="#">“Display Problematic Components” on page 47</a> . If the health status appears in the Open Problems table, refer to the URL provided in the table for further details. |

### Related Information

- [“Display Problematic Components” on page 47](#)
- [“Open Problem Faults” on page 48](#)
- [“Display the General Health of Components and Systems” on page 49](#)
- [“Display Active Power Consumption” on page 51](#)

## ▼ Display Active Power Consumption

1. **Access the Oracle ILOM CLI.**  
See [“Accessing the SP” on page 37](#).

2. **Display the power consumed in real time.**

```
-> show /System/Power actual_power_consumption
/System/Power
Properties:
  actual_power_consumption = 188 watts
->
```

The power is displayed in watts.

### Related Information

- [“Display Problematic Components” on page 47](#)
- [“Open Problem Faults” on page 48](#)
- [“Display the General Health of Components and Systems” on page 49](#)
- [“Oracle ILOM Target Health States” on page 50](#)

## Troubleshooting (Oracle ILOM Legacy Targets)

These topics describe how to display measured values for component parameters.

- [“Enable Oracle ILOM Legacy Targets” on page 52](#)
- [“Display Status for Specific Components” on page 53](#)
- [“Clear a Fault Manually” on page 54](#)
- [“Oracle ILOM Legacy Targets for Fault State and FRUID” on page 55](#)
- [“Oracle ILOM Legacy Targets for Alarm State” on page 56](#)
- [“Oracle ILOM Legacy Targets for Power Consumption” on page 58](#)
- [“Oracle ILOM Legacy Targets for Voltage” on page 58](#)
- [“Oracle ILOM Legacy Targets for Temperature” on page 59](#)
- [“Oracle ILOM Legacy Targets for Fan Speeds” on page 60](#)
- [“Oracle ILOM Legacy Targets for LED States” on page 61](#)
- [“Resettable Targets” on page 62](#)

### Related Information

- [“Troubleshooting the Switch” on page 15](#)
- [“Identifying Components of Faulted Targets” on page 26](#)
- [“Diagnostic Tools” on page 31](#)
- [“Troubleshooting \(LEDs\)” on page 31](#)
- [“Accessing the SP” on page 37](#)
- [“Troubleshooting \(Oracle ILOM /SP Targets\)” on page 42](#)
- [“Troubleshooting \(Oracle ILOM /System Targets\)” on page 47](#)

## ▼ Enable Oracle ILOM Legacy Targets

Oracle ILOM legacy targets are not available or functional until you perform this task.

1. **Access the Oracle ILOM CLI.**  
See [“Accessing the SP” on page 37](#).
2. **Enable the Oracle ILOM legacy targets.**

```
-> set /SP/cli legacy_targets=enabled
Set 'legacy_targets' to 'enabled'
->
```

3. **You can now perform diagnostics with Oracle ILOM legacy targets.**  
See [“Display Status for Specific Components”](#) on page 53.

### Related Information

- [“Display Status for Specific Components”](#) on page 53
- [“Clear a Fault Manually”](#) on page 54
- [“Oracle ILOM Legacy Targets for Fault State and FRUID”](#) on page 55
- [“Oracle ILOM Legacy Targets for Alarm State”](#) on page 56
- [“Oracle ILOM Legacy Targets for Power Consumption”](#) on page 58
- [“Oracle ILOM Legacy Targets for Voltage”](#) on page 58
- [“Oracle ILOM Legacy Targets for Temperature”](#) on page 59
- [“Oracle ILOM Legacy Targets for Fan Speeds”](#) on page 60
- [“Oracle ILOM Legacy Targets for LED States”](#) on page 61
- [“Resettable Targets”](#) on page 62

## ▼ Display Status for Specific Components

1. **Access the Oracle ILOM CLI.**  
See [“Accessing the SP”](#) on page 37.
2. **If not already done, enable Oracle ILOM legacy targets.**  
See [“Enable Oracle ILOM Legacy Targets”](#) on page 52.
3. **For the type of component status, type the appropriate command.**
  - **For fault state, type:**  

```
-> show target fault_state
```

  
where *target* is from the table in [“Oracle ILOM Legacy Targets for Fault State and FRUID”](#) on page 55. A fault state of OK means no fault. A fault state of Faulted means there is a fault.
  - **For FRUID, type:**  

```
-> show target -d properties
```

  
where the *target* capable of displaying FRUID is from the table in [“Oracle ILOM Legacy Targets for Alarm State”](#) on page 56.
  - **For alarm state, type:**

-> `show target alarm_status`

where *target* is from the table in [“Oracle ILOM Legacy Targets for Alarm State” on page 56](#). An alarm state of `cleared` means no alarm. An alarm state of `state asserted` means there is an alarm.

- **For power, voltage, temperature, fan speed, or LED state of a component, type:**

-> `show target value`

where *target* is from the tables in:

- [“Oracle ILOM Legacy Targets for Power Consumption” on page 58](#)
- [“Oracle ILOM Legacy Targets for Voltage” on page 58](#)
- [“Oracle ILOM Legacy Targets for Temperature” on page 59](#)
- [“Oracle ILOM Legacy Targets for Fan Speeds” on page 60](#)
- [“Oracle ILOM Legacy Targets for LED States” on page 61](#)

4. **If the output of the command indicates a fault or displays values outside normal operating parameters, replace the component indicated by the respective table.**

See [“Oracle ILOM Legacy Target Replaceable Components” on page 28](#) or [“Faulted Item Replaceable Components” on page 30](#) for a link to the service task for that component.

### Related Information

- [“Enable Oracle ILOM Legacy Targets” on page 52](#)
- [“Clear a Fault Manually” on page 54](#)
- [“Oracle ILOM Legacy Targets for Fault State and FRUID” on page 55](#)
- [“Oracle ILOM Legacy Targets for Alarm State” on page 56](#)
- [“Oracle ILOM Legacy Targets for Power Consumption” on page 58](#)
- [“Oracle ILOM Legacy Targets for Voltage” on page 58](#)
- [“Oracle ILOM Legacy Targets for Temperature” on page 59](#)
- [“Oracle ILOM Legacy Targets for Fan Speeds” on page 60](#)
- [“Oracle ILOM Legacy Targets for LED States” on page 61](#)
- [“Resettable Targets” on page 62](#)

## ▼ Clear a Fault Manually

Faults can be detected by Oracle ILOM or the native OS of the SP. The native OS communicates the faults it has discovered to Oracle ILOM.

If Oracle ILOM detects a fault and subsequent component replacement, Oracle ILOM automatically clears the fault. However, if the native OS detects a fault, you might need to manually clear the fault from Oracle ILOM after resolution.

If the fault persists after a replacement operation with a known good component, use this procedure to clear the fault.

**1. Access the Oracle ILOM CLI.**

See [“Accessing the SP” on page 37](#).

**2. Reset the component to clear the fault manually.**

```
-> set target clear_fault_action=true
```

where *target* is the Oracle ILOM target of the faulted component. See [“Resettable Targets” on page 62](#) for a list of targets.

For example, to reset and clear a fault with power supply 0, type:

```
-> set /SYS/PS0 clear_fault_action=true
Are you sure you want to clear /SYS/PS0 (y/n)? y
Set 'clear_fault_action' to 'true'
->
```

### Related Information

- [“Enable Oracle ILOM Legacy Targets” on page 52](#)
- [“Display Status for Specific Components” on page 53](#)
- [“Oracle ILOM Legacy Targets for Fault State and FRUID” on page 55](#)
- [“Oracle ILOM Legacy Targets for Alarm State” on page 56](#)
- [“Oracle ILOM Legacy Targets for Power Consumption” on page 58](#)
- [“Oracle ILOM Legacy Targets for Voltage” on page 58](#)
- [“Oracle ILOM Legacy Targets for Temperature” on page 59](#)
- [“Oracle ILOM Legacy Targets for Fan Speeds” on page 60](#)
- [“Oracle ILOM Legacy Targets for LED States” on page 61](#)
- [“Resettable Targets” on page 62](#)

## Oracle ILOM Legacy Targets for Fault State and FRUID

This table lists components that might be in a fault state, or have FRUID information. See [“Oracle ILOM Legacy Target Replaceable Components” on page 28](#) or [“Faulted Item Replaceable Components” on page 30](#) for a link to the service task for that component.

| Faulted Sensor                 | Oracle ILOM Target | Component to Be Replaced |
|--------------------------------|--------------------|--------------------------|
| Fan module x fault             | /SYS/FMx           | Fan module x             |
| Fan module x fan y fault       | /SYS/FMx/FANy      | Fan module x             |
| Main board fault and FRUID     | /SYS/MB            | Switch                   |
| Power supply x fault and FRUID | /SYS/PSx           | Power supply x           |
| SP fault and FRUID             | /SYS/SP            | Switch                   |
| System fault and FRUID         | /SYS               | Switch                   |

### Related Information

- [“Enable Oracle ILOM Legacy Targets” on page 52](#)
- [“Display Status for Specific Components” on page 53](#)
- [“Clear a Fault Manually” on page 54](#)
- [“Oracle ILOM Legacy Targets for Alarm State” on page 56](#)
- [“Oracle ILOM Legacy Targets for Power Consumption” on page 58](#)
- [“Oracle ILOM Legacy Targets for Voltage” on page 58](#)
- [“Oracle ILOM Legacy Targets for Temperature” on page 59](#)
- [“Oracle ILOM Legacy Targets for Fan Speeds” on page 60](#)
- [“Oracle ILOM Legacy Targets for LED States” on page 61](#)
- [“Resettable Targets” on page 62](#)

## Oracle ILOM Legacy Targets for Alarm State

This table lists components that might be in an alarm state. See [“Oracle ILOM Legacy Target Replaceable Components” on page 28](#) or [“Faulted Item Replaceable Components” on page 30](#) for a link to the service task for that component.

| Sensor in Alarm State      | Oracle ILOM Target | Component to Be Replaced |
|----------------------------|--------------------|--------------------------|
| Exhaust air temperature    | /SYS/MB/T_OUT      | Switch                   |
| Fan module x fan y speed   | /SYS/FMx/FANy/TACH | Fan module x             |
| Fan module x presence      | /SYS/FMx/PRSNT     | Fan module x             |
| HCA temperature            | /SYS/MB/T_HCA      | Switch                   |
| IB switch chip temperature | /SYS/MB/T_IBSWITCH | Switch                   |
| Intake air temperature     | /SYS/MB/T_AMB      | Switch                   |
| Main board fault and FRUID | /SYS/MB            | Switch                   |
| Main board 1.0 VDC         | /SYS/MB/V_+1V0     | Switch                   |
| Main board 1.2 VDC         | /SYS/MB/V_+1V2     | Switch                   |

| Sensor in Alarm State                 | Oracle ILOM Target    | Component to Be Replaced |
|---------------------------------------|-----------------------|--------------------------|
| Main board 1.5 VDC                    | /SYS/MB/V_+1V5        | Switch                   |
| Main board 1.8 VDC                    | /SYS/MB/V_+1V8        | Switch                   |
| Main board 2.5 VDC                    | /SYS/MB/V_+2V5        | Switch                   |
| Main board 3.3 VDC                    | /SYS/MB/V_+3V3        | Switch                   |
| Main board HCA 0.85 VDC               | /SYS/MB/V_+0V85_HCA   | Switch                   |
| Main board HCA 1.05 VDC               | /SYS/MB/V_+1V05_HCA   | Switch                   |
| Main board IB switch chip 0.85 VDC    | /SYS/MB/V_+0V85_IBSW  | Switch                   |
| Main board IB switch chip 1.05 VDC    | /SYS/MB/V_+1V05_IBSW  | Switch                   |
| Main board MBOM 3.3 VDC               | /SYS/MB/V_+3V3_MBOMA  | Switch                   |
| Main board Standby 3.3 VDC            | /SYS/MB/V_+3V3_STDBY  | Switch                   |
| MBOM temperature                      | /SYS/MB/T_MBOMx       | Switch                   |
| Power supply x fault and FRUID        | /SYS/PSx              | Power supply x           |
| Power supply x input current          | /SYS/PSx/I_IN         | Power supply x           |
| Power supply x input power consumed   | /SYS/PSx/INPUT_POWER  | Power supply x           |
| Power supply x input voltage          | /SYS/PSx/V_IN         | Power supply x           |
| Power supply x OK state               | /SYS/PSx/PWROK        | Power supply x           |
| Power supply x output current         | /SYS/PSx/I_OUT        | Power supply x           |
| Power supply x output power delivered | /SYS/PSx/OUTPUT_POWER | Power supply x           |
| Power supply x output voltage         | /SYS/PSx/V_OUT        | Power supply x           |
| Power supply x presence               | /SYS/PSx/PRSNT        | Power supply x           |
| RTC backup battery                    | /SYS/MB/V_VBAT        | Battery                  |
| SP 1.0 VDC                            | /SYS/SP/V_+1V0        | Switch                   |
| SP 1.5 VDC                            | /SYS/SP/V_+1V5        | Switch                   |
| SP 1.8 VDC                            | /SYS/SP/V_+1V8        | Switch                   |
| SP 3.3 VDC                            | /SYS/SP/V_+3V3        | Switch                   |

## Related Information

- [“Enable Oracle ILOM Legacy Targets” on page 52](#)
- [“Display Status for Specific Components” on page 53](#)
- [“Clear a Fault Manually” on page 54](#)
- [“Oracle ILOM Legacy Targets for Fault State and FRUID” on page 55](#)
- [“Oracle ILOM Legacy Targets for Power Consumption” on page 58](#)
- [“Oracle ILOM Legacy Targets for Voltage” on page 58](#)
- [“Oracle ILOM Legacy Targets for Temperature” on page 59](#)
- [“Oracle ILOM Legacy Targets for Fan Speeds” on page 60](#)
- [“Oracle ILOM Legacy Targets for LED States” on page 61](#)
- [“Resettable Targets” on page 62](#)

## Oracle ILOM Legacy Targets for Power Consumption

This table lists power consumption sensors. An excessive or negligible value might indicate a faulted component. See [“Oracle ILOM Legacy Target Replaceable Components” on page 28](#) or [“Faulted Item Replaceable Components” on page 30](#) for a link to the service task for that component.

| Power Parameter                       | Oracle ILOM Target    | Component to Be Replaced |
|---------------------------------------|-----------------------|--------------------------|
| Power supply 0 input power consumed   | /SYS/PS0/INPUT_POWER  | Power supply 0           |
| Power supply 0 output power delivered | /SYS/PS0/OUTPUT_POWER | Power supply 0           |
| Power supply 1 input power consumed   | /SYS/PS1/INPUT_POWER  | Power supply 1           |
| Power supply 1 output power delivered | /SYS/PS1/OUTPUT_POWER | Power supply 1           |

### Related Information

- [“Enable Oracle ILOM Legacy Targets” on page 52](#)
- [“Display Status for Specific Components” on page 53](#)
- [“Clear a Fault Manually” on page 54](#)
- [“Oracle ILOM Legacy Targets for Fault State and FRUID” on page 55](#)
- [“Oracle ILOM Legacy Targets for Alarm State” on page 56](#)
- [“Oracle ILOM Legacy Targets for Voltage” on page 58](#)
- [“Oracle ILOM Legacy Targets for Temperature” on page 59](#)
- [“Oracle ILOM Legacy Targets for Fan Speeds” on page 60](#)
- [“Oracle ILOM Legacy Targets for LED States” on page 61](#)
- [“Resettable Targets” on page 62](#)

## Oracle ILOM Legacy Targets for Voltage

This table lists voltage sensors. An out-of-range value might indicate a faulted component. See [“Oracle ILOM Legacy Target Replaceable Components” on page 28](#) or [“Faulted Item Replaceable Components” on page 30](#) for a link to the service task for that component.

| Voltage Sensor         | Oracle ILOM Target | vaLue Range          | Component to Be Replaced   |
|------------------------|--------------------|----------------------|----------------------------|
| Line voltage into PS 0 | /SYS/PS0/V_IN      | 100 to 252 volts     | Power source or power cord |
| Line voltage into PS 1 | /SYS/PS1/V_IN      | 100 to 252 volts     | Power source or power cord |
| Main board 1.0 VDC     | /SYS/MB/V_+1V0     | 0.931 to 1.058 volts | Switch                     |

| Voltage Sensor                     | Oracle ILOM Target   | vaLue Range          | Component to Be Replaced |
|------------------------------------|----------------------|----------------------|--------------------------|
| Main board 1.2 VDC                 | /SYS/MB/V_+1V2       | 1.127 to 1.274 volts | Switch                   |
| Main board 1.5 VDC                 | /SYS/MB/V_+1V5       | 1.352 to 1.646 volts | Switch                   |
| Main board 1.8 VDC                 | /SYS/MB/V_+1V8       | 1.686 to 1.911 volts | Switch                   |
| Main board 2.5 VDC                 | /SYS/MB/V_+2V5       | 2.359 to 2.652 volts | Switch                   |
| Main board 3.3 VDC                 | /SYS/MB/V_+3V3       | 3.120 to 3.490 volts | Switch                   |
| Main board HCA 0.85 VDC            | /SYS/MB/V_+0V85_HCA  | 0.823 to 0.931 volts | Switch                   |
| Main board HCA 1.05 VDC            | /SYS/MB/V_+1V05_HCA  | 1.000 to 1.127 volts | Switch                   |
| Main board IB switch chip 0.85 VDC | /SYS/MB/V_+0V85_IBSW | 0.823 to 0.931 volts | Switch                   |
| Main board IB switch chip 1.05 VDC | /SYS/MB/V_+1V05_IBSW | 1.000 to 1.127 volts | Switch                   |
| Main board MBOM 3.3 VDC            | /SYS/MB/V_+3V3_MBOMA | 3.120 to 3.490 volts | Switch                   |
| Main board Standby 3.3 VDC         | /SYS/MB/V_+3V3_STDBY | 3.120 to 3.490 volts | Switch                   |
| RTC backup battery                 | /SYS/MB/V_VBAT       | > 2.548 volts        | Battery                  |
| SP 1.0 VDC                         | /SYS/SP/V_+1V0       | 0.872 to 1.117 volts | Switch                   |
| SP 1.5 VDC                         | /SYS/SP/V_+1V5       | 1.352 to 1.646 volts | Switch                   |
| SP 1.8 VDC                         | /SYS/SP/V_+1V8       | 1.578 to 2.009 volts | Switch                   |
| SP 3.3 VDC                         | /SYS/SP/V_+3V3       | 2.944 to 3.685 volts | Switch                   |
| Supplied voltage out of PS 0       | /SYS/PS0/V_OUT       | 10 to 14 volts       | Power supply 0           |
| Supplied voltage out of PS 1       | /SYS/PS1/V_OUT       | 10 to 14 volts       | Power supply 1           |

### Related Information

- [“Enable Oracle ILOM Legacy Targets” on page 52](#)
- [“Display Status for Specific Components” on page 53](#)
- [“Clear a Fault Manually” on page 54](#)
- [“Oracle ILOM Legacy Targets for Fault State and FRUID” on page 55](#)
- [“Oracle ILOM Legacy Targets for Alarm State” on page 56](#)
- [“Oracle ILOM Legacy Targets for Power Consumption” on page 58](#)
- [“Oracle ILOM Legacy Targets for Temperature” on page 59](#)
- [“Oracle ILOM Legacy Targets for Fan Speeds” on page 60](#)
- [“Oracle ILOM Legacy Targets for LED States” on page 61](#)
- [“Resettable Targets” on page 62](#)

## Oracle ILOM Legacy Targets for Temperature

This table lists temperature sensors. An out-of-range value might indicate a faulted component. See [“Oracle ILOM Legacy Target Replaceable Components” on page 28](#) or [“Faulted Item Replaceable Components” on page 30](#) for a link to the service task for that component.

| Temperature Sensor         | Oracle ILOM Target | vaLue Range        | Component to Be Replaced |
|----------------------------|--------------------|--------------------|--------------------------|
| Exhaust air temperature    | /SYS/MB/T_OUT      | 0 to 65 degrees C  | Switch                   |
| HCA temperature            | /SYS/MB/T_HCA      | 0 to 100 degrees C | Switch                   |
| IB switch chip temperature | /SYS/MB/T_IBSWITCH | 0 to 100 degrees C | Switch                   |
| Intake air temperature     | /SYS/MB/T_AMB      | 0 to 40 degrees C  | Switch                   |
| MBOM x temperature         | /SYS/MB/T_MBOMx    | 0 to 70 degrees C  | Switch                   |

### Related Information

- [“Enable Oracle ILOM Legacy Targets” on page 52](#)
- [“Display Status for Specific Components” on page 53](#)
- [“Clear a Fault Manually” on page 54](#)
- [“Oracle ILOM Legacy Targets for Fault State and FRUID” on page 55](#)
- [“Oracle ILOM Legacy Targets for Alarm State” on page 56](#)
- [“Oracle ILOM Legacy Targets for Power Consumption” on page 58](#)
- [“Oracle ILOM Legacy Targets for Voltage” on page 58](#)
- [“Oracle ILOM Legacy Targets for Fan Speeds” on page 60](#)
- [“Oracle ILOM Legacy Targets for LED States” on page 61](#)
- [“Resettable Targets” on page 62](#)

## Oracle ILOM Legacy Targets for Fan Speeds

This table lists speed sensors. An out-of-range value might indicate a faulted component. See [“Oracle ILOM Legacy Target Replaceable Components” on page 28](#) or [“Faulted Item Replaceable Components” on page 30](#) for a link to the service task for that component.

| Speed Sensor                | Oracle ILOM Target | vaLue Range       | Component to Be Replaced |
|-----------------------------|--------------------|-------------------|--------------------------|
| Fan 0 speed of fan module 0 | /SYS/FM0/FAN0/TACH | 6000 to 24000 RPM | Fan module 0             |
| Fan 1 speed of fan module 0 | /SYS/FM0/FAN1/TACH | 6000 to 24000 RPM | Fan module 0             |
| Fan 0 speed of fan module 1 | /SYS/FM1/FAN0/TACH | 6000 to 24000 RPM | Fan module 1             |
| Fan 1 speed of fan module 1 | /SYS/FM1/FAN1/TACH | 6000 to 24000 RPM | Fan module 1             |
| Fan 0 speed of fan module 2 | /SYS/FM2/FAN0/TACH | 6000 to 24000 RPM | Fan module 2             |
| Fan 1 speed of fan module 2 | /SYS/FM2/FAN1/TACH | 6000 to 24000 RPM | Fan module 2             |
| Fan 0 speed of fan module 3 | /SYS/FM3/FAN0/TACH | 6000 to 24000 RPM | Fan module 3             |
| Fan 1 speed of fan module 3 | /SYS/FM3/FAN1/TACH | 6000 to 24000 RPM | Fan module 3             |

## Related Information

- [“Enable Oracle ILOM Legacy Targets” on page 52](#)
- [“Display Status for Specific Components” on page 53](#)
- [“Clear a Fault Manually” on page 54](#)
- [“Oracle ILOM Legacy Targets for Fault State and FRUID” on page 55](#)
- [“Oracle ILOM Legacy Targets for Alarm State” on page 56](#)
- [“Oracle ILOM Legacy Targets for Power Consumption” on page 58](#)
- [“Oracle ILOM Legacy Targets for Voltage” on page 58](#)
- [“Oracle ILOM Legacy Targets for Temperature” on page 59](#)
- [“Oracle ILOM Legacy Targets for LED States” on page 61](#)
- [“Resettable Targets” on page 62](#)

## Oracle ILOM Legacy Targets for LED States

This table lists components with LEDs, the value property of which might indicate a fault state. See [“Oracle ILOM Legacy Target Replaceable Components” on page 28](#) or [“Faulted Item Replaceable Components” on page 30](#) for a link to the service task for that component.

| Component LED            | Oracle ILOM Target | Component to Be Replaced |
|--------------------------|--------------------|--------------------------|
| Attention LED            | /SYS/SERVICE       | Switch                   |
| Fan module Attention LED | /SYS/FMx/SERVICE   | Fan module x             |
| Locate LED               | /SYS/LOCATE        | Switch                   |
| OK LED                   | /SYS/OK            | Switch                   |
| SP LED                   | /SYS/SP/OK         | Switch                   |

## Related Information

- [“Enable Oracle ILOM Legacy Targets” on page 52](#)
- [“Display Status for Specific Components” on page 53](#)
- [“Clear a Fault Manually” on page 54](#)
- [“Oracle ILOM Legacy Targets for Fault State and FRUID” on page 55](#)
- [“Oracle ILOM Legacy Targets for Alarm State” on page 56](#)
- [“Oracle ILOM Legacy Targets for Power Consumption” on page 58](#)
- [“Oracle ILOM Legacy Targets for Voltage” on page 58](#)
- [“Oracle ILOM Legacy Targets for Temperature” on page 59](#)
- [“Oracle ILOM Legacy Targets for Fan Speeds” on page 60](#)
- [“Resettable Targets” on page 62](#)

## Resettable Targets

This table lists Oracle ILOM targets that are resettable through their `clear_fault_action` property and the related components with manual reset capability. Use this table for the task [“Clear a Fault Manually” on page 54](#).

| Target        | Component                                                                                               |
|---------------|---------------------------------------------------------------------------------------------------------|
| /SYS          | Switch                                                                                                  |
| /SYS/MB       | Main board                                                                                              |
| /SYS/FMx      | Fan module <i>x</i> , where <i>x</i> is 0 to 3                                                          |
| /SYS/FMx/FANy | Fan unit <i>y</i> installed in module <i>x</i> , where <i>y</i> is either 0 or 1 and <i>x</i> is 0 to 3 |
| /SYS/PSx      | Power supply <i>x</i> , where <i>x</i> is either 0 or 1                                                 |
| /SYS/SP       | SP                                                                                                      |

### Related Information

- [“Enable Oracle ILOM Legacy Targets” on page 52](#)
- [“Display Status for Specific Components” on page 53](#)
- [“Clear a Fault Manually” on page 54](#)
- [“Oracle ILOM Legacy Targets for Fault State and FRUID” on page 55](#)
- [“Oracle ILOM Legacy Targets for Alarm State” on page 56](#)
- [“Oracle ILOM Legacy Targets for Power Consumption” on page 58](#)
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- [“Oracle ILOM Legacy Targets for LED States” on page 61](#)

# Preparing for Service

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These topics describe how to prepare the switch for servicing.

| Step | Description                                                                                                                            | Link                                                                                                                                                                            |
|------|----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.   | Review safety and handling information.                                                                                                | <a href="#">“Safety Information” on page 64</a>                                                                                                                                 |
| 2.   | Gather the tools for service.                                                                                                          | <a href="#">“Service Tools” on page 65</a>                                                                                                                                      |
| 3.   | Read the switch serial number through Oracle ILOM.                                                                                     | <a href="#">“Read the Switch Serial Number (Oracle ILOM)” on page 66</a>                                                                                                        |
| 4.   | Identify the switch to be serviced.                                                                                                    | <a href="#">“Locate the Switch” on page 67</a>                                                                                                                                  |
| 5.   | Locate the component service information.                                                                                              | <a href="#">“Faulted Item Replaceable Components” on page 30</a>                                                                                                                |
| 6.   | Take antistatic precautions.<br>You can now service the PrizmMT, SFP+, and RJ-45 cables.                                               | <a href="#">“Prevent ESD Damage” on page 67</a><br><a href="#">“Servicing Data Cables” on page 81</a>                                                                           |
| 7.   | Remove the air duct assembly.<br><b>Note</b> - You can now physically read the serial number.<br>You can now service these components: | <a href="#">“Remove the Air Duct Assembly” on page 68</a><br><a href="#">“Servicing the Battery” on page 107</a><br><a href="#">“Servicing Fan Modules” on page 119</a>         |
|      | <ul style="list-style-type: none"><li>■ Battery</li><li>■ Fan modules</li></ul>                                                        |                                                                                                                                                                                 |
| 8.   | Remove the snap brackets.                                                                                                              | <a href="#">“Remove a Snap Bracket” on page 72</a>                                                                                                                              |
| 9.   | Power off the power supply.                                                                                                            | <a href="#">“Prepare to Power Off the Switch” on page 75</a><br><a href="#">“Power Off a Power Supply” on page 76</a><br><a href="#">“Servicing Power Supplies” on page 129</a> |
|      | You can now service these components:                                                                                                  | <a href="#">“Replacing the Switch” on page 139</a>                                                                                                                              |
|      | <ul style="list-style-type: none"><li>■ Power supplies</li><li>■ Switch</li></ul>                                                      |                                                                                                                                                                                 |

## Related Information

- [“Identifying Components” on page 11](#)
- [“Detecting and Managing Faults” on page 15](#)
- [“Servicing Data Cables” on page 81](#)
- [“Servicing the Battery” on page 107](#)
- [“Servicing Fan Modules” on page 119](#)
- [“Servicing Power Supplies” on page 129](#)

- [“Replacing the Switch” on page 139](#)
- [“Returning the Switch to Operation” on page 153](#)

## Safety Information

For your protection, observe these safety precautions when setting up your equipment:

- Follow all cautions and instructions marked on the equipment and described in the documentation shipped with your switch.
- Follow all cautions and instructions marked on the equipment and described in the switch's safety and compliance guide.
- Ensure that the voltage and frequency of your power source match the voltage and frequency inscribed on the equipment's electrical ratings label.
- Follow the electrostatic discharge safety practices as described here.

## Safety Symbols

Note the meanings of these symbols that might appear in this document.



---

**Caution** - There is a risk of personal injury or equipment damage. To avoid personal injury and equipment damage, follow the instructions.

---



---

**Caution - Hot surface.** Avoid contact. Surfaces are hot and might cause personal injury if touched.

---



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**Caution - Hazardous voltages are present.** To reduce the risk of electric shock and danger to personal health, follow the instructions.

---

## ESD Measures

Some ESD-sensitive devices require special handling.



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**Caution** - Circuit boards contain electronic components that are extremely sensitive to static electricity. Ordinary amounts of static electricity from clothing or the work environment can destroy the components located on these boards. Do not touch the components along their connector edges.

---

## Antistatic Wrist Strap Use

Wear an antistatic wrist strap and use an antistatic mat when handling components such as power supplies and fan modules. When servicing or removing switch components, attach an antistatic strap to your wrist and then to a metal area on the chassis. Following this practice equalizes the electrical potentials between you and the switch.

## Antistatic Mat

Place ESD-sensitive components on an antistatic mat. These items can be used as an antistatic mat:

- Antistatic bag used to wrap a replacement part
- ESD mat
- Disposable ESD mat (shipped with some replacement parts)

### Related Information

- [“Service Tools” on page 65](#)
- [“Read the Switch Serial Number \(Oracle ILOM\)” on page 66](#)
- [“Locate the Switch” on page 67](#)
- [“Prevent ESD Damage” on page 67](#)
- [“Remove the Air Duct Assembly” on page 68](#)
- [“Remove a Snap Bracket” on page 72](#)
- [“Prepare to Power Off the Switch” on page 75](#)
- [“Power Off a Power Supply” on page 76](#)

## Service Tools

You need these tools for most service operations:

- Antistatic wrist strap
- Antistatic mat
- No. 1 Phillips screwdriver
- No. 2 Phillips screwdriver
- Paper clip
- PrizmMT ferrule cleaner - USConec part number 16899

### Related Information

- [“Safety Information” on page 64](#)
- [“Read the Switch Serial Number \(Oracle ILOM\)” on page 66](#)
- [“Locate the Switch” on page 67](#)
- [“Prevent ESD Damage” on page 67](#)
- [“Remove the Air Duct Assembly” on page 68](#)
- [“Remove a Snap Bracket” on page 72](#)
- [“Prepare to Power Off the Switch” on page 75](#)
- [“Power Off a Power Supply” on page 76](#)

## ▼ Read the Switch Serial Number (Oracle ILOM)

If you require technical support for your switch, you will be asked to provide the chassis serial number. You can read the chassis serial number from a pull-out strip located on the front of the switch, to the left of the left power supply. Additionally, there is an RFID tag on the SER MGT module.

You must remove the air duct assembly to access the strip or RFID tag. See [“Remove the Air Duct Assembly” on page 68](#) for instructions on how to read the serial number from the plastic strip or RFID tag.

If it is not convenient to read the strip or the RFID tag, you can use Oracle ILOM to obtain the chassis serial number.

- 1. Access the Oracle ILOM CLI.**

See [“Accessing the SP” on page 37](#).

- 2. Display the serial number.**

```
-> show /SYS product_serial_number

/SYS
  Properties:
    product_serial_number = 1133BDN082
->
```

### Related Information

- [“Safety Information” on page 64](#)
- [“Service Tools” on page 65](#)
- [“Locate the Switch” on page 67](#)
- [“Prevent ESD Damage” on page 67](#)

- [“Remove the Air Duct Assembly” on page 68](#)
- [“Remove a Snap Bracket” on page 72](#)
- [“Prepare to Power Off the Switch” on page 75](#)
- [“Power Off a Power Supply” on page 76](#)

## ▼ Locate the Switch

You can use the Locate LED to pinpoint the location of a switch. This task is helpful when you need to identify one particular switch from many other rack components.

---

**Note** - Unlike other Oracle products, the Locate LED is only at the rear of the switch and does not have button functionality. You control the Locate LED through Oracle ILOM.

---

1. **Access the Oracle ILOM CLI.**  
See [“Accessing the SP” on page 37](#).

2. **Set the Locate LED to blink.**  
-> `set /SYS/LOCATE value=Fast_Blink`

The white Locate LED blinks.

3. **After servicing the switch with the blinking Locate LED, turn the LED off.**  
-> `set /SYS/LOCATE value=off`

### Related Information

- [“Safety Information” on page 64](#)
- [“Service Tools” on page 65](#)
- [“Read the Switch Serial Number \(Oracle ILOM\)” on page 66](#)
- [“Prevent ESD Damage” on page 67](#)
- [“Remove the Air Duct Assembly” on page 68](#)
- [“Remove a Snap Bracket” on page 72](#)
- [“Prepare to Power Off the Switch” on page 75](#)
- [“Power Off a Power Supply” on page 76](#)

## ▼ Prevent ESD Damage

Many components housed within the chassis can be damaged by electrostatic discharge. To protect these components from damage, perform these steps before opening the chassis for service. See [“Safety Information” on page 64](#).

**1. Prepare an antistatic surface to set parts on during the removal, installation, or replacement process.**

Place ESD-sensitive components, such as printed circuit boards, on an antistatic mat.

**2. Attach an antistatic wrist strap.**

When servicing or removing switch components, attach an antistatic strap to your wrist and then to a metal area on the chassis.

**3. Consider your next task.**

- If you are servicing a data cable, see [“Remove a Data Cable” on page 89](#).
- If you are servicing any other component, see [“Remove the Air Duct Assembly” on page 68](#).

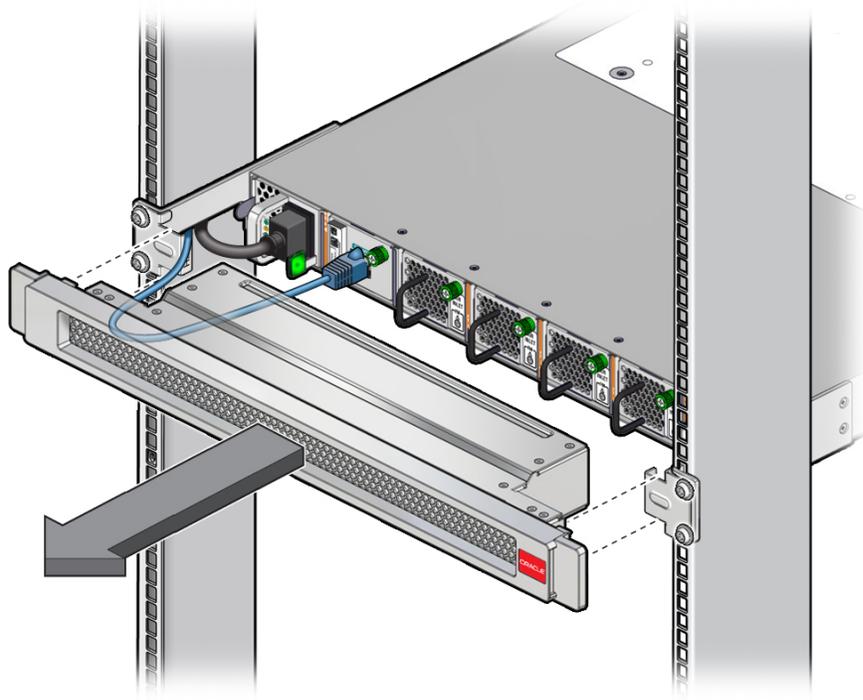
**Related Information**

- [“Safety Information” on page 64](#)
- [“Service Tools” on page 65](#)
- [“Read the Switch Serial Number \(Oracle ILOM\)” on page 66](#)
- [“Locate the Switch” on page 67](#)
- [“Remove the Air Duct Assembly” on page 68](#)
- [“Remove a Snap Bracket” on page 72](#)
- [“Prepare to Power Off the Switch” on page 75](#)
- [“Power Off a Power Supply” on page 76](#)

▼ **Remove the Air Duct Assembly**

1. **If the rack front door is installed, open it.**

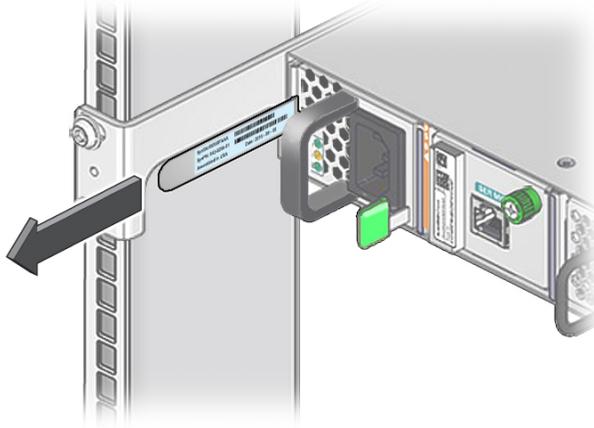
2. Grasp the air duct assembly at the left and right edges.



3. Pull the air duct assembly straight out of the rack.
4. Consider your next step.
  - If there is no SER MGT connection, set the air duct assembly aside.
  - If you have a full-time SER MGT connection:
    - a. Disconnect the SER MGT cable from the SER MGT port.



- a. Pull the plastic strip that is to the left of the left power supply.



- b. Read the serial number.
  - c. Slide the strip back into the chassis.
  - d. If you are not performing further service on the switch, install the air duct assembly.  
See [“Install the Air Duct Assembly” on page 166.](#)
6. (Optional) Read the chassis serial number from the RFID tag.
    - a. Place the RFID reader sensor next to the RFID tag on the SMM.
    - b. Read the serial number.
    - c. If you are not performing further service on the switch, install the air duct assembly.  
See [“Install the Air Duct Assembly” on page 166.](#)
7. Consider your next task.
    - Remove the battery  
See [“Remove the Battery” on page 109.](#)
    - Remove a fan module

See [“Remove a Fan Module”](#) on page 123.

- **If you are removing a power supply or removing the switch, first see [“Remove a Snap Bracket”](#) on page 72.**

### **Related Information**

- [“Safety Information”](#) on page 64
- [“Service Tools”](#) on page 65
- [“Read the Switch Serial Number \(Oracle ILOM\)”](#) on page 66
- [“Locate the Switch”](#) on page 67
- [“Prevent ESD Damage”](#) on page 67
- [“Remove a Snap Bracket”](#) on page 72
- [“Prepare to Power Off the Switch”](#) on page 75
- [“Power Off a Power Supply”](#) on page 76

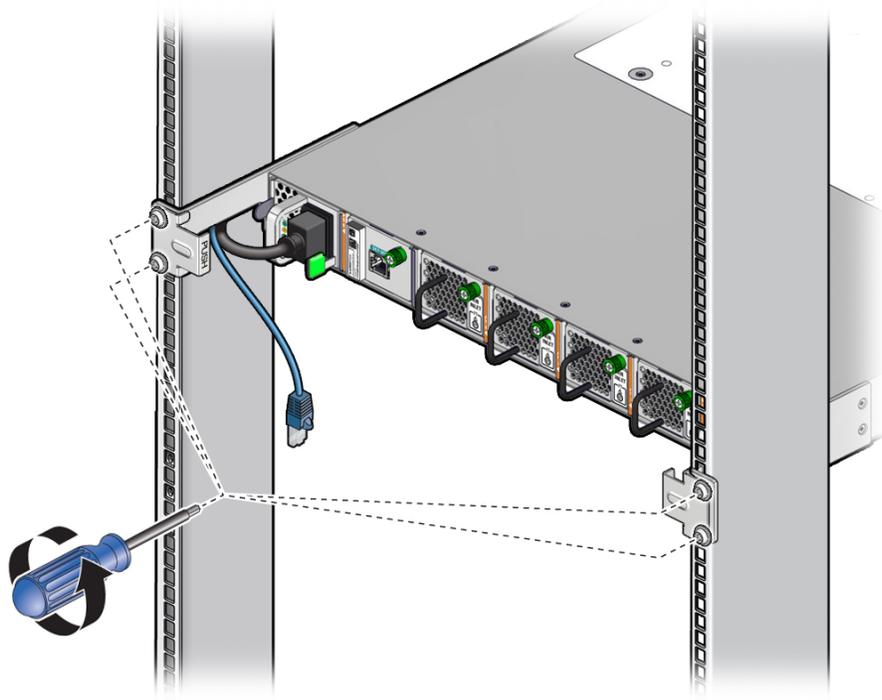
## ▼ **Remove a Snap Bracket**

1. **Consider your next step.**
  - **If you are removing a power supply, perform the next step on the snap bracket in front of that power supply.**
  - **If you are removing the switch, perform the next step on either snap bracket.**
2. **Using a No. 2 Phillips screwdriver, loosen the two screws securing the snap bracket by one rotation.**

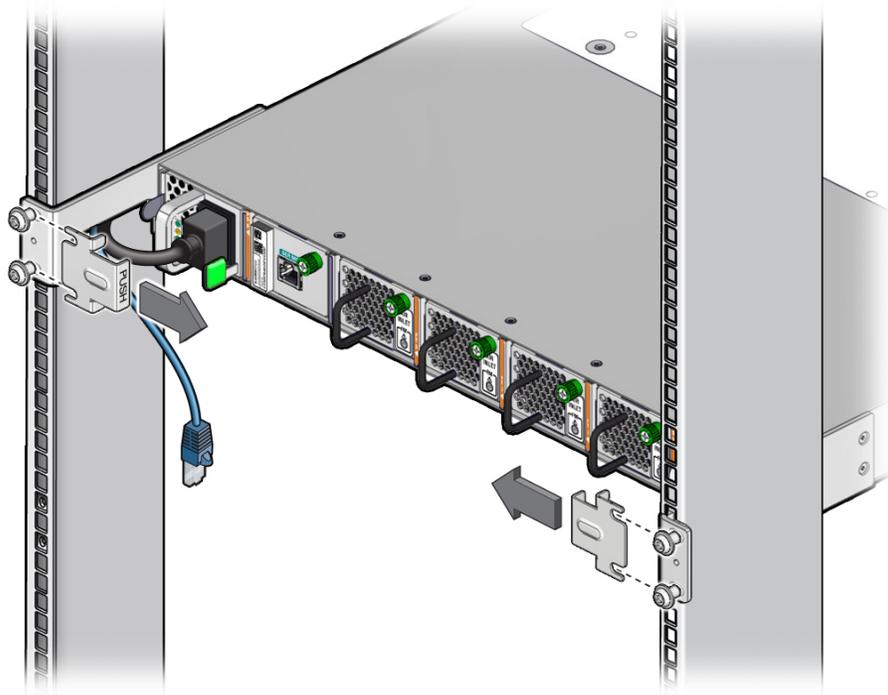
---

**Note** - Do not remove the screws, just loosen them for one rotation.

---



3. **Slide off the snap bracket and set it aside.**



4. **Consider your next step.**

- **If you are removing a power supply, turn the power supply off.**  
See [“Power Off a Power Supply”](#) on page 76.
- **If you are removing the switch, repeat [Step 2](#) and [Step 3](#) for the other snap bracket.**

5. **Prepare to power off the switch.**

See [“Prepare to Power Off the Switch”](#) on page 75.

### **Related Information**

- [“Safety Information”](#) on page 64
- [“Service Tools”](#) on page 65
- [“Read the Switch Serial Number \(Oracle ILOM\)”](#) on page 66
- [“Locate the Switch”](#) on page 67

- [“Prevent ESD Damage” on page 67](#)
- [“Remove the Air Duct Assembly” on page 68](#)
- [“Prepare to Power Off the Switch” on page 75](#)
- [“Power Off a Power Supply” on page 76](#)

## ▼ Prepare to Power Off the Switch

Perform this task before powering off the switch for a switch replacement.

---

**Note** - The steps of this task are a generalization of what is to be done. For more thorough instructions on how to accomplish these steps, refer to the *Oracle EDR InfiniBand Switch and Virtualized I/O Systems Administration Guide*, the *Oracle Fabric Manager 5.0 Administration Guide*, and the *Oracle Fabric OS 1.0 Administration Guide*.

---

1. **Notify affected users that the switch is to be shut down.**
2. **Access the SCP on the switch to be removed.**  
See [“Access the SCP \(RJ-45 Port\)” on page 39](#).
3. **If the switch to be removed is configured with the master Subnet Manager, initiate a handover to the standby Subnet Manager.**  
Refer to the *Oracle Fabric Manager 5.0 Administration Guide*. Wait for any handover to complete.
4. **If the switch to be removed is configured with any Subnet Manager, set the priority to the lowest.**  
Refer to the *Oracle Fabric Manager 5.0 Administration Guide*.
5. **Create a backup of the switch configuration for the switch to be removed.**
  - a. **On the switch, create a backup of the Oracle Fabric Manager configuration.**  
Refer to the *Oracle Fabric Manager 5.0 Administration Guide*.
  - b. **On the switch, create a backup of the Oracle Fabric OS configuration.**  
Refer to the *Oracle Fabric OS 1.0 Administration Guide*.
  - c. **Access the SP.**  
See [“Access the SP \(RJ-45 Port\)” on page 37](#)
  - d. **Write the SEFOS configuration to Oracle ILOM, and create a backup of the Oracle ILOM configuration.**

This backs up the SEFOS configuration. Refer to the *Oracle EDR InfiniBand Switch and Virtualized I/O Systems Administration Guide*.

- e. **Transfer the backup files to a safe place.**

**6. Power off the switch.**

See [“Power Off a Power Supply” on page 76](#).

**Related Information**

- [“Safety Information” on page 64](#)
- [“Service Tools” on page 65](#)
- [“Read the Switch Serial Number \(Oracle ILOM\)” on page 66](#)
- [“Locate the Switch” on page 67](#)
- [“Prevent ESD Damage” on page 67](#)
- [“Remove the Air Duct Assembly” on page 68](#)
- [“Remove a Snap Bracket” on page 72](#)
- [“Power Off a Power Supply” on page 76](#)

## ▼ Power Off a Power Supply

---

**Note** - Powering off both power supplies powers off the switch.

---

**1. Consider your first step.**

- **If you are removing a power supply, locate the power supply to be removed and its power cord.**

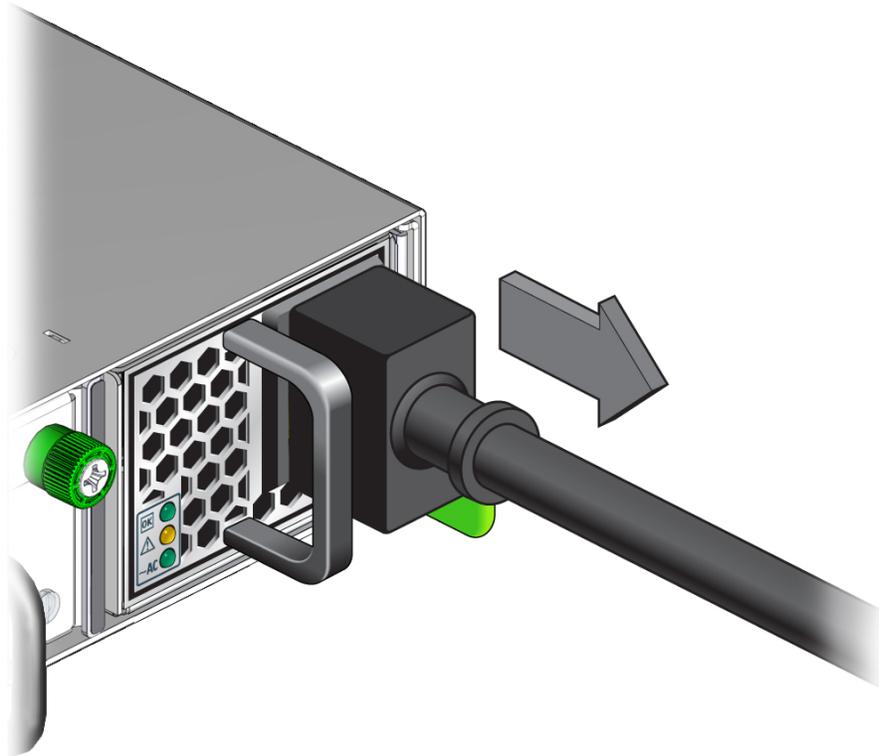
---

**Note** - If a power supply has failed, its Attention LED lights.

---

- **If you are powering off the switch, choose either power cord.**

2. Remove the power cord from the power supply.



Remove the power cord in a slow wiggling motion.



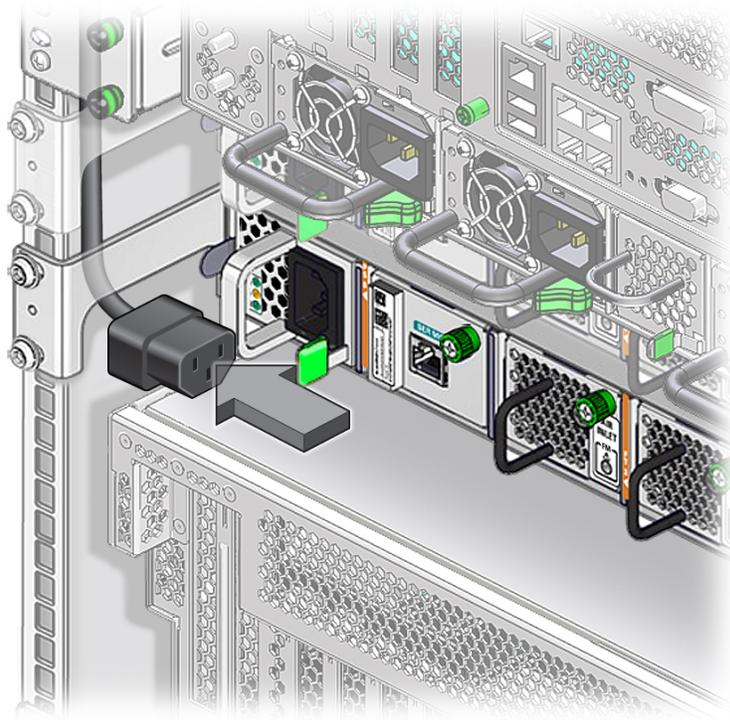
**Caution** - Pulling or jerking the cord out from the power supply might cause your hand to catch on the snap brackets, if they are installed.

The power supply is completely powered off.

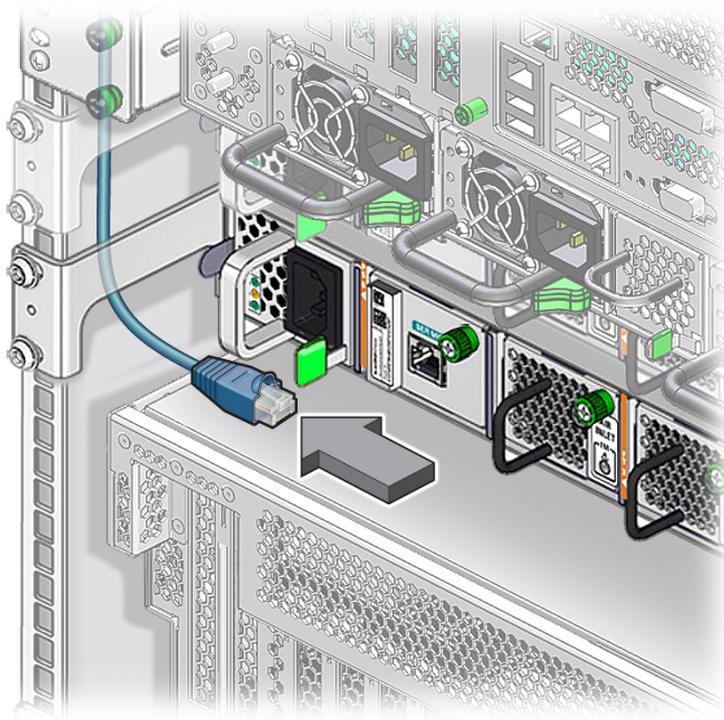
3. Consider your next step.

- If you are powering off the power supply for switch configuration, go to [Step 6](#).
- If you are powering off the power supply to remove the power supply or switch, go to [Step 4](#).

4. Feed the power cord back through the opening in the long front mounting bracket.



5. If the SER MGT cable also passes through the opening with the power cord, feed the SER MGT cable back through the opening.



6. Consider your next step.
  - If you powered off the power supply to remove it, do that now.  
See [“Remove a Power Supply”](#) on page 133.
  - If you powered off a power supply to power off the switch, repeat from [Step 2](#) to power off the other power supply, and power off the switch.
7. Consider your next step.
  - If you are removing the switch, disconnect the data cables from the switch.  
See [“Remove a Data Cable”](#) on page 89.
  - If you are configuring the switch, connect the data cables to the switch.  
See [“Install a Data Cable”](#) on page 98.

### **Related Information**

- [“Safety Information” on page 64](#)
- [“Service Tools” on page 65](#)
- [“Read the Switch Serial Number \(Oracle ILOM\)” on page 66](#)
- [“Locate the Switch” on page 67](#)
- [“Prevent ESD Damage” on page 67](#)
- [“Remove the Air Duct Assembly” on page 68](#)
- [“Remove a Snap Bracket” on page 72](#)
- [“Prepare to Power Off the Switch” on page 75](#)

## Servicing Data Cables

---

Data cables provide a conduit for high-speed Ethernet network and IB fabric communication. The data cables are located across the rear of the switch. PrizmMT cables are on the left, SFP+ cables are in the center, and RJ-45 cables are on the right. See [“Identifying Components” on page 11](#).

| Description                                                            | Links                                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Familiarize yourself with the three cable types.                       | <a href="#">“Identifying Data Cable Types” on page 82</a>                                                                                                                                                                                                                                               |
| Replace a faulty data cable.                                           | <a href="#">“Locate a Faulty Data Cable” on page 85</a><br><a href="#">“Remove a Data Cable” on page 89</a><br><a href="#">“(Optional) Assemble the Optical Fiber SFP+ Cables” on page 96</a><br><a href="#">“Install a Data Cable” on page 98</a><br><a href="#">“Verify a Data Cable” on page 104</a> |
| Remove a data cable as part of another component's service operation.  | <a href="#">“Remove a Data Cable” on page 89</a>                                                                                                                                                                                                                                                        |
| Install a data cable as part of another component's service operation. | <a href="#">“Install a Data Cable” on page 98</a><br><a href="#">“(Optional) Clean the PrizmMT Receptacle or Connector Ferrule” on page 104</a>                                                                                                                                                         |
| Add additional data cables.                                            | <a href="#">“(Optional) Assemble the Optical Fiber SFP+ Cables” on page 96</a><br><a href="#">“Install a Data Cable” on page 98</a><br><a href="#">“(Optional) Clean the PrizmMT Receptacle or Connector Ferrule” on page 104</a><br><a href="#">“Verify a Data Cable” on page 104</a>                  |
| Decrease the number of existing data cables.                           | <a href="#">“Remove a Data Cable” on page 89</a>                                                                                                                                                                                                                                                        |
| Identify a faulty data cable.                                          | <a href="#">“Locate a Faulty Data Cable” on page 85</a><br><a href="#">“Detecting and Managing Faults” on page 15</a>                                                                                                                                                                                   |

### Related Information

- [“Identifying Components” on page 11](#)

- [“Detecting and Managing Faults” on page 15](#)
- [“Preparing for Service” on page 63](#)
- [“Servicing the Battery” on page 107](#)
- [“Servicing Fan Modules” on page 119](#)
- [“Servicing Power Supplies” on page 129](#)
- [“Replacing the Switch” on page 139](#)
- [“Returning the Switch to Operation” on page 153](#)

## Identifying Data Cable Types

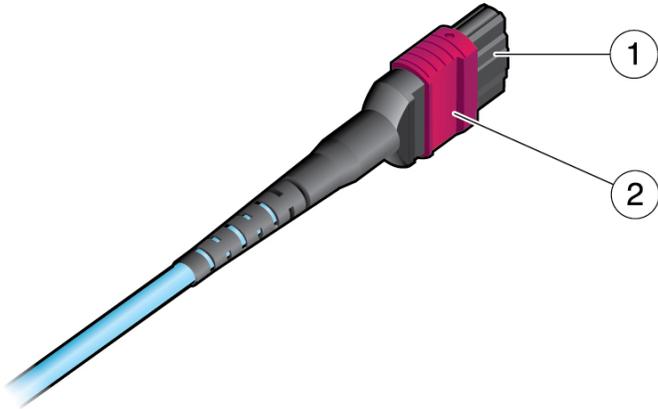
These topics discuss the data cables for the switch.

- [“PrizmMT Cables” on page 83](#)
- [“SFP+ Cable Transceivers” on page 84](#)
- [“RJ-45 Cables” on page 84](#)

### Related Information

- [“Locate a Faulty Data Cable” on page 85](#)
- [“Remove a Data Cable” on page 89](#)
- [“\(Optional\) Assemble the Optical Fiber SFP+ Cables” on page 96](#)
- [“Install a Data Cable” on page 98](#)
- [“Verify a Data Cable” on page 104](#)
- [“\(Optional\) Clean the PrizmMT Receptacle or Connector Ferrule” on page 104](#)

## PrizmMT Cables



| No. | Description                                                                       |
|-----|-----------------------------------------------------------------------------------|
| 1   | PrizmMT ferrule                                                                   |
| 2   | Magenta-colored housing (4x technology)<br>Black-colored housing (12x technology) |

This table lists the marketing part numbers for the supported cables.

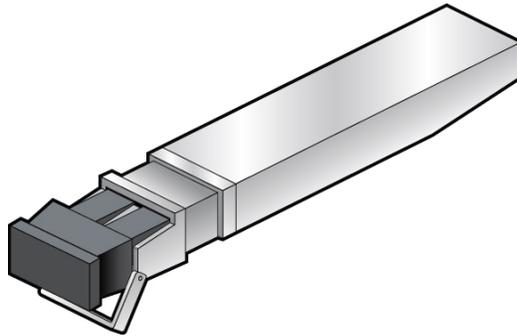
| Length | 12x PrizmMT | 4x PrizmMT | 4x PrizmMT to 4x Standard MT |
|--------|-------------|------------|------------------------------|
| 1m     | 7111615     | 7111595    | 7111607                      |
| 2m     | 7111616     | 7111596    | 7111608                      |
| 3m     | 7111617     | 7111598    | 7111609                      |
| 5m     | 7111618     | 7111599    | 7111610                      |
| 10m    | 7111642     | 7111600    | 7111611                      |
| 20m    | 7111644     | 7111601    | 7111612                      |
| 50m    | 7111646     | 7111603    | 7111613                      |
| 70m    | 7111647     | 7111605    | 7111614                      |

### Related Information

- [“SFP+ Cable Transceivers” on page 84](#)

- [“RJ-45 Cables” on page 84](#)

## SFP+ Cable Transceivers



This table lists the marketing part numbers for the supported transceivers.

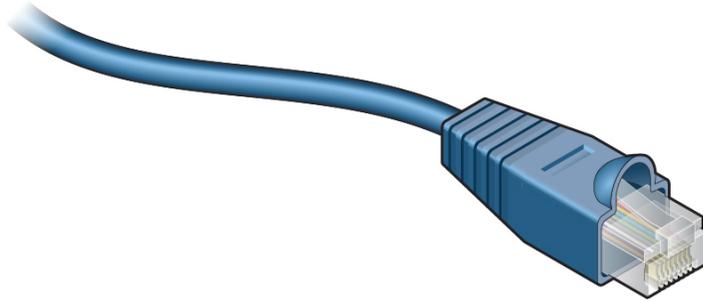
| Part Number | Technology                           |
|-------------|--------------------------------------|
| 7111909     | SFP+ 10GBASE-T adapter (transceiver) |

### Related Information

- [“PrizmMT Cables” on page 83](#)
- [“RJ-45 Cables” on page 84](#)

## RJ-45 Cables

RJ-45 cables should be of Category 6, 6e, or 7 specifications.



### Related Information

- [“PrizmMT Cables” on page 83](#)
- [“SFP+ Cable Transceivers” on page 84](#)

## ▼ Locate a Faulty Data Cable

You must determine which data cable is faulty before you replace it.

1. **Consider your first step.**
  - If you are at the switch, go to [Step 2](#).
  - If you are remote to the switch, go to [Step 3](#).
2. **At the rear of the switch, check the Link LEDs of the SFP+ and RJ-45 connectors.**

For each cable connected to a known functional host, the Link LED should be on. See [“SFP+ Link LEDs” on page 33](#) and [“RJ-45 Link LEDs” on page 34](#).

  - **If the Link LED of the data cable is off, replace that cable.**  
See [“Remove a Data Cable” on page 89](#).
  - If you cannot determine if a cable is faulty, go to [Step 3](#).
3. **Access the Oracle ILOM CLI.**  
See [“Accessing the SP” on page 37](#).
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 |

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, replace the cable attached to that port.**

See [“Remove a Data Cable” on page 89](#).

**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.

```
-> 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 OFOS is accessed, the OFOS configuration wizard might start. If this happens, refer to the *Oracle InfiniBand Switch IS2-46 Installation Guide*, running the OFOS configuration wizard.

### 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, replace the cable attached to that port.**

See [“Remove a Data Cable” on page 89](#).

**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. If you are unable to determine if a data cable is faulty, seek further information.**

See [“Detecting and Managing Faults”](#) on page 15.

**Related Information**

- [“Identifying Data Cable Types”](#) on page 82
- [“Remove a Data Cable”](#) on page 89
- [“\(Optional\) Assemble the Optical Fiber SFP+ Cables”](#) on page 96
- [“Install a Data Cable”](#) on page 98
- [“Verify a Data Cable”](#) on page 104
- [“\(Optional\) Clean the PrizmMT Receptacle or Connector Ferrule”](#) on page 104

## ▼ Remove a Data Cable

Removing a single data cable is a hot-swap operation. If you are removing all data cables as part of a switch replacement, the switch must be powered off.

This task describes how to remove the cables from the switch, so that the cable can be replaced. If you are removing all cables for switch replacement, start removing the cables from the left side of the switch, working your way to the right.

---

**Note** - These instructions are valid for both IB and Ethernet data cables.

---

**1. Determine which data cable to remove.**

See [“Locate a Faulty Data Cable”](#) on page 85.

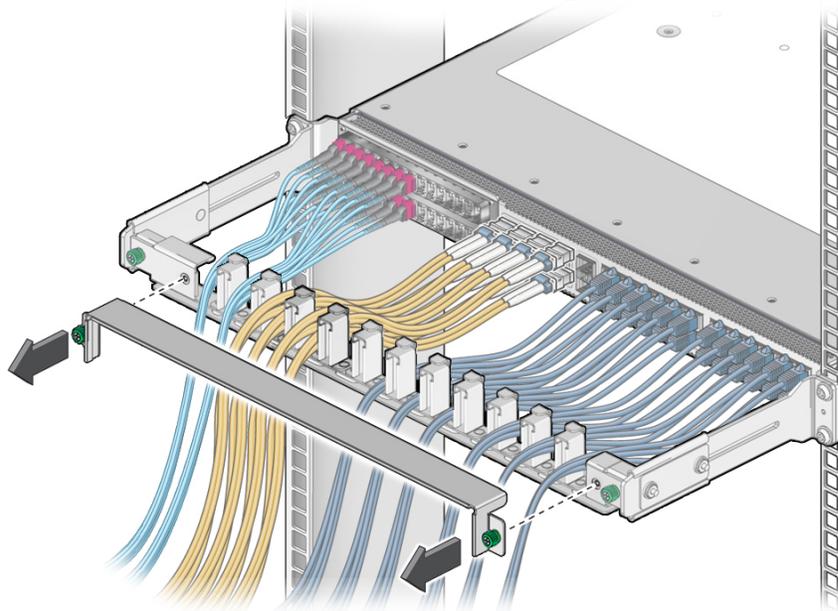
**2. Consider your next step.**

- **If you have not prepared for service, you must do so now.**

See [“Preparing for Service”](#) on page 63.

- **If you have completed those prerequisite tasks, go to [Step 3](#).**

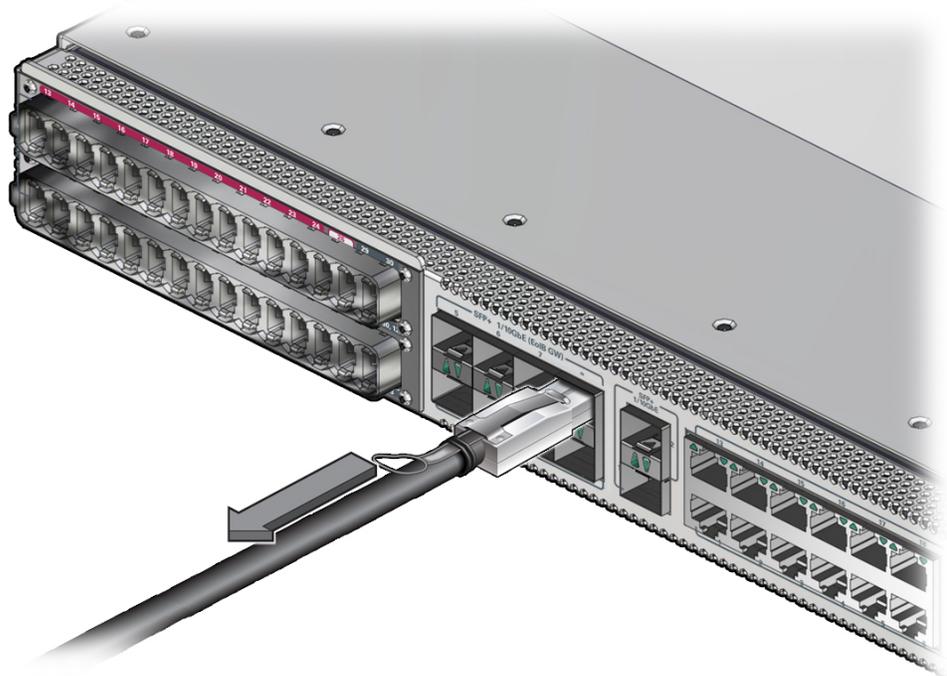
3. Loosen the thumbscrews and remove the cover for the CMB.



4. Locate the cable to be removed.
5. (Optional) If necessary, label that cable so that its corresponding port, its peer, or both, are identified.
6. Consider your next steps.  
If you are removing all cables for switch replacement, start with the PrizmMT cables.
  - If you are removing a PrizmMT cable, go to [Step 7](#).
  - If you are removing a one-piece copper core SFP+ cable, go to [Step 8](#).
  - If you are removing an assembled fiber optic SFP+ cable, go to [Step 9](#).
  - If you are removing an RJ-45 cable, go to [Step 10](#).
7. Remove a PrizmMT cable.
  - a. Pinch the PrizmMT cable connector housing between your thumb and forefinger.



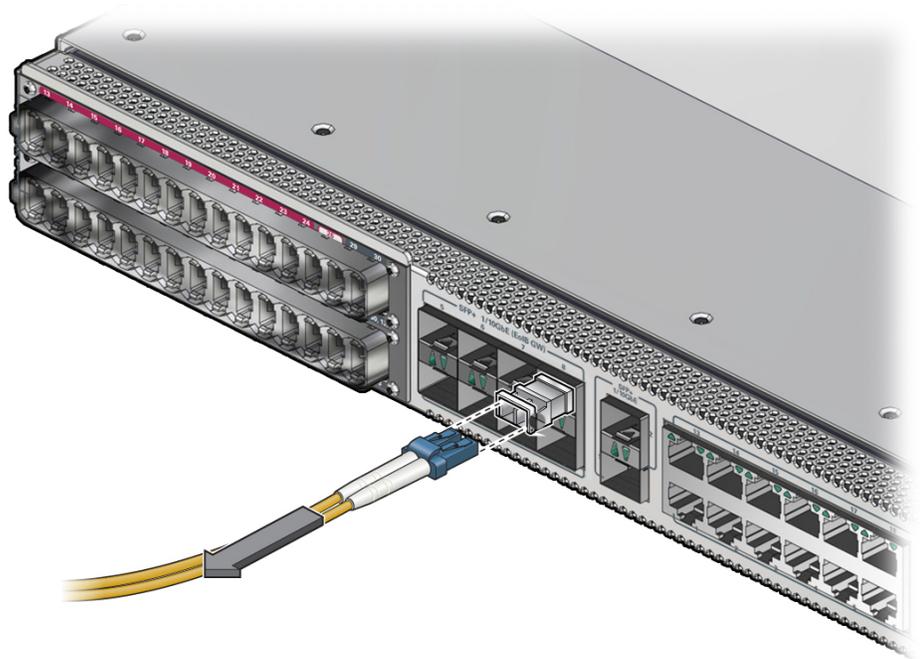
The cable connector comes free.



c. Go to [Step 11](#).

9. Remove an assembled fiber optic SFP+ cable.

- a. Press the release tab on the LC connector and pull back.

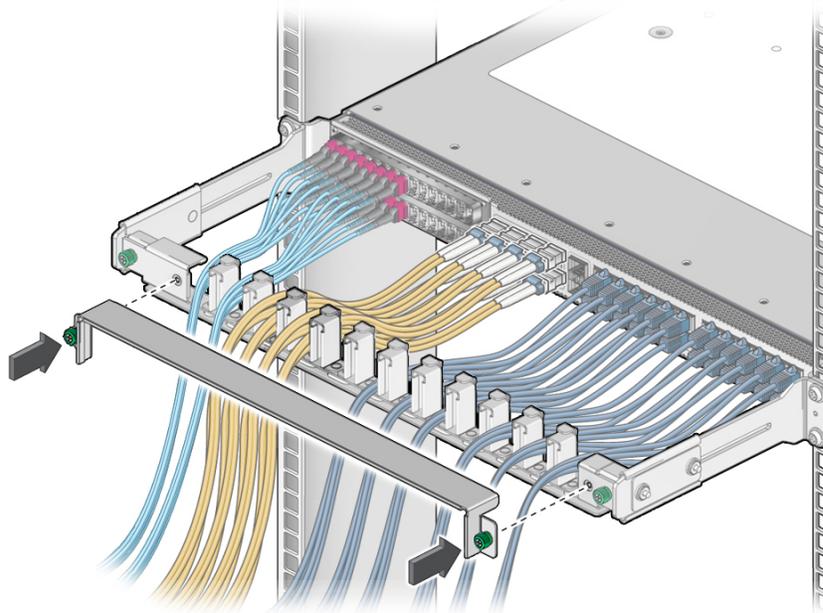


The LC connector and fiber optic cable come free of the transceiver.





**16. Replace the cover for the CMB and tighten the thumbscrews.**



**Related Information**

- [“Identifying Data Cable Types” on page 82](#)
- [“Locate a Faulty Data Cable” on page 85](#)
- [“\(Optional\) Assemble the Optical Fiber SFP+ Cables” on page 96](#)
- [“Install a Data Cable” on page 98](#)
- [“Verify a Data Cable” on page 104](#)
- [“\(Optional\) Clean the PrizmMT Receptacle or Connector Ferrule” on page 104](#)

▼ **(Optional) Assemble the Optical Fiber SFP+ Cables**

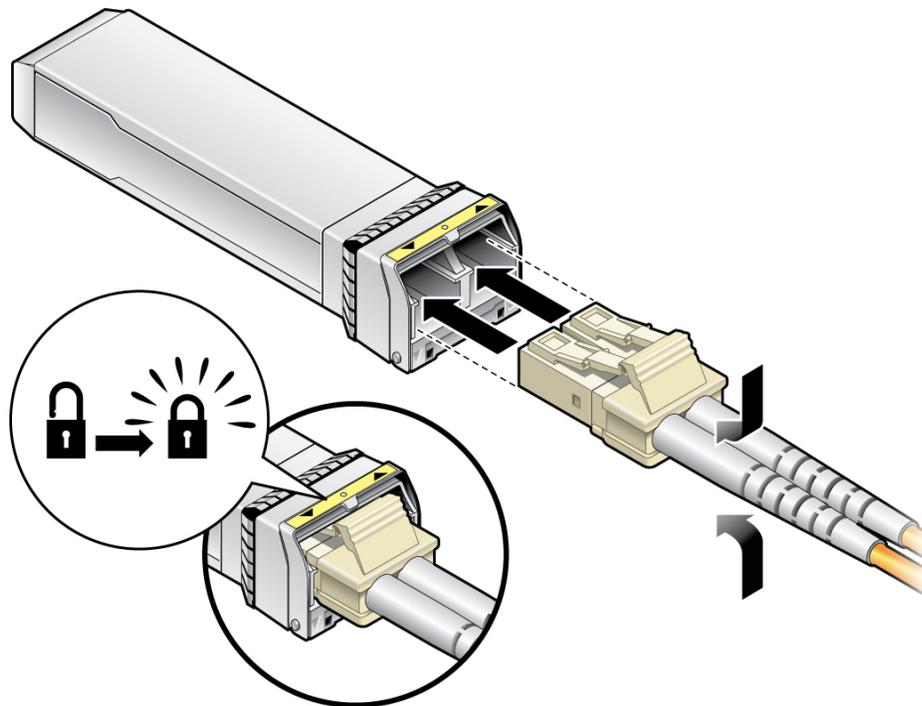
If the optical SFP+ cables are unassembled, you must assemble the cables before connecting them to the switch.

---

**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 “[Servicing Data Cables](#)” on page 81.
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 [Step 3](#) through [Step 6](#) for the other end of the cable.**

8. Repeat [Step 2](#) through [Step 7](#) for any additional optical fiber SFP+ cables to be installed.
9. Install the cable or return to that task.  
See [“Install a Data Cable”](#) on page 98.

#### Related Information

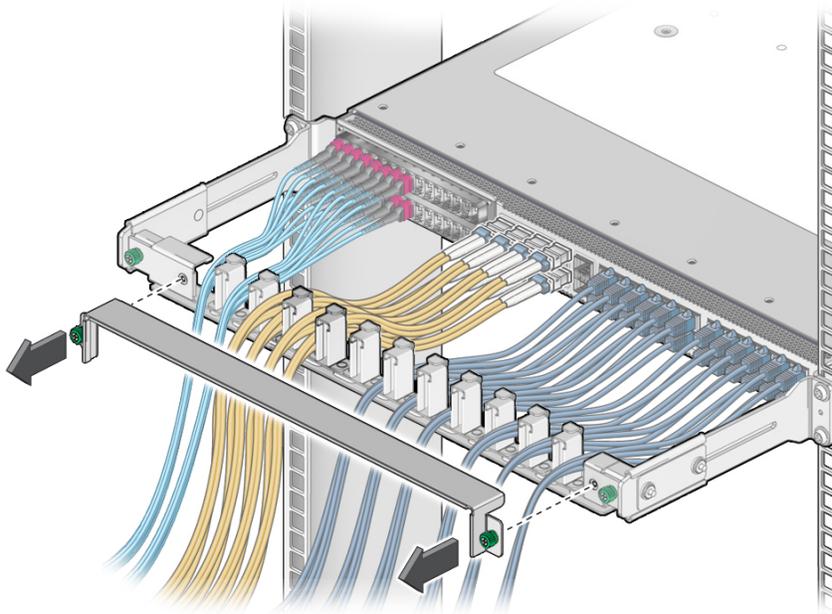
- [“Identifying Data Cable Types”](#) on page 82
- [“Locate a Faulty Data Cable”](#) on page 85
- [“Remove a Data Cable”](#) on page 89
- [“Install a Data Cable”](#) on page 98
- [“Verify a Data Cable”](#) on page 104
- [“\(Optional\) Clean the PrizmMT Receptacle or Connector Ferrule”](#) on page 104

## ▼ Install a Data Cable

Installing a single data cable is a hot-swap operation. If you are installing all data cables at one time, the switch should be in a powered off state.

1. Consider your first steps.
  - If you are replacing a data cable, remove the faulty or obsolete data cable first, then return to [Step 3](#) of this task.  
See [“Remove a Data Cable”](#) on page 89.
  - If you are installing a replacement cable, go to [Step 3](#).
  - If you are adding an additional data cable, see [“Preparing for Service”](#) on page 63, and then go to [Step 2](#).
  - If you are installing a data cable as part of a switch installation task, go to [Step 6](#).

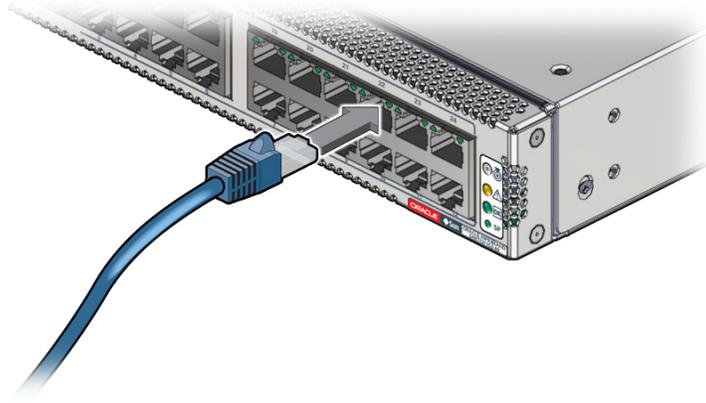
2. If you have not already done so, loosen the thumbscrews and remove the cover for the CMB.



3. If you are installing an optical fiber SFP+ cable that needs assembly, assemble the cable now.  
See “(Optional) Assemble the Optical Fiber SFP+ Cables” on page 96.
4. Connect the replacement cable to the remote location, and route it to the switch.  
See the *Oracle InfiniBand Switch IS2-46 Installation Guide*, routing data cables.
5. Bring the cable to the switch and remove its protective cap, if installed.
6. Consider your next steps.  
If you are installing all cables as part of a switch replacement, start with the RJ-45 cables.
  - If you are installing an RJ-45 cable, go to [Step 7](#).
  - If you are installing an SFP+ cable, go to [Step 8](#).
  - If you are installing a PrizmMT cable, go to [Step 9](#).
7. Install an RJ-45 cable.

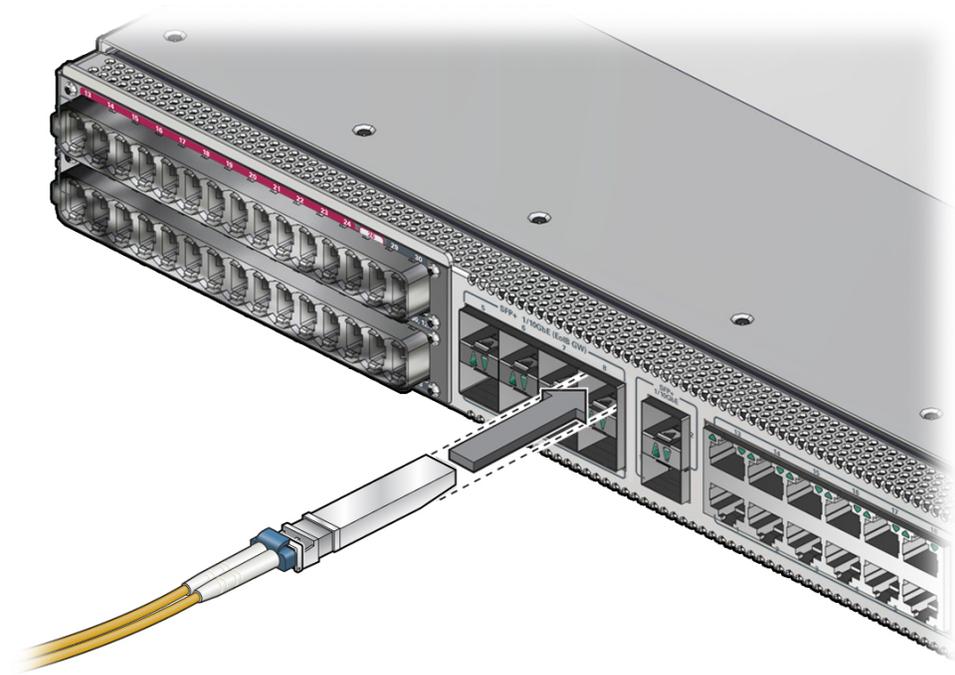
- a. **Align the RJ-45 connector to where it will install into the receptacle.**

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



- b. **Firmly press the RJ-45 connector into the receptacle until you hear a click.**
  - c. **Go to [Step 10](#).**
8. **Install an SFP+ cable.**
    - a. **Align the SFP+ connector to where it will install into the receptacle.**

The product label on the connector is up for the upper row of receptacles and down for the lower row of receptacles.



- b. Slowly move the connector in and continue to push until you feel a detent.
- c. Go to [Step 10](#).

9. Install a PrizmMT cable.

---

**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.

---

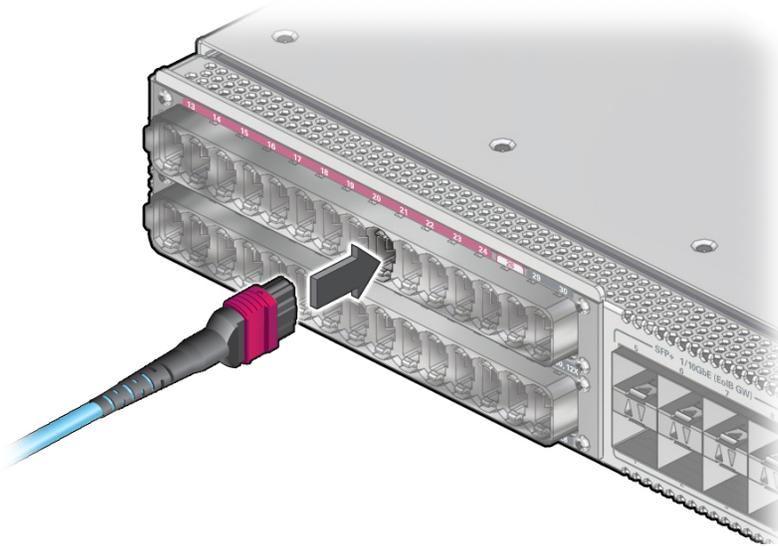
- a. Remove any filler plug (if installed) from the PrizmMT receptacle where you are installing the cable and visually inspect the receptacle.

The receptacle should be clean and free of dirt or debris. If the receptacle is dirty, clean it. See [“\(Optional\) Clean the PrizmMT Receptacle or Connector Ferrule”](#) on page 104.

- b. **Remove the protective cap from the cable connector and visually inspect the connector.**

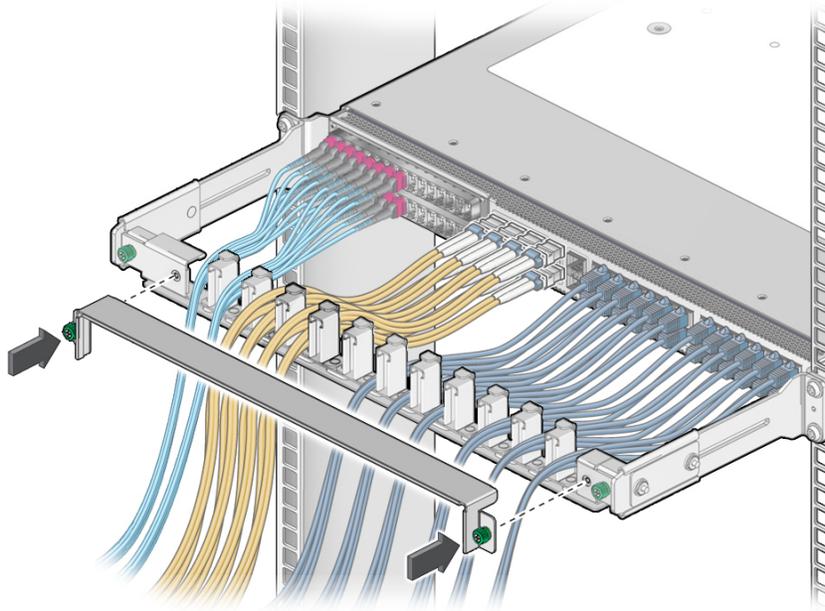
The connector should be clean and free of dirt or debris. If the connector is dirty, clean it. See [“\(Optional\) Clean the PrizmMT Receptacle or Connector Ferrule”](#) on page 104.

- c. **Align the PrizmMT connector to where it will connect.**



- d. **Firmly press the PrizmMT connector into the receptacle until you feel a detent.**
10. **Lay the cable into the CMB.**
  11. **If you installed a data cable as part of a switch configuration, return to that task.**  
See [“Configure the Replacement Switch”](#) on page 161.
  12. **Repeat [Step 3](#) through [Step 10](#) for any additional cables to be installed.**

13. **Replace the cover for the CMB and tighten the thumbscrews.**



14. **Consider your next steps.**
  - If you installed a data cable as part of a replacement operation, go to [Step 15](#).
  - If you installed all data cables as part of the switch installation task, return to switch configuration.  
See “[Configure the Replacement Switch](#)” on page 161.
  - If you installed a new data cable, go to [Step 15](#).
15. **Verify the data cable.**  
See “[Verify a Data Cable](#)” on page 104.

#### Related Information

- “[Identifying Data Cable Types](#)” on page 82
- “[Locate a Faulty Data Cable](#)” on page 85
- “[Remove a Data Cable](#)” on page 89
- “[\(Optional\) Assemble the Optical Fiber SFP+ Cables](#)” on page 96

- [“Verify a Data Cable” on page 104](#)
- [“\(Optional\) Clean the PrizmMT Receptacle or Connector Ferrule” on page 104](#)

## ▼ **Verify a Data Cable**

After you install a data cable, you can verify its functionality.

1. **Verify that the data cable is no longer considered faulty.**  
See [“Locate a Faulty Data Cable” on page 85](#), then return to this task.
2. **If the known good replacement data cable is still identified as faulty, check the cable's connection remote from the switch.**  
See [“Detecting and Managing Faults” on page 15](#) for assistance.

### **Related Information**

- [“Identifying Data Cable Types” on page 82](#)
- [“Locate a Faulty Data Cable” on page 85](#)
- [“Remove a Data Cable” on page 89](#)
- [“\(Optional\) Assemble the Optical Fiber SFP+ Cables” on page 96](#)
- [“Install a Data Cable” on page 98](#)
- [“\(Optional\) Clean the PrizmMT Receptacle or Connector Ferrule” on page 104](#)

## ▼ **(Optional) Clean the PrizmMT Receptacle or Connector Ferrule**

Perform this procedure when you install a PrizmMT cable.

1. **Determine your first step.**
  - If you are cleaning a receptacle, go to [Step 2](#).
  - If you are cleaning a connector, go to [Step 9](#).
2. **Remove the adapter from the end of the PrizmMT cleaner.**
3. **Insert the cleaner tip into the receptacle.**
4. **Pump the cleaner into the receptacle, advancing the cleaning cloth inside.**

5. **Remove the cleaner from the receptacle and verify cleanliness.**
6. **Repeat from [Step 3](#) if the fibers are still dirty.**
7. **Replace the adapter onto the end of the PrizmMT cleaner.**
8. **Return to [“Install a Data Cable” on page 98](#).**
9. **Open the lid of the adapter on the end of the PrizmMT cleaner.**
10. **Insert the connector into the adapter.**
11. **Press the connector against the adapter, thereby pumping the cleaner, and advancing the cleaning cloth inside.**
12. **Remove the connector from the adapter and verify cleanliness.**
13. **Repeat from [Step 10](#) if the fibers are still dirty.**
14. **Close the lid of the adapter on the end of the PrizmMT cleaner.**
15. **Return to [“Install a Data Cable” on page 98](#).**

#### **Related Information**

- [“Identifying Data Cable Types” on page 82](#)
- [“Locate a Faulty Data Cable” on page 85](#)
- [“Remove a Data Cable” on page 89](#)
- [“\(Optional\) Assemble the Optical Fiber SFP+ Cables” on page 96](#)
- [“Install a Data Cable” on page 98](#)
- [“Verify a Data Cable” on page 104](#)



## Servicing the Battery

---

The battery maintains a constant voltage to the real time clock, which provides the time and date of the switch. The battery is located inside the SMM, on the left side of the front panel, adjacent to PS 0. See [“Identifying Components” on page 11](#).

| Description                         | Links                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Replace the faulty battery.         | <a href="#">“Determine if the Battery Is Faulty” on page 107</a><br><a href="#">“Remove the Air Duct Assembly” on page 68</a><br><a href="#">“Remove the Battery” on page 109</a><br><a href="#">“Install the Battery” on page 113</a><br><a href="#">“Verify the Battery” on page 117</a><br><a href="#">“Install the Air Duct Assembly” on page 166</a> |
| Determine if the battery is faulty. | <a href="#">“Determine if the Battery Is Faulty” on page 107</a><br><a href="#">“Detecting and Managing Faults” on page 15</a>                                                                                                                                                                                                                            |

### Related Information

- [“Identifying Components” on page 11](#)
- [“Detecting and Managing Faults” on page 15](#)
- [“Preparing for Service” on page 63](#)
- [“Servicing Data Cables” on page 81](#)
- [“Servicing Fan Modules” on page 119](#)
- [“Servicing Power Supplies” on page 129](#)
- [“Replacing the Switch” on page 139](#)
- [“Returning the Switch to Operation” on page 153](#)

## ▼ Determine if the Battery Is Faulty

You must determine if the battery is faulty before you replace it.

**1. Access the Oracle ILOM CLI.**

See [“Accessing the SP” on page 37.](#)

**2. Determine if the battery has become problematic.**

```
-> show /System/Open_Problems
Open Problems (1)
Date/Time           Subsystems           Component
-----
Thu Dec 17 05:00:01 2015 System              MB (Motherboard)
  fault.chassis.battery.fail (Probability:100, UUID:76a2179a-51bd-c836-a7f1-af62953577fa, Resource:/SYS/
  MB, Part
  Number:7092577, Serial Number:AK00329231, Reference Document:http://support.oracle.com/msg/---)
->
```

- **If you see the word battery and Oracle ILOM target /SYS/MB in the output, then replace the battery.**

Start at [“Remove the Air Duct Assembly” on page 68.](#)

- **If you see a different component identified in the output, then service that component.**

See [“Open Problem Faults” on page 48](#) and [“Oracle ILOM Legacy Target Replaceable Components” on page 28.](#)

**3. Determine if the battery has faulted.**

```
-> show /SYS/MB/V_VBAT alarm_status
/SYS/MB/V_VBAT
Properties:
  alarm_status = state_asserted
->
```

If the alarm status is anything other than cleared, replace the battery. Start at [“Remove the Air Duct Assembly” on page 68.](#)

**4. If you are unable to determine if the battery is faulty, seek further information.**

See [“Detecting and Managing Faults” on page 15.](#)

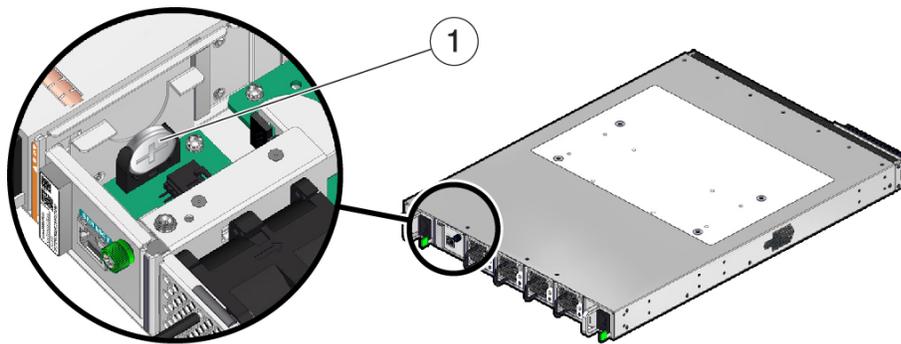
**Related Information**

- [“Remove the Battery” on page 109](#)
- [“Install the Battery” on page 113](#)
- [“Verify the Battery” on page 117](#)

## ▼ Remove the Battery

Removing the battery is a hot-swap operation. You do not need to power off the switch before you remove the battery.

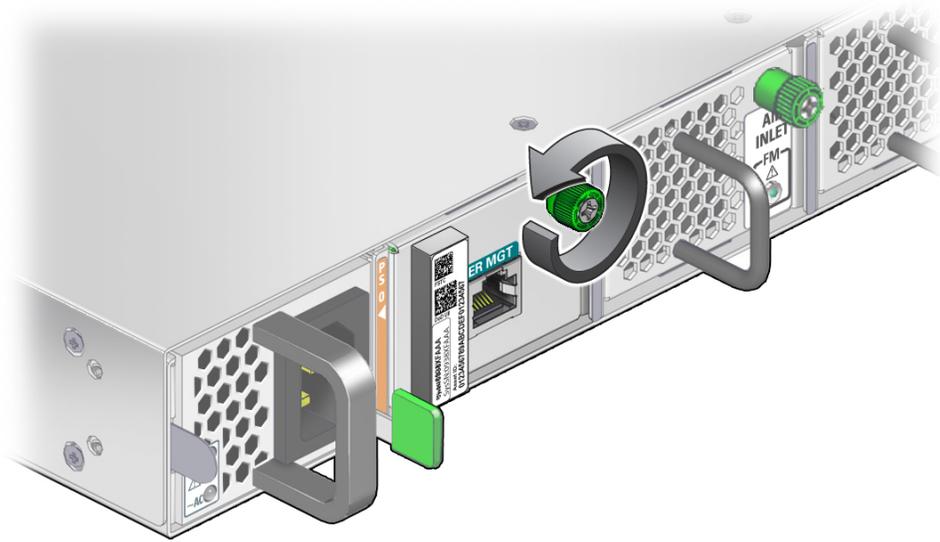
The battery is located inside the SMM.



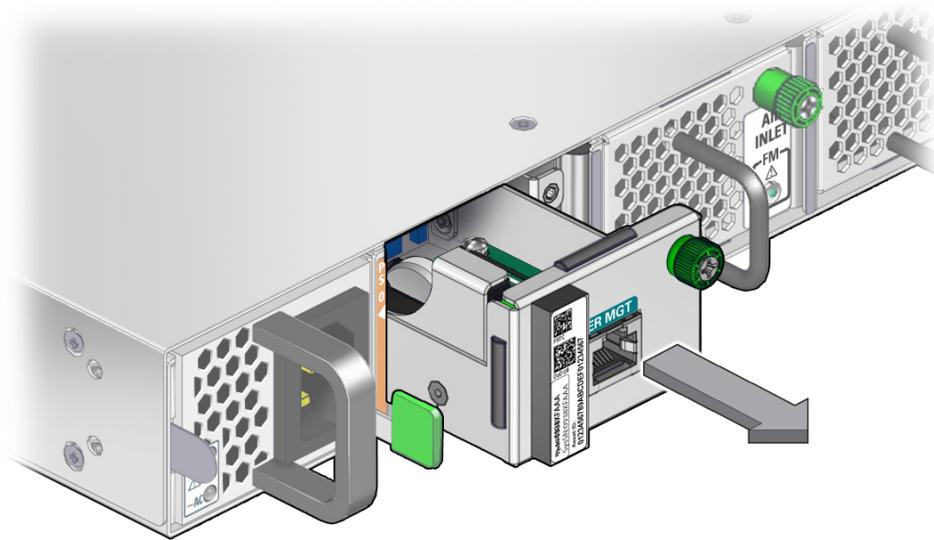
| No. | Description |
|-----|-------------|
| 1   | Battery     |

1. **Consider your first step.**
  - **If you have not prepared for service, you must do so now.**  
See [“Preparing for Service”](#) on page 63.
  - **If you have completed those prerequisite tasks, go to [Step 2](#).**
2. **If you have not already done so, remove the air duct assembly and SER MGT cable (if connected).**  
See [“Remove the Air Duct Assembly”](#) on page 68.

3. Fully loosen the captive thumbscrew at the right side of the SMM.

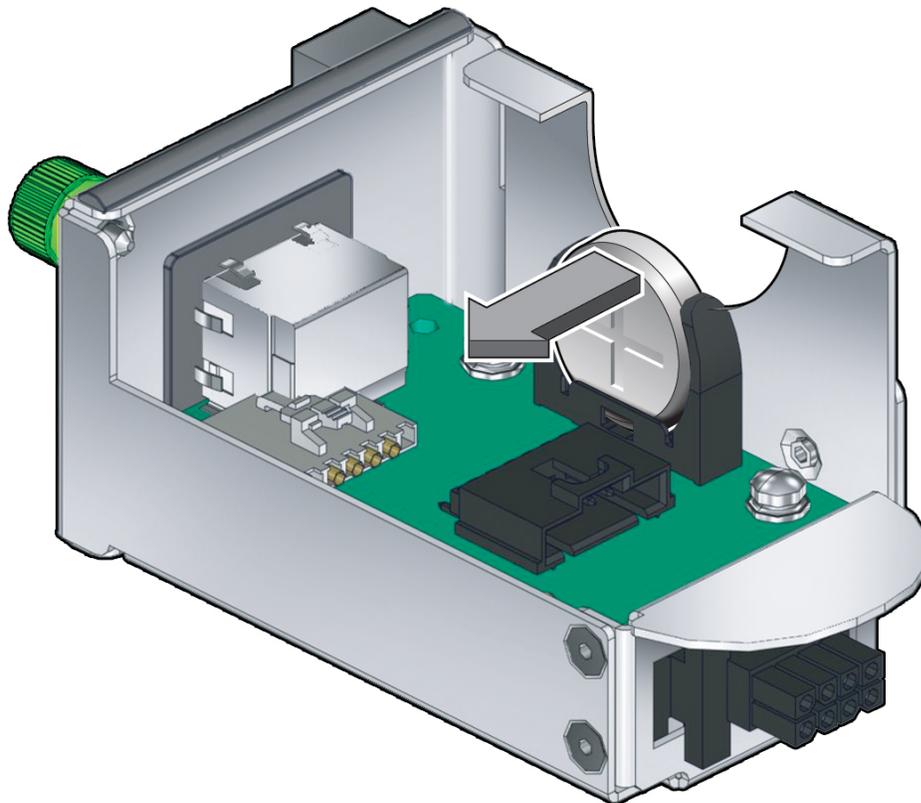


4. Grasp the thumbscrew and pull the SMM straight out.



5. Set the SMM down on an antistatic mat.

6. With the SER MGT port facing away from you, pop the battery out of the holder to the left.



7. Properly dispose of the battery.
8. Install a new battery.  
See [“Install the Battery” on page 113](#).

### Related Information

- [“Determine if the Battery Is Faulty” on page 107](#)
- [“Install the Battery” on page 113](#)
- [“Verify the Battery” on page 117](#)

## ▼ Install the Battery

Installing the battery is a hot-swap operation. You do not need to power off the switch before installing the battery.



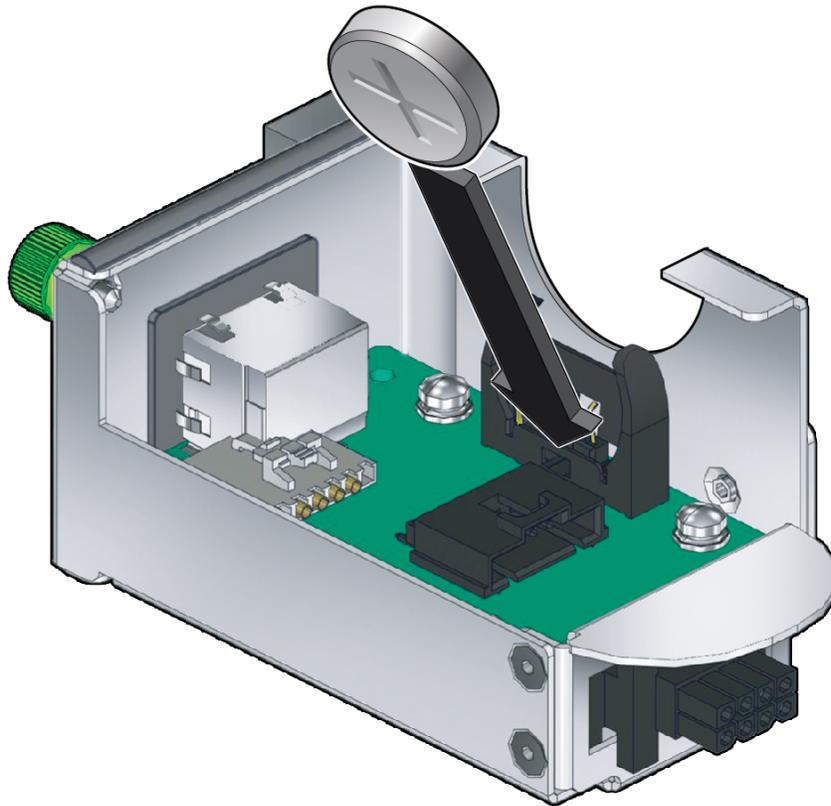
---

**Caution** - The slot located adjacent to the left power supply, PS 0, is dedicated to the SMM. Inserting a fan module in this slot, or inserting the SMM into a fan module slot, will damage both the module and the switch.

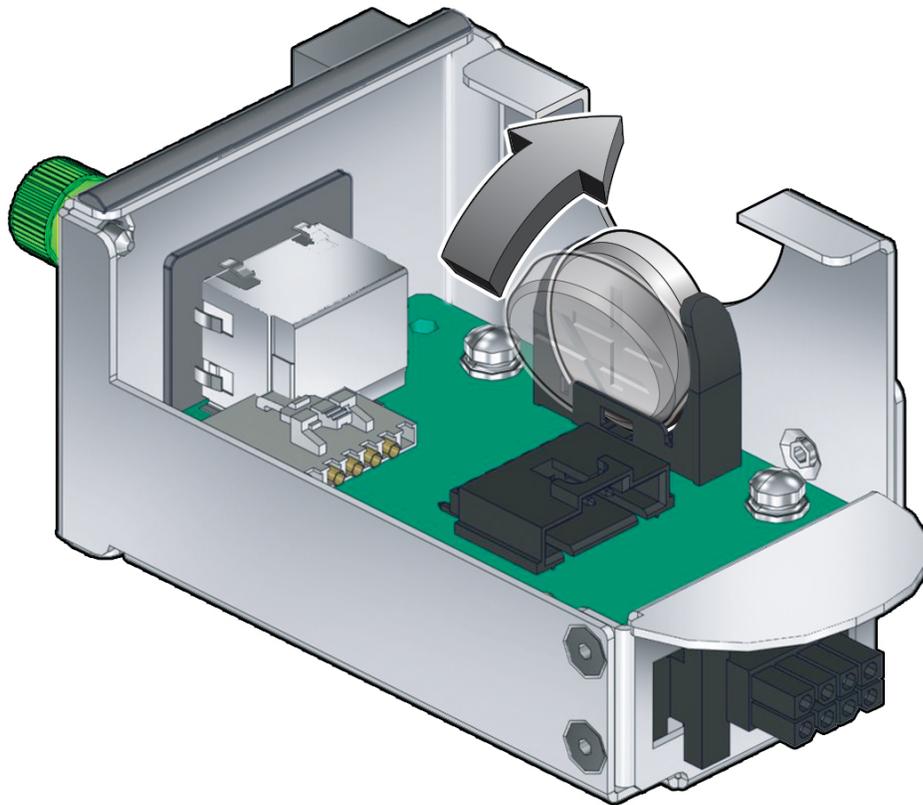
---

1. **If you are replacing the battery, remove the faulty battery first, then return to [Step 2](#) of this task.**  
See [“Remove the Battery”](#) on page 109.
2. **Remove the new battery from its packaging and align it to the holder where it will install.**

With the SER MGT port facing away from you, the plus side of the battery is angled down toward the left.

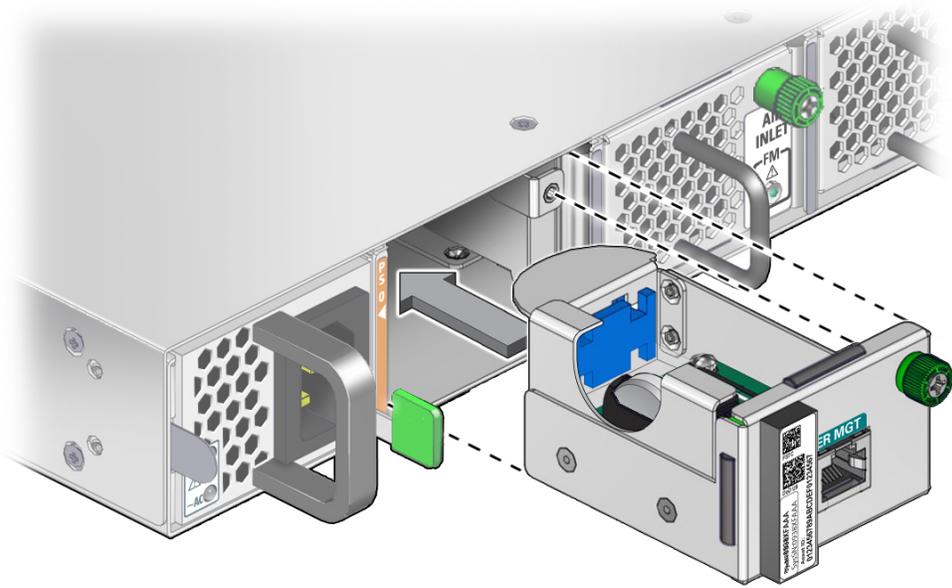


3. **Insert the edge of the battery into the holder, and then pivot it upright to the right.**



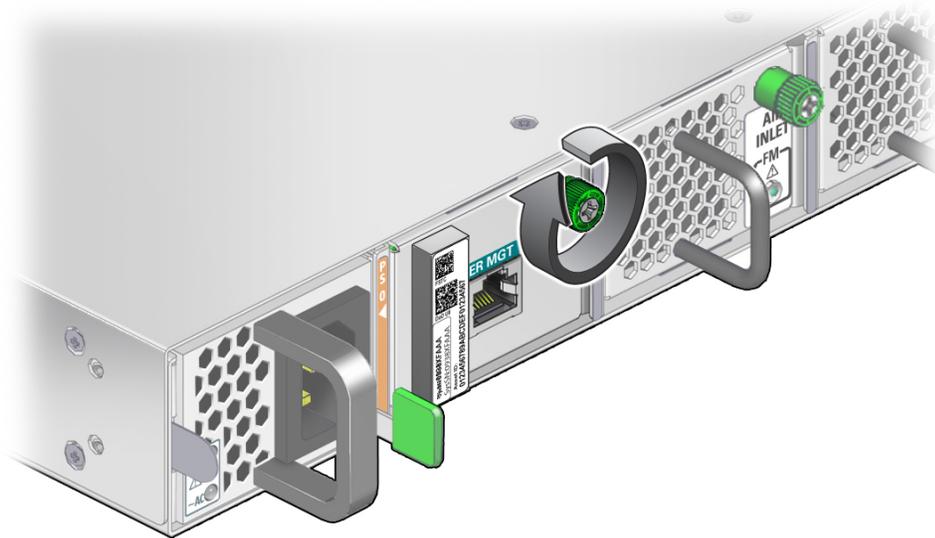
The battery clicks into place.

4. **Align the SMM to the opening in the switch chassis with the thumbscrew on the right.**



5. **Firmly slide the SMM into the chassis until the SMM stops.**

6. **Tighten the captive thumbscrew to secure the SMM in the switch chassis.**



7. **Verify the battery.**  
See [“Verify the Battery” on page 117](#).

#### Related Information

- [“Determine if the Battery Is Faulty” on page 107](#)
- [“Remove the Battery” on page 109](#)
- [“Verify the Battery” on page 117](#)

## ▼ Verify the Battery

After you install the battery, you can verify its functionality.

1. **Verify that the battery is no longer considered faulty.**  
See [“Determine if the Battery Is Faulty” on page 107](#), then return to this task.
2. **Check the battery voltage.**  
-> `show /SYS/MB/V_VBAT value`

```
/SYS/MB/V_VBAT
Properties:
  value = 3.027 Volts
->
```

The battery voltage must be greater than 2.548 volts.

### 3. If necessary, set the date and time.

```
-> set /SP/clock datetime=MMDDhhmmYYYY
```

where *MMDDhhmmYYYY* is the month, date, hour, and minute as two digits, and the year as four digits. For example, to set the date and time to January 20th, 2016, at 6:24 in the morning, type:

```
-> set /SP/clock datetime=012006242016
Set 'datetime' to '012006242016'
-> show /SP/clock datetime
/SP/clock
Properties:
  datetime = Wed Jan 20 06:24:01 2016
->
```

### 4. Consider your next task.

- **If you have a full-time SER MGT connection, connect the SER MGT cable.**  
See [“Connect the SER MGT Cable” on page 158](#).
- **If you do not have a SER MGT connection, install the air duct assembly.**  
See [“Install the Air Duct Assembly” on page 166](#).

### Related Information

- [“Determine if the Battery Is Faulty” on page 107](#)
- [“Remove the Battery” on page 109](#)
- [“Install the Battery” on page 113](#)

## Servicing Fan Modules

---

Fan modules contain two redundant fan units that are variable speed. The four fan modules are located across the front of the switch chassis. See [“Identifying Components” on page 11](#).

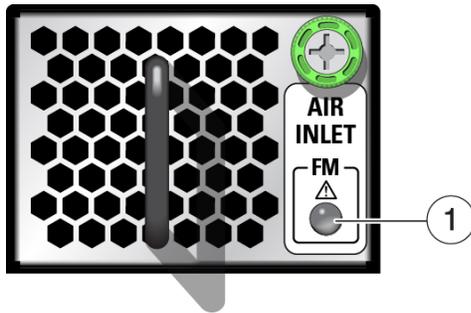
| Description                   | Links                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Replace a faulty fan module.  | <a href="#">“Locate a Faulty Fan Module” on page 120</a><br><a href="#">“Fan Module LED” on page 120</a><br><a href="#">“Remove the Air Duct Assembly” on page 68</a><br><a href="#">“Remove a Fan Module” on page 123</a><br><a href="#">“Install a Fan Module” on page 125</a><br><a href="#">“Verify a Fan Module” on page 127</a><br><a href="#">“Install the Air Duct Assembly” on page 166</a> |
| Identify a faulty fan module. | <a href="#">“Fan Module LED” on page 120</a><br><a href="#">“Locate a Faulty Fan Module” on page 120</a><br><a href="#">“Detecting and Managing Faults” on page 15</a>                                                                                                                                                                                                                               |

### Related Information

- [“Identifying Components” on page 11](#)
- [“Detecting and Managing Faults” on page 15](#)
- [“Preparing for Service” on page 63](#)
- [“Servicing Data Cables” on page 81](#)
- [“Servicing the Battery” on page 107](#)
- [“Servicing Power Supplies” on page 129](#)
- [“Replacing the Switch” on page 139](#)
- [“Returning the Switch to Operation” on page 153](#)

## Fan Module LED

The status of each fan module is represented by an amber Attention LED. The LED is located on the front, in the lower right, under the green screw. See [“Front Panel LEDs” on page 33](#). This illustration and table describe the functionality of the fan module LED. Use this information for the task [“Locate a Faulty Fan Module” on page 120](#).



| No. | Icon                                                                                | Name                             | Color | State and Meaning                                                                                                                                       |
|-----|-------------------------------------------------------------------------------------|----------------------------------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   |  | Attention<br>Service<br>Required | Amber | Indicates these conditions: <ul style="list-style-type: none"> <li>■ <b>On</b> – Fault detected.</li> <li>■ <b>Off</b> – No faults detected.</li> </ul> |

### Related Information

- [“Locate a Faulty Fan Module” on page 120](#)
- [“Remove a Fan Module” on page 123](#)
- [“Install a Fan Module” on page 125](#)
- [“Verify a Fan Module” on page 127](#)

## ▼ Locate a Faulty Fan Module

You must determine which fan module is faulty before you replace it.

1. **Consider your first step.**
  - **If you are at the switch, go to [Step 2](#).**

- If you are remote to the switch, go to [Step 4](#).
2. **Check to see if the Service Action Required LED is on.**  
See [“Chassis Status LEDs”](#) on page 35.
  3. **Visually inspect the fan module Attention LEDs to see if any are on.**  
See [“Fan Module LED”](#) on page 120.

---

**Note** - If an LED is on, you can see it through the air duct assembly.

---

- If a fan module is faulty, replace it.  
Start at [“Remove the Air Duct Assembly”](#) on page 68.
  - If you cannot determine if a fan module is faulty, go to [Step 4](#).
4. **Access the Oracle ILOM CLI.**  
See [“Accessing the SP”](#) on page 37.
  5. **Determine if a fan module has become problematic.**

```
-> show /System/Open_Problems
Open Problems (1)
Date/Time          Subsystems          Component
-----
Thu Dec 17 05:18:44 2015 System              FMx (Fan Module)
  fault.chassis.device.fan.fail (Probability:100, UUID:0ebf1655-8700-c90e-fa53-ea6c3b2b25a0, Resource:/
SYS/FMx, Part
  Number:N/A, Serial Number:N/A, Reference Document:http://support.oracle.com/msg/---)
->
```

where x is 0 to 3.

- If you see the word `fan` and Oracle ILOM target `/SYS/FMx` in the output, then replace that fan module.  
Start at [“Remove the Air Duct Assembly”](#) on page 68.
  - If you see a different component identified in the output, then service that component.  
See [“Open Problem Faults”](#) on page 48 and [“Oracle ILOM Legacy Target Replaceable Components”](#) on page 28.
6. **Display the health status of the cooling system.**

```
-> show /System/Cooling -t health
```

```

Target                | Property | Value
-----+-----+-----
/System/Cooling       | health  | OK
/System/Cooling/Fans/Fan_0 | health  | Service Required
/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
->

```

If any fan's health has a value other than OK, replace that fan module. See [“Oracle ILOM /System Target Replaceable Components” on page 27](#) to determine which fan module to replace. Then, start at [“Remove the Air Duct Assembly” on page 68](#).

**7. Within the Oracle ILOM interface, display the fault state of the fan modules.**

```

-> show /SYS -t fault_state
Target                | Property | Value
-----+-----+-----
/SYS                  | fault_state | OK
/SYS/FM0              | fault_state | Faulted
/SYS/FM0/FAN0         | fault_state | Faulted
/SYS/FM0/FAN1         | fault_state | OK
/SYS/FM1              | fault_state | OK
/SYS/FM1/FAN0         | fault_state | OK
/SYS/FM1/FAN1         | fault_state | OK
/SYS/FM2              | fault_state | OK
/SYS/FM2/FAN0         | fault_state | OK
/SYS/FM2/FAN1         | fault_state | OK
/SYS/FM3              | fault_state | OK
/SYS/FM3/FAN0         | fault_state | OK
/SYS/FM3/FAN1         | fault_state | OK
.
.
.
->

```

In the output, look for the rows beginning with /SYS/FM.

If a fan module's fault states are anything other than OK, replace the fan module. Start at [“Remove the Air Duct Assembly” on page 68](#).

**8. If you are unable to determine if a fan module is faulty, seek further information.**

See [“Detecting and Managing Faults” on page 15](#).

### Related Information

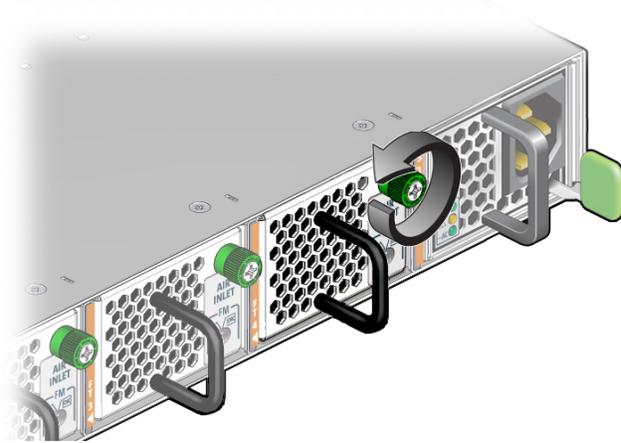
- [“Fan Module LED” on page 120](#)
- [“Remove a Fan Module” on page 123](#)
- [“Install a Fan Module” on page 125](#)
- [“Verify a Fan Module” on page 127](#)

## ▼ Remove a Fan Module

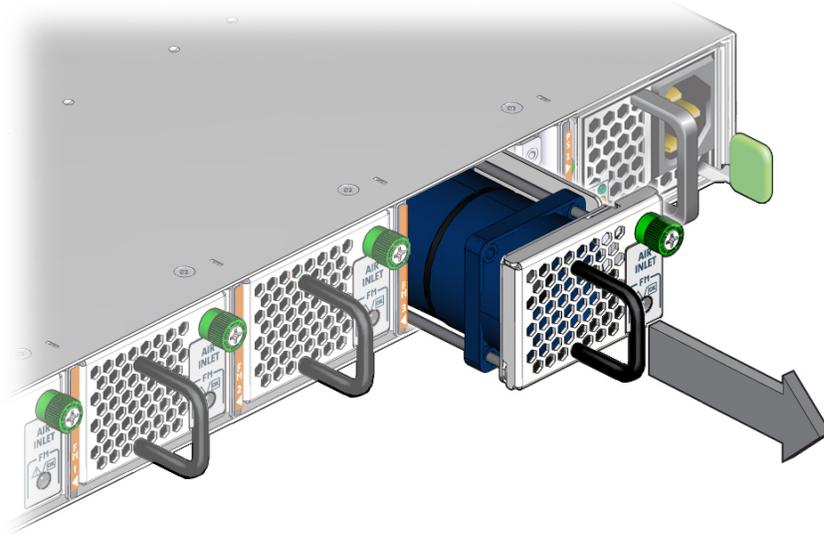
Removing a fan module is a hot-swap operation. You do not need to power off the switch before you remove the fan module.

1. **Determine which fan module to remove.**  
See [“Locate a Faulty Fan Module” on page 120](#).
2. **Consider your next step.**
  - **If you have not prepared for service, you must do so now.**  
See [“Preparing for Service” on page 63](#).
  - **If you have completed those prerequisite tasks, go to [Step 3](#).**
3. **If you have not already done so, remove the air duct assembly and SER MGT cable (if connected).**  
See [“Remove the Air Duct Assembly” on page 68](#).

4. Loosen the captive thumbscrew at the right side of the fan module.



5. Grasp the handle and pull the fan module straight out.



6. Set the fan module aside.
7. Install a new fan module.

See [“Install a Fan Module”](#) on page 125.

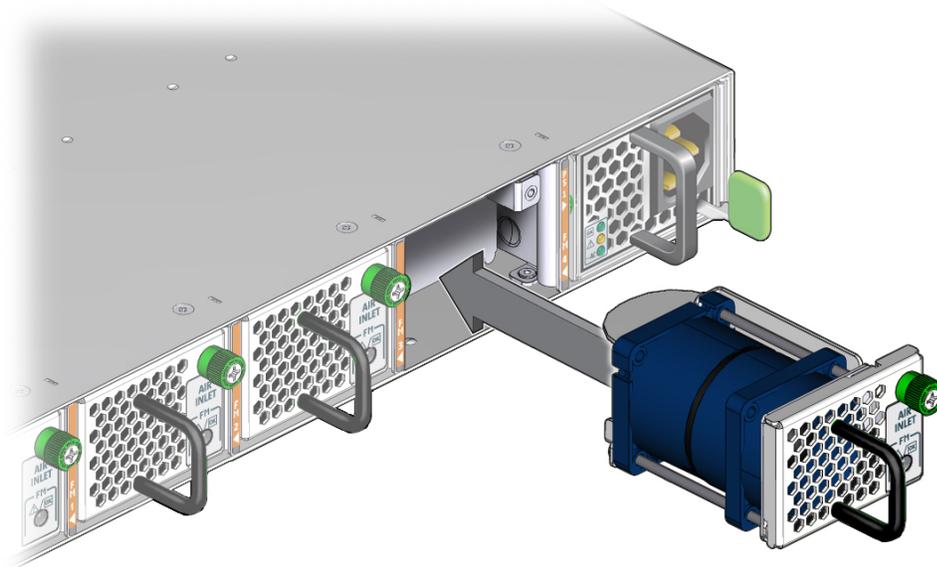
### Related Information

- [“Fan Module LED”](#) on page 120
- [“Locate a Faulty Fan Module”](#) on page 120
- [“Install a Fan Module”](#) on page 125
- [“Verify a Fan Module”](#) on page 127

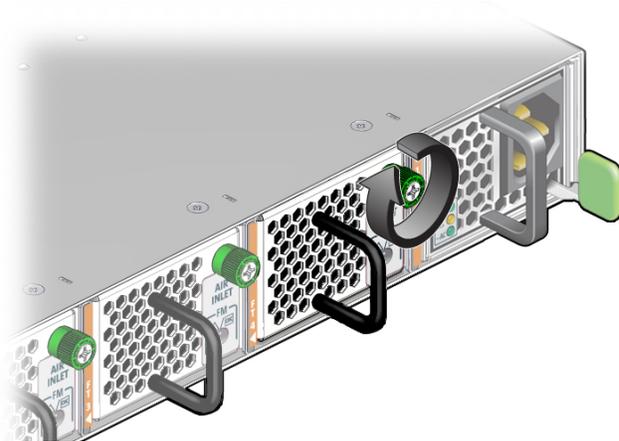
## ▼ Install a Fan Module

Installing a fan module is a hot-swap operation. You do not need to power off the switch before installing the fan module.

1. **If you are replacing a fan module, remove the faulty or obsolete fan module first, then return to [Step 2](#) of this task.**  
See [“Remove a Fan Module”](#) on page 123.
2. **Align the fan module to the opening in the switch chassis with the thumbscrew on the right.**



3. **Firmly slide the fan module into the chassis until the fan module stops.**  
The fan module immediately powers on.
4. **Tighten the captive thumbscrew to secure the fan module in the switch chassis.**



5. **Verify that the fan module Attention LED goes out.**
  - If the Attention LED stays on, see [“Verify a Fan Module” on page 127](#).
  - If the Attention LED goes out, go to [Step 6](#).
6. **Consider your next task.**
  - If you have a full-time SER MGT connection, connect the SER MGT cable.  
See [“Connect the SER MGT Cable” on page 158](#).
  - If you do not have a SER MGT connection, install the air duct assembly.  
See [“Install the Air Duct Assembly” on page 166](#).

### Related Information

- [“Fan Module LED” on page 120](#)
- [“Locate a Faulty Fan Module” on page 120](#)
- [“Remove a Fan Module” on page 123](#)
- [“Verify a Fan Module” on page 127](#)

## ▼ Verify a Fan Module

After you install a fan module, you can verify its functionality.

### 1. From the Oracle ILOM CLI, reset the fan module.

```
-> set /SYS/FMx clear_fault_action=true
```

where  $x$  is 0 to 3. For example, to reset fan module FM1, type:

```
-> set /SYS/FM1 clear_fault_action=true
Are you sure you want to clear /SYS/FM1 (y/n)? y
Set 'clear_fault_action' to 'true'
```

```
->
```

### 2. Verify that the fan module is no longer considered faulty.

See [“Locate a Faulty Fan Module” on page 120](#), then return to this task.

### 3. Check the fan speed.

```
-> show /SYS/FMx/FANy/TACH value
```

where  $x$  is 0 to 3 and  $y$  is 0 or 1. For example, to check the fan speed of FAN1 inside of fan module FM1, type:

```
-> show /SYS/FM1/FAN1/TACH value
/SYS/FM1/FAN1/TACH
Properties:
  value = 21040 rpm
->
```

Fan speeds should be between 6000 and 24000 RPM.

### 4. Consider your next task.

- **If you have a full-time SER MGT connection, connect the SER MGT cable.**  
See [“Connect the SER MGT Cable” on page 158](#)
- **If you do not have a SER MGT connection, install the air duct assembly.**  
See [“Install the Air Duct Assembly” on page 166](#).

### Related Information

- [“Fan Module LED” on page 120](#)
- [“Locate a Faulty Fan Module” on page 120](#)

- [“Remove a Fan Module” on page 123](#)
- [“Install a Fan Module” on page 125](#)

## Servicing Power Supplies

---

Power supplies provide the 12 VDC necessary to power the switch. The power supplies are located at the left and right sides of the front panel. See [“Identifying Components” on page 11](#).

| Description                     | Links                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Replace a faulty power supply.  | <a href="#">“Locate a Faulty Power Supply” on page 131</a><br><a href="#">“Power Supply LEDs” on page 130</a><br><a href="#">“Remove the Air Duct Assembly” on page 68</a><br><a href="#">“Remove a Snap Bracket” on page 72</a><br><a href="#">“Power Off a Power Supply” on page 76</a><br><a href="#">“Remove a Power Supply” on page 133</a><br><a href="#">“Install a Power Supply” on page 135</a><br><a href="#">“Retrieve the Power Cords and SER MGT Cable” on page 154</a><br><a href="#">“Power On a Power Supply” on page 157</a><br><a href="#">“Verify a Power Supply” on page 137</a><br><a href="#">“Install a Snap Bracket” on page 164</a><br><a href="#">“Install the Air Duct Assembly” on page 166</a> |
| Identify a faulty power supply. | <a href="#">“Power Supply LEDs” on page 130</a><br><a href="#">“Locate a Faulty Power Supply” on page 131</a><br><a href="#">“Detecting and Managing Faults” on page 15</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

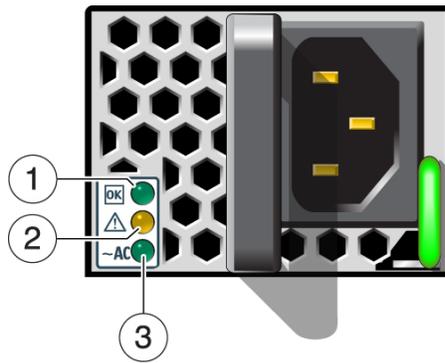
### Related Information

- [“Identifying Components” on page 11](#)
- [“Detecting and Managing Faults” on page 15](#)
- [“Preparing for Service” on page 63](#)
- [“Servicing Data Cables” on page 81](#)
- [“Servicing the Battery” on page 107](#)
- [“Servicing Fan Modules” on page 119](#)

- [“Replacing the Switch” on page 139](#)
- [“Returning the Switch to Operation” on page 153](#)

## Power Supply LEDs

The status of each power supply is represented by the same three LEDs. The LEDs are located at the front, in the lower left corner. See [“Front Panel LEDs” on page 33](#). This illustration and table describe the functionality of the power supply LEDs. Use this information for the task [“Locate a Faulty Power Supply” on page 131](#).



| No. | Icon | Location | Name                             | Color | State and Meaning                                                                                                                                                                                                               |
|-----|------|----------|----------------------------------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   |      | Top      | OK                               | Green | Indicates these conditions: <ul style="list-style-type: none"> <li>■ <b>On</b> – Power supply is functional without fault.</li> <li>■ <b>Off</b> – Power supply is off or initializing, or there is no output power.</li> </ul> |
| 2   |      | Middle   | Attention<br>Service<br>Required | Amber | Indicates these conditions: <ul style="list-style-type: none"> <li>■ <b>On</b> – Fault detected.</li> <li>■ <b>Off</b> – No faults detected.</li> </ul>                                                                         |
| 3   |      | Bottom   | AC                               | Green | Indicates these conditions: <ul style="list-style-type: none"> <li>■ <b>On</b> – Input power present and good.</li> <li>■ <b>Off</b> – Input power not present.</li> </ul>                                                      |

### Related Information

- [“Locate a Faulty Power Supply” on page 131](#)
- [“Remove a Power Supply” on page 133](#)

- [“Install a Power Supply” on page 135](#)
- [“Verify a Power Supply” on page 137](#)

## ▼ Locate a Faulty Power Supply

You must determine which power supply is faulty before you replace it.

1. **Consider your first step.**
  - If you are at the switch, go to [Step 2](#).
  - If you are remote to the switch, go to [Step 4](#).
2. **Check to see if the Service Action Required LED is on.**  
See [“Chassis Status LEDs” on page 35](#).
3. **Visually inspect the power supply LEDs to see which LEDs are on.**  
See [“Power Supply LEDs” on page 130](#).

---

**Note** - If an LED is on, you can see it through the air duct assembly.

---

- **If a power supply is faulty, replace it.**  
Start at [“Remove the Air Duct Assembly” on page 68](#).
  - **If you cannot determine if a power supply is faulty, go to [Step 4](#).**
4. **Access the Oracle ILOM CLI.**  
See [“Accessing the SP” on page 37](#).
  5. **Determine if a power supply has become problematic.**

```
-> show /System/Open_Problems
Open Problems (1)
Date/Time           Subsystems           Component
-----
Thu Dec 17 05:17:11 2015  Power                PSx (Power Supply 1)
  fault.chassis.device.psu.fail (Probability:100, UUID:b516a939-23c2-ee8b-e997-d915ca03d044, Resource:/
  SYS/PSx, Part
  Number:7065505-01, Serial Number:C92517, Reference Document:http://support.oracle.com/msg/---)
->
```

where x is 0 or 1.

- **If you see psu and Oracle ILOM target /SYS/PSx in the output, then replace that power supply.**

Start at [“Remove the Air Duct Assembly” on page 68.](#)

- **If you see a different component identified in the output, then service that component.**

See [“Open Problem Faults” on page 48](#) and [“Oracle ILOM Legacy Target Replaceable Components” on page 28.](#)

**6. Display the health status of the power system.**

```
-> show /System/power -t health
Target                                     | Property | Value
-----+-----+-----
/System/Power                             | health   | OK
/System/Power/Power_Supplies/Power_Supply_0 | health   | OK
/System/Power/Power_Supplies/Power_Supply_1 | health   | Service Required
->
```

If any power supply's health has a value other than OK, replace that power supply. Start at [“Remove the Air Duct Assembly” on page 68.](#)

**7. Within the Oracle ILOM interface, display the fault state of the power supplies.**

```
-> show /SYS -t fault_state
Target          | Property      | Value
-----+-----+-----
/SYS            | fault_state   | OK
.
.
.
/SYS/PS0       | fault_state   | OK
/SYS/PS1       | fault_state   | Faulted
/SYS/SP        | fault_state   | OK
->
```

In the output, look for the rows beginning with /SYS/PS.

If any power supply's fault state has a value other than ok, replace that power supply. Start at [“Remove the Air Duct Assembly” on page 68.](#)

**8. If you are unable to determine if a power supply is faulty, seek further information.**

See [“Detecting and Managing Faults” on page 15.](#)

### Related Information

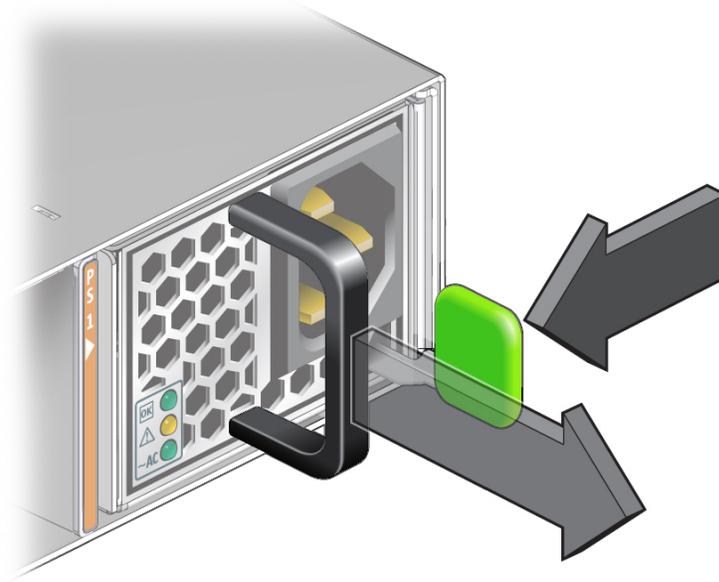
- [“Power Supply LEDs” on page 130](#)
- [“Remove a Power Supply” on page 133](#)
- [“Install a Power Supply” on page 135](#)
- [“Verify a Power Supply” on page 137](#)

## ▼ Remove a Power Supply

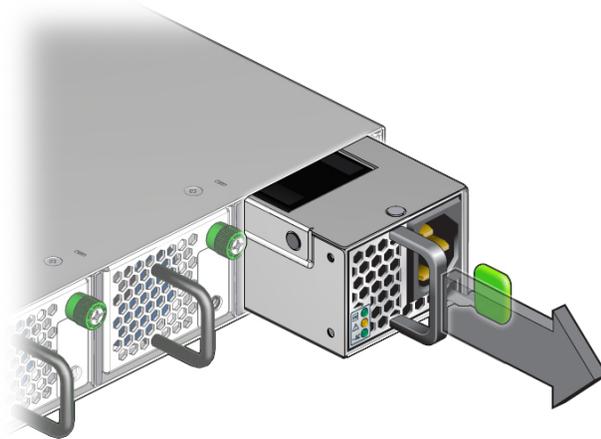
Removing a power supply is a hot-swap operation. You do not need to power off the switch before you remove the power supply.

1. **Determine which power supply to remove.**  
See [“Locate a Faulty Power Supply” on page 131](#).
2. **Consider your next step.**
  - **If you have not prepared for service, you must do so now.**  
See [“Preparing for Service” on page 63](#).
  - **If you have completed those prerequisite tasks, go to [Step 6](#).**
3. **If you have not already done so, remove the air duct assembly and SER MGT cable (if connected).**  
See [“Remove the Air Duct Assembly” on page 68](#).
4. **If you have not already done so, remove the snap bracket.**  
See [“Remove a Snap Bracket” on page 72](#).
5. **If you have not already done so, power off the power supply.**  
See [“Power Off a Power Supply” on page 76](#).

6. Press and hold the release tab to the left, and pull on the handle of the power supply.



7. Continue to pull the handle of the power supply to remove it from the chassis.



8. Set the power supply aside.
9. Install a new power supply.  
See [“Install a Power Supply” on page 135](#).

#### Related Information

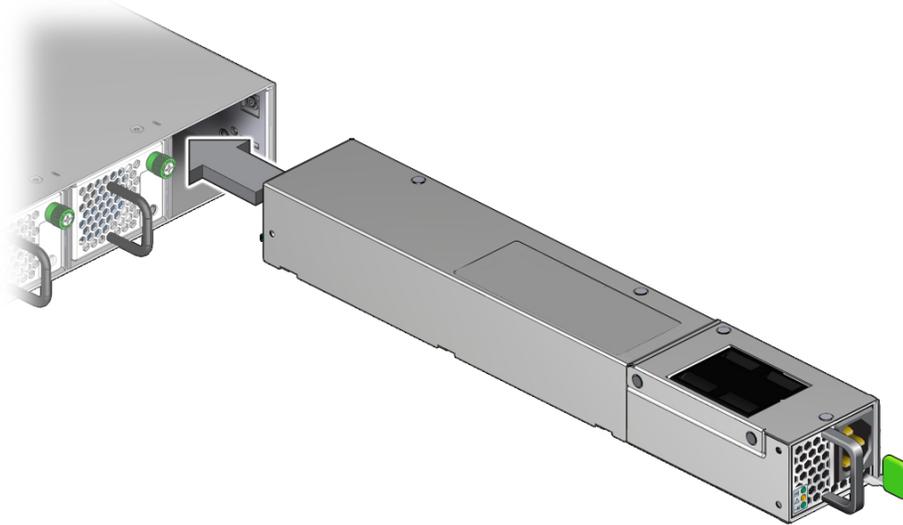
- [“Power Supply LEDs” on page 130](#)
- [“Locate a Faulty Power Supply” on page 131](#)
- [“Install a Power Supply” on page 135](#)
- [“Verify a Power Supply” on page 137](#)

## ▼ Install a Power Supply

Installing a power supply is a hot-swap operation. You do not need to power off the switch before installing the power supply.

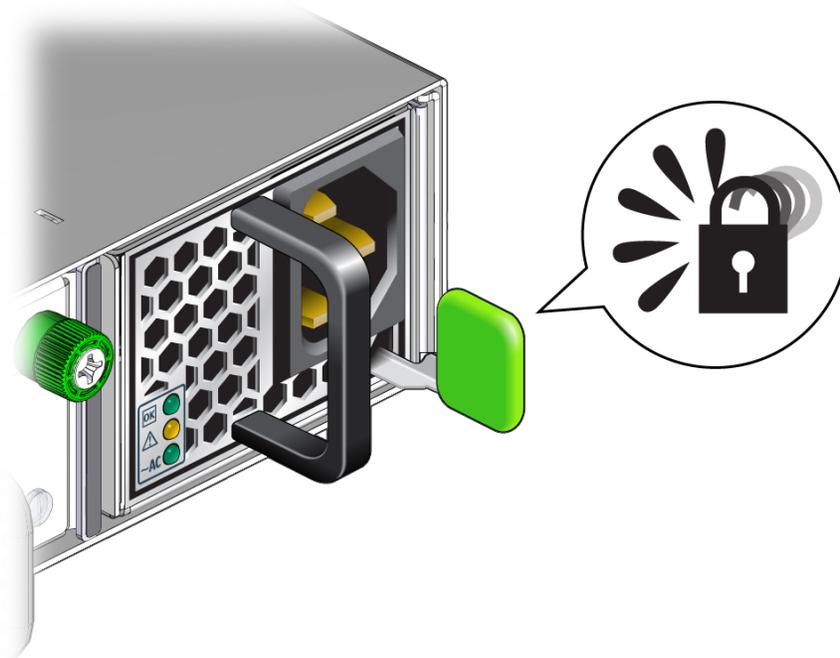
1. If you are replacing a power supply, remove the faulty or obsolete power supply first, then return to [Step 2](#) of this task.  
See [“Remove a Power Supply” on page 133](#).

2. **Align the power supply to the opening in the switch chassis with the status LEDs on the left and the release tab on the right.**



3. **Slide the power supply into the open slot, pushing at the handle.**

4. **When the power supply seats, push firmly so that the release tab clicks to secure the power supply into the chassis.**



5. **Power on the power supply.**  
To power on the power supply, you must first retrieve the power cord, and if there is a full-time SER MGT connection, the SER MGT cable. See [“Retrieve the Power Cords and SER MGT Cable”](#) on page 154.

#### Related Information

- [“Power Supply LEDs”](#) on page 130
- [“Locate a Faulty Power Supply”](#) on page 131
- [“Remove a Power Supply”](#) on page 133
- [“Verify a Power Supply”](#) on page 137

## ▼ Verify a Power Supply

After you install a power supply, you can verify its functionality.

1. **From the Oracle ILOM CLI, reset the power supply.**

```
-> set /SYS/PSx clear_fault_action=true
```

where  $x$  is 0 or 1. For example, to reset power supply PS0, type:

```
-> set /SYS/PS0 clear_fault_action=true
Are you sure you want to clear /SYS/PS0 (y/n)? y
Set 'clear_fault_action' to 'true'
```

```
->
```

**2. Verify that the power supply is no longer considered faulty.**

See [“Locate a Faulty Power Supply” on page 131](#), then return to this task.

**3. Check the output voltage.**

```
-> show /SYS/PSx/V_OUT value
```

where  $x$  is 0 or 1. For example, to check the output voltage of power supply PS0, type:

```
-> show /SYS/PS0/V_OUT value
/SYS/PS0/V_OUT
Properties:
  value = 11.875 Volts
->
```

Voltage output should be between 10 and 14 volts.

**4. Continue the power on process.**

Return to [“Power On a Power Supply” on page 157](#).

### Related Information

- [“Power Supply LEDs” on page 130](#)
- [“Locate a Faulty Power Supply” on page 131](#)
- [“Remove a Power Supply” on page 133](#)
- [“Install a Power Supply” on page 135](#)

# Replacing the Switch

---

These topics describe how to replace the entire switch.

| Description                        | Links                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Replace the faulty switch.         | <a href="#">“Determine if the Switch Is Faulty” on page 141</a><br><a href="#">“Switch LEDs” on page 140</a><br><a href="#">“Remove the Air Duct Assembly” on page 68</a><br><a href="#">“Remove a Snap Bracket” on page 72</a><br><a href="#">“Prepare to Power Off the Switch” on page 75</a><br><a href="#">“Power Off a Power Supply” on page 76</a><br><a href="#">“Remove a Data Cable” on page 89</a><br><a href="#">“Remove the Switch” on page 143</a><br><a href="#">“Install the Switch” on page 145</a><br><a href="#">“Power On a Power Supply” on page 157</a><br><a href="#">“Configure the Replacement Switch” on page 161</a><br><a href="#">“Install a Data Cable” on page 98</a><br><a href="#">“Install a Snap Bracket” on page 164</a><br><a href="#">“Install the Air Duct Assembly” on page 166</a><br><a href="#">“Verify the Switch” on page 148</a> |
| Determine if the switch is faulty. | <a href="#">“Switch LEDs” on page 140</a><br><a href="#">“Determine if the Switch Is Faulty” on page 141</a><br><a href="#">“Detecting and Managing Faults” on page 15</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

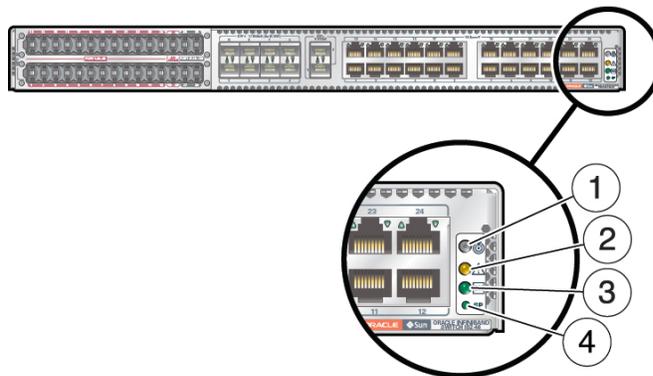
## Related Information

- [“Identifying Components” on page 11](#)
- [“Detecting and Managing Faults” on page 15](#)
- [“Preparing for Service” on page 63](#)

- “Servicing Data Cables” on page 81
- “Servicing the Battery” on page 107
- “Servicing Fan Modules” on page 119
- “Servicing Power Supplies” on page 129
- “Returning the Switch to Operation” on page 153

## Switch LEDs

The status of the switch is represented by four LEDs. The LEDs are located on the rear right side of the switch. See “Chassis Status LEDs” on page 35. This illustration and table describe the functionality of the switch LEDs. Use this information for the task “Determine if the Switch Is Faulty” on page 141.



| No. | Icon | Location | Name                          | Color | State and Meaning                                                                                                                                                                      |
|-----|------|----------|-------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   |      | Top      | Locate                        | White | Indicates these conditions: <ul style="list-style-type: none"> <li>■ <b>Fast blinking</b> – The switch is identifying itself.</li> <li>■ <b>Off</b> – Disabled.</li> </ul>             |
| 2   |      | Middle   | Attention<br>Service Required | Amber | Indicates these conditions: <ul style="list-style-type: none"> <li>■ <b>On</b> – Fault detected.</li> <li>■ <b>Off</b> – No faults detected.</li> </ul>                                |
| 3   |      | Middle   | OK                            | Green | Indicates these conditions: <ul style="list-style-type: none"> <li>■ <b>On</b> – Switch is functional without fault.</li> <li>■ <b>Off</b> – Switch is off or initializing.</li> </ul> |
| 4   |      | Bottom   | SP                            | Green | Indicates these conditions: <ul style="list-style-type: none"> <li>■ <b>On</b> – SP is ready.</li> </ul>                                                                               |

| No. | Icon | Location | Name | Color | State and Meaning                                                                                                                                            |
|-----|------|----------|------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |      |          |      |       | <ul style="list-style-type: none"> <li>■ <b>Slow blinking</b> – SP is booting up.</li> <li>■ <b>Off</b> – SP powered off, resetting, or at fault.</li> </ul> |

### Related Information

- [“Determine if the Switch Is Faulty” on page 141](#)
- [“Remove the Switch” on page 143](#)
- [“Install the Switch” on page 145](#)
- [“Verify the Switch” on page 148](#)

## ▼ Determine if the Switch Is Faulty

You must determine if the switch is faulty before you replace it.

1. **Consider your first step.**
  - If you are at the switch, go to [Step 2](#).
  - If you are remote to the switch, go to [Step 3](#).
2. **Check to see if the Service Action Required LED is on.**  
See [“Chassis Status LEDs” on page 35](#).
  - **If the SP LED is off, replace the switch.**  
Start at [“Remove the Air Duct Assembly” on page 68](#).
  - **If you cannot determine if the switch is faulty, go to [Step 3](#).**
3. **Access the Oracle ILOM CLI.**  
See [“Accessing the SP” on page 37](#).
4. **Determine if the switch has become problematic.**  
-> `show /System/Open_Problems`

The output of the command might be:

```
Open Problems (1)
Date/Time           Subsystems           Component
-----
Thu Dec 17 05:11:35 2015 System              MB (Motherboard)
```

```

fault.chassis.env.temp.over-fail (Probability:100, UUID:4c4bdfa1-f7d5-c7a7-e59e-f9a8ce4fab21, Resource:/
SYS/MB, Part
Number:7092577, Serial Number:AK00329231, Reference Document:http://support.oracle.com/msg/---)
->

```

Or

Open Problems (1)

| Date/Time                                                                                                                                                                                                                                                       | Subsystems | Component              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------------------|
| Thu Dec 17 05:13:26 2015                                                                                                                                                                                                                                        | System     | SP (Service Processor) |
| fault.chassis.voltage.fail (Probability:100, UUID:0a408985-6011-ccd7-c3a1-e01c7254ea87, Resource:/SYS/                     SP, Part                     Number:7096151, Serial Number:489089M+15306P00M0, Reference Document:http://support.oracle.com/msg/---) |            |                        |

->

- **If you see the words temp and fail, or voltage and fail, and either Oracle ILOM targets /SYS/MB or /SYS/SP in the output, then replace the switch.**  
Start at [“Remove the Air Duct Assembly” on page 68.](#)
- **If you see a different component identified in the output, then service that component.**  
See [“Open Problem Faults” on page 48](#) and [“Oracle ILOM Legacy Target Replaceable Components” on page 28.](#)

**5. Within the Oracle ILOM interface, display the fault state of main board components.**

```

-> show /SYS -t fault_state
Target          | Property          | Value
-----+-----+-----
/SYS            | fault_state      | OK
.
.
/SYS/MB        | fault_state      | Faulted
.
/SYS/SP        | fault_state      | OK
->

```

In the output, look for the rows beginning with /SYS, /SYS/MB, and /SYS/SP.

If their fault states are anything other than OK, replace the switch. Start at [“Remove the Air Duct Assembly” on page 68.](#)

**6. If you are unable to determine if the switch is faulty, seek further information.**

See [“Detecting and Managing Faults” on page 15.](#)

### Related Information

- [“Switch LEDs” on page 140](#)
- [“Remove the Switch” on page 143](#)
- [“Install the Switch” on page 145](#)
- [“Verify the Switch” on page 148](#)

## ▼ Remove the Switch

Removing the switch is a cold-service operation. You must power off the switch before you remove it.

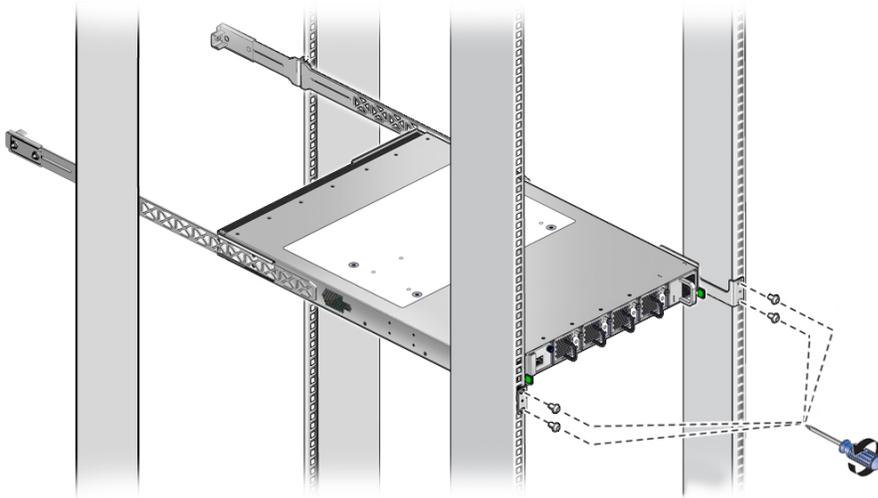
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**Note** - Because of the weight and mounting of the switch, two people are required for switch removal.

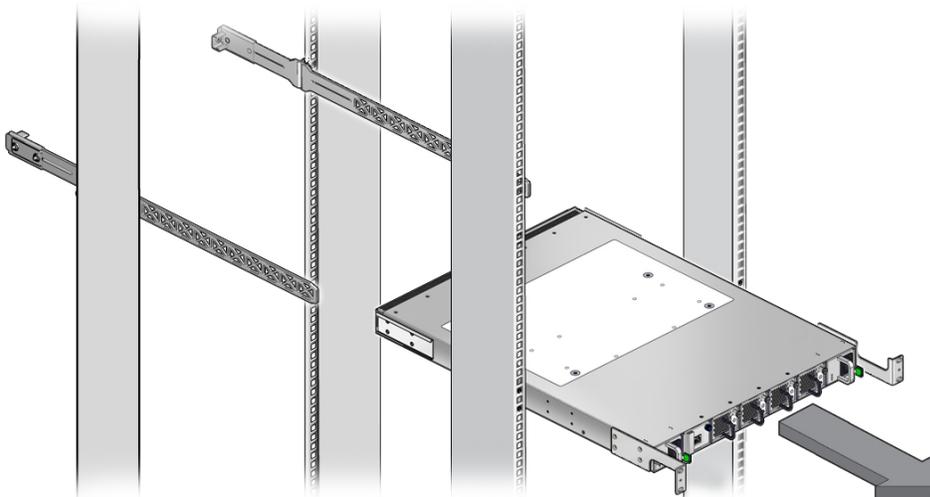
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1. **Consider your first step.**
  - **If you have not prepared for service, you must do so now.**  
See [“Preparing for Service” on page 63](#).
  - **If you have completed those prerequisite tasks, go to [Step 2](#).**
2. **Remove the air duct assembly and SER MGT cable (if connected).**  
See [“Remove the Air Duct Assembly” on page 68](#).
3. **Remove both snap brackets.**  
See [“Remove a Snap Bracket” on page 72](#).
4. **Power off both power supplies.**  
See [“Power Off a Power Supply” on page 76](#).
5. **Remove all data cables.**  
See [“Remove a Data Cable” on page 89](#).

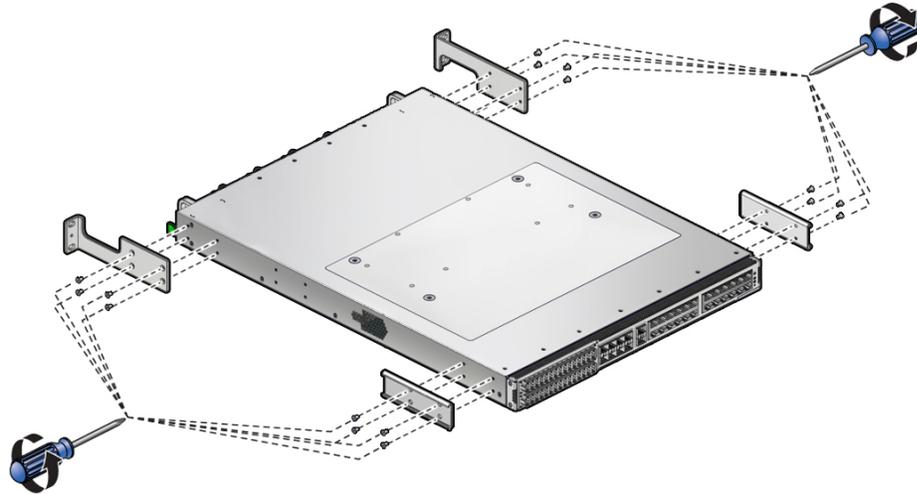
6. **While supporting the weight of the switch, use a No. 2 Phillips screwdriver to remove the four screws from the long brackets.**



7. **Gently slide the switch out of the rack.**  
Ensure that the switch does not bind on the long rails as it slides.



8. Set the switch down onto a stable work surface.
9. Use a No. 1 Phillips screwdriver to remove the eight screws that secure the C-shaped brackets at the rear sides of the switch chassis.



10. Remove the eight screws that secure the long front mounting brackets at the front sides of the switch chassis.
11. Install the replacement switch.  
See [“Install the Switch” on page 145](#).

#### Related Information

- [“Switch LEDs” on page 140](#)
- [“Determine if the Switch Is Faulty” on page 141](#)
- [“Install the Switch” on page 145](#)
- [“Verify the Switch” on page 148](#)

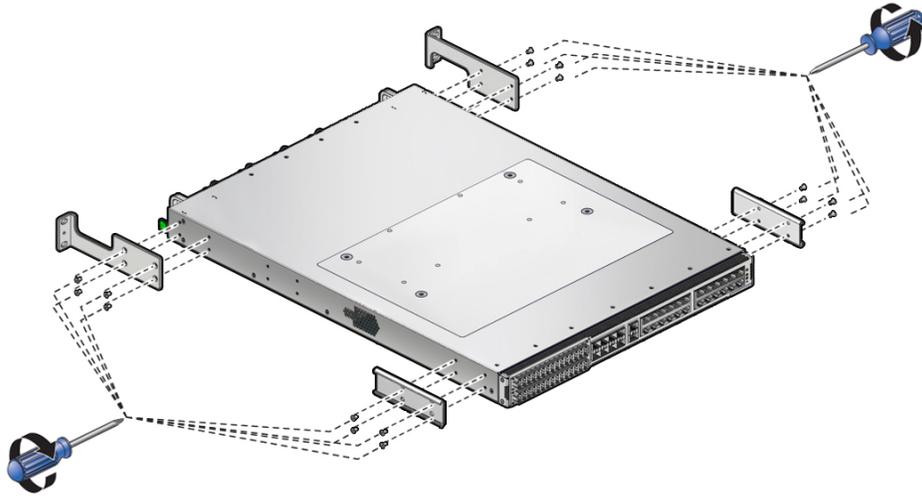
## ▼ Install the Switch

---

**Note** - Because of the weight and mounting of the switch, two people are required for switch installation.

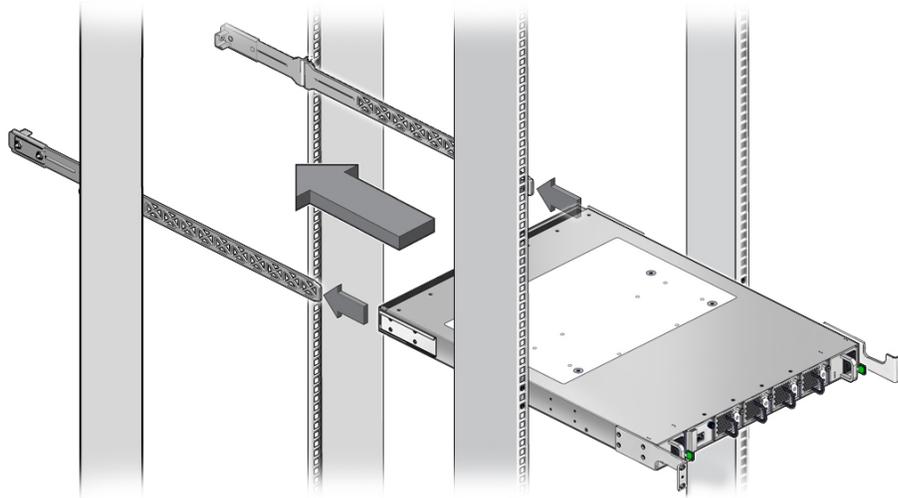
---

1. If you are replacing the switch, remove the faulty or obsolete switch first, then return to [Step 2](#) of this task.  
See [“Remove the Switch”](#) on page 143.
2. Use a No. 1 Phillips screwdriver to install the eight screws that secure the two long front mounting brackets to the front sides of the chassis.

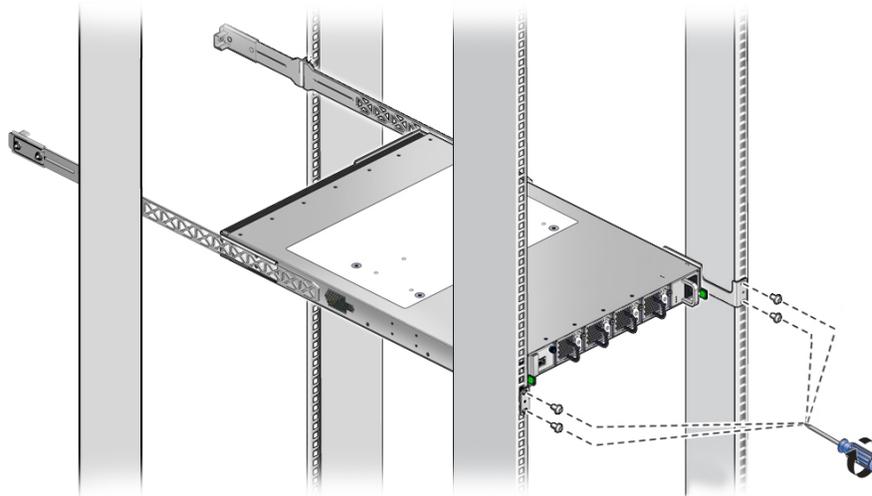


3. Use the eight screws to attach the two C-shaped brackets to the rear sides of the chassis.
4. Carefully lift the switch and slide it into the rack, from the front rearward.

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



5. Use a No. 2 Phillips screwdriver to mount the front of the switch chassis to the front rack posts with two screws at each side.



---

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

---

**6. Return the switch to operation.**

Perform the tasks as directed in [“Returning the Switch to Operation”](#) on page 153, the first of which is to retrieve the power cords. See [“Retrieve the Power Cords and SER MGT Cable”](#) on page 154.

**Related Information**

- [“Switch LEDs”](#) on page 140
- [“Determine if the Switch Is Faulty”](#) on page 141
- [“Remove the Switch”](#) on page 143
- [“Verify the Switch”](#) on page 148

## ▼ Verify the Switch

After you install the switch, you can verify its functionality.

1. **Verify that the switch is no longer considered faulty, then return to this task.**  
See [“Determine if the Switch Is Faulty”](#) on page 141.
2. **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.**

See [“Detecting and Managing Faults” on page 15](#).

- 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.
->

```

### 3. Verify IB and gateway connectivity.

- a. **Start the host.**

```

-> 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 OFOS is accessed, the OFOS configuration wizard might start. If this happens, refer to *Oracle InfiniBand Switch IS2-46 Installation Guide*, running the OFOS configuration wizard.

**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.**

See [“Detecting and Managing Faults” on page 15](#).

- 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.
->
```

## Related Information

- [“Switch LEDs” on page 140](#)
- [“Determine if the Switch Is Faulty” on page 141](#)
- [“Remove the Switch” on page 143](#)
- [“Install the Switch” on page 145](#)



# Returning the Switch to Operation

---

These topics explain how to return the switch to operation after you perform service tasks.

| Step | Description                                                                                                                                                                                                                | Link                                                                                                                                                                                                                                                                 |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.   | Retrieve the power cord and if necessary, the SER MGT cable. Then, power on the power supply if you serviced these components: <ul style="list-style-type: none"><li>■ Power supply</li><li>■ Switch replacement</li></ul> | <a href="#">“Retrieve the Power Cords and SER MGT Cable” on page 154</a><br><a href="#">“Power On a Power Supply” on page 157</a>                                                                                                                                    |
| 2.   | Configure the switch and connect the data cables if you serviced this component: <ul style="list-style-type: none"><li>■ Switch replacement</li></ul>                                                                      | <a href="#">“Configure the Replacement Switch” on page 161</a><br><a href="#">“Install a Data Cable” on page 98</a>                                                                                                                                                  |
| 3.   | Install the snap bracket.                                                                                                                                                                                                  | <a href="#">“Install a Snap Bracket” on page 164</a>                                                                                                                                                                                                                 |
| 4.   | Install the air duct assembly if you serviced the components in Step 1 or these components: <ul style="list-style-type: none"><li>■ Battery</li><li>■ Fan module</li></ul>                                                 | <a href="#">“Install the Air Duct Assembly” on page 166</a>                                                                                                                                                                                                          |
| 5.   | Verify the installation of the component, if you serviced the components in Step 1, Step 2, or Step 4.                                                                                                                     | <a href="#">“Verify a Power Supply” on page 137</a><br><a href="#">“Verify a Data Cable” on page 104</a><br><a href="#">“Verify the Switch” on page 148</a><br><a href="#">“Verify the Battery” on page 117</a><br><a href="#">“Verify a Fan Module” on page 127</a> |

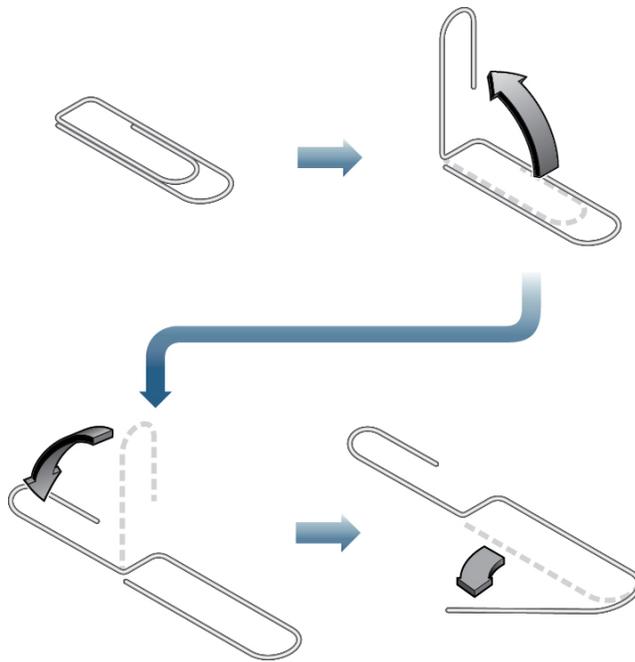
## Related Information

- [“Identifying Components” on page 11](#)
- [“Detecting and Managing Faults” on page 15](#)
- [“Preparing for Service” on page 63](#)
- [“Servicing Data Cables” on page 81](#)
- [“Servicing the Battery” on page 107](#)
- [“Servicing Fan Modules” on page 119](#)

- “Servicing Power Supplies” on page 129
- “Replacing the Switch” on page 139

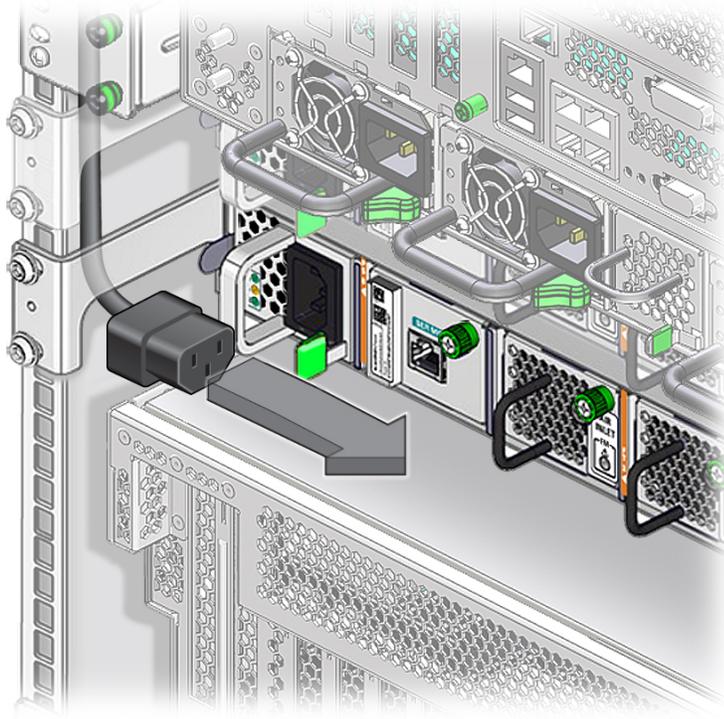
## ▼ Retrieve the Power Cords and SER MGT Cable

1. Take a paper clip and separate the smaller loop away from the larger loop.



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

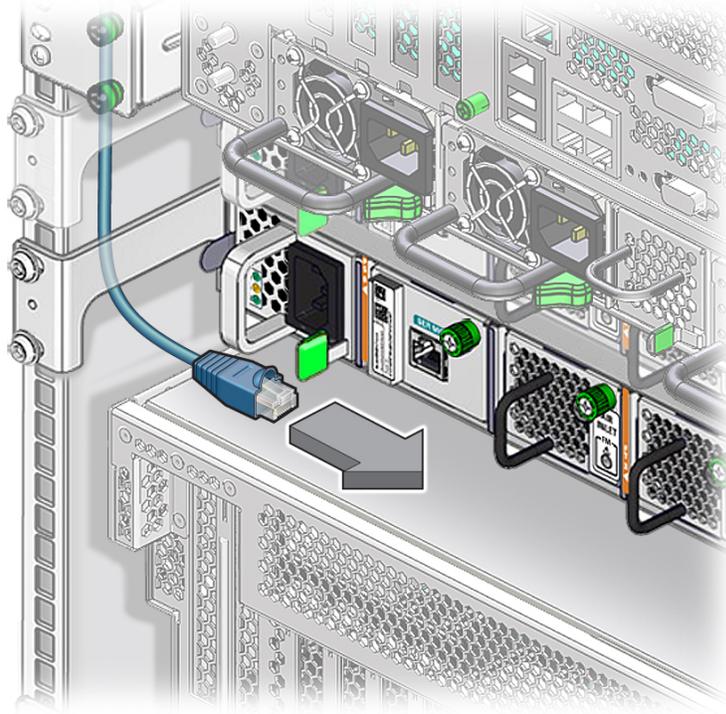
5. Pull the power cord through the opening, until you can grasp it with your fingers.



6. Pull the cord through, so that the end of the cord is free.
7. Repeat [Step 4](#) through [Step 6](#) for the other power cord if necessary.
8. If you have a full-time SER MGT connection, repeat [Step 4](#) through [Step 6](#) for the SER MGT cable.

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

---



**9. Power on the power supply.**

See [“Power On a Power Supply”](#) on page 157.

**Related Information**

- [“Power On a Power Supply”](#) on page 157
- [“Connect the SER MGT Cable”](#) on page 158
- [“Configure the Replacement Switch”](#) on page 161
- [“Install a Snap Bracket”](#) on page 164
- [“Install the Air Duct Assembly”](#) on page 166

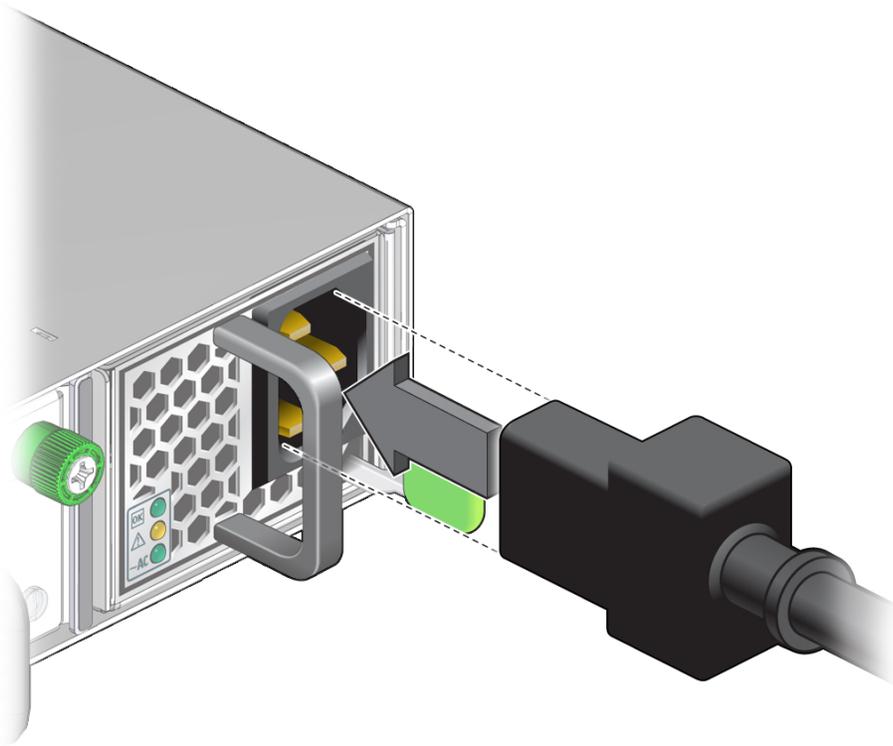
## ▼ Power On a Power Supply

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**Note** - Powering on either power supply powers on the switch.

---

1. **Reconnect the power cord to the power supply.**



The AC LED lights green to indicate that the power supply is connected to facility power. A moment later, the OK LED lights green to indicate the power supply is at full power.

2. **If you replaced a power supply as part of a service operation, verify that the power supply Attention LED is not on.**
  - If the Attention LED is on, see [“Verify a Power Supply” on page 137](#), then return to this procedure.

- If the Attention LED is off, go to [Step 3](#).
3. Consider your next step.
    - If you installed a power supply, install the snap bracket.  
See [“Install a Snap Bracket”](#) on page 164.
    - If you are powering on the switch after replacement, repeat [Step 1](#) with the other power cord.
    - If you are powering on the switch as part of the configuration process, return to that task.  
See [“Configure the Replacement Switch”](#) on page 161.
  4. Connect the SER MGT cable so that you can configure the replacement switch.  
See [“Connect the SER MGT Cable”](#) on page 158.

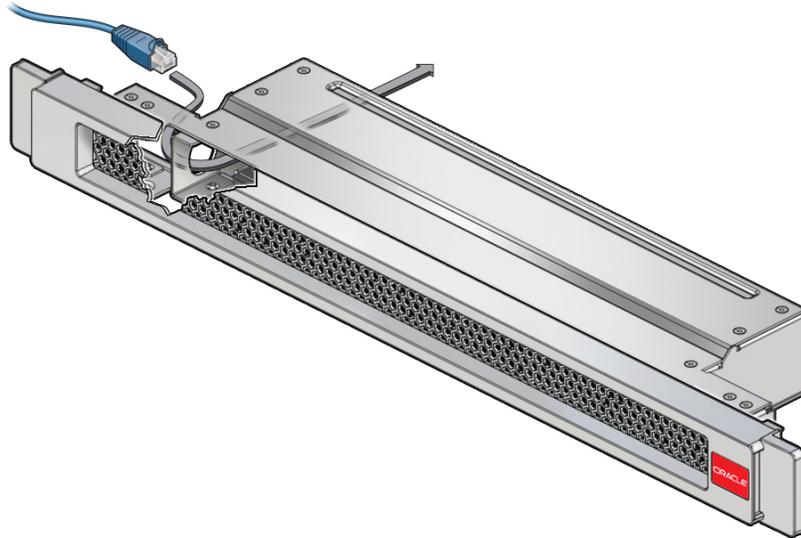
#### Related Information

- [“Retrieve the Power Cords and SER MGT Cable”](#) on page 154
- [“Connect the SER MGT Cable”](#) on page 158
- [“Configure the Replacement Switch”](#) on page 161
- [“Install a Snap Bracket”](#) on page 164
- [“Install the Air Duct Assembly”](#) on page 166

## ▼ Connect the SER MGT Cable

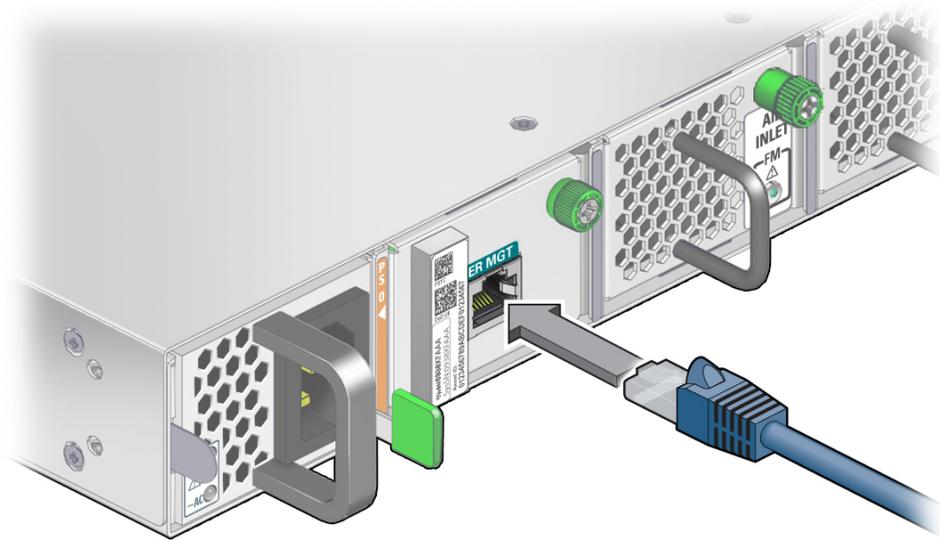
1. Consider your next step.
  - If the SER MGT cable will be a full-time connection, go to [Step 2](#).
  - If the SER MGT connection will only be temporary for configuring the replacement switch, go to [Step 4](#).
2. Pass the end of the SER MGT cable through the opening on the side of the air duct 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.



3. Continue to pull the cable through the air duct assembly to take up the slack.
4. 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.



5. Insert the connector into the receptacle until it clicks, securing it in place.
6. Consider your next steps.
  - If you have replaced the switch and need to configure it, see [“Configure the Replacement Switch” on page 161](#)
  - If you have installed a power supply, fan module, or battery, install the air duct assembly.  
See [“Install the Air Duct Assembly” on page 166](#).

### Related Information

- [“Retrieve the Power Cords and SER MGT Cable” on page 154](#)
- [“Power On a Power Supply” on page 157](#)
- [“Configure the Replacement Switch” on page 161](#)
- [“Install a Snap Bracket” on page 164](#)
- [“Install the Air Duct Assembly” on page 166](#)

## ▼ Configure the Replacement Switch

---

**Note** - The steps of this task are a generalization of what is to be done. For more thorough instructions on how to accomplish these steps, refer to the *Oracle EDR InfiniBand Switch and Virtualized I/O Systems Administration Guide*, the *Oracle Fabric Manager 5.0 Administration Guide*, and the *Oracle Fabric OS 1.0 Administration Guide*.

---



---

**Caution** - Do not connect any network or fabric cables until instructed to do so.

---

1. **Remove the Customer Information sheet from the shipping carton of the replacement switch.**
2. **Record the serial number, primary MAC ID, and secondary MAC ID.**  
The primary MAC ID is the SP MAC ID, the secondary MAC ID is the SCP MAC ID.
3. **Secure the Customer Information sheet in a safe place.**
4. **Consider your next steps.**
  - **If you will assign IP addresses to the SP and SCP through DHCP, configure your DHCP server now.**  
Go to [Step 5](#).
  - **If you will assign static IP addresses to the SP and SCP through the SER MGT port, go to [Step 8](#).**
5. **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.**  
Use the same IP address and host name as was for the switch you removed.
6. **Configure the DHCP server to assign a predetermined IP address and host name for the SCP MAC ID you recorded.**  
Use the same IP address and host name as was for the switch you removed.
7. **Go to [Step 9](#).**
8. **Using the SER MGT port, configure the replacement switch with the same host name and network management parameters as the switch you removed.**  
See “[Access the SP \(SER MGT Port\)](#)” on page 38 and “[Configure and Enable Network Management \(SER MGT Port\)](#)” on page 39.

9. **Attach a single network management cable.**  
See [“Install a Data Cable” on page 98.](#)
10. **Access the SP.**  
See [“Access the SP \(RJ-45 Port\)” on page 37](#)
11. **Restore the Oracle ILOM configuration.**  
The SEFOS configuration will be restored as well. Refer to the *Oracle EDR InfiniBand Switch and Virtualized I/O Systems Administration Guide*.
12. **Access the SCP.**  
See [“Access the SCP \(RJ-45 Port\)” on page 39.](#)
13. **Set the priority to the lowest.**  
Refer to the *Oracle Fabric Manager 5.0 Administration Guide*.
14. **Restore the switch configuration previously backed up.**
  - a. **Restore the Oracle Fabric Manager configuration on the switch.**  
Refer to the *Oracle Fabric Manager 5.0 Administration Guide*.
  - b. **Restore the Oracle Fabric OS configuration on the switch.**  
Refer to the *Oracle Fabric OS 1.0 Administration Guide*.
15. **Completely power off the replacement switch.**  
See [“Power Off a Power Supply” on page 76.](#)
16. **Connect the replacement switch to the network and the fabric.**  
See [“Install a Data Cable” on page 98.](#)
17. **Power on the replacement switch.**  
See [“Power On a Power Supply” on page 157.](#)  
Wait for any negotiation and propagation to complete.
18. **Perform these steps using Oracle Fabric Manager.**  
Refer to the *Oracle Fabric Manager 5.0 Administration Guide*.
  - a. **Migrate the partition configuration from the master Subnet Manager.**  
Wait for the partition configuration to propagate to the replacement switch.
  - b. **Enable security features from the master Subnet Manager.**

Wait for the security policies to propagate to the replacement switch.

- c. **Configure the Subnet Manager nodes list and fabric configuration file for the replacement switch, and ensure that the list and file are consistent with other switch lists and files.**
- d. **(Optional) Set the priority of the replacement switch to that originally of the removed switch.**

Wait for any handover to complete.

**19. Install the snap brackets.**

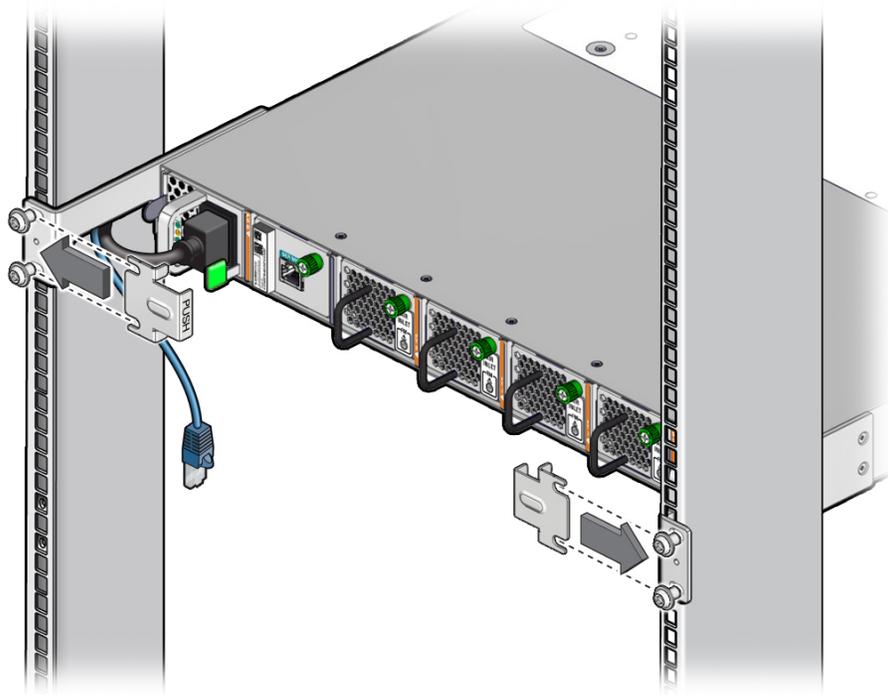
See [“Install a Snap Bracket” on page 164](#).

**Related Information**

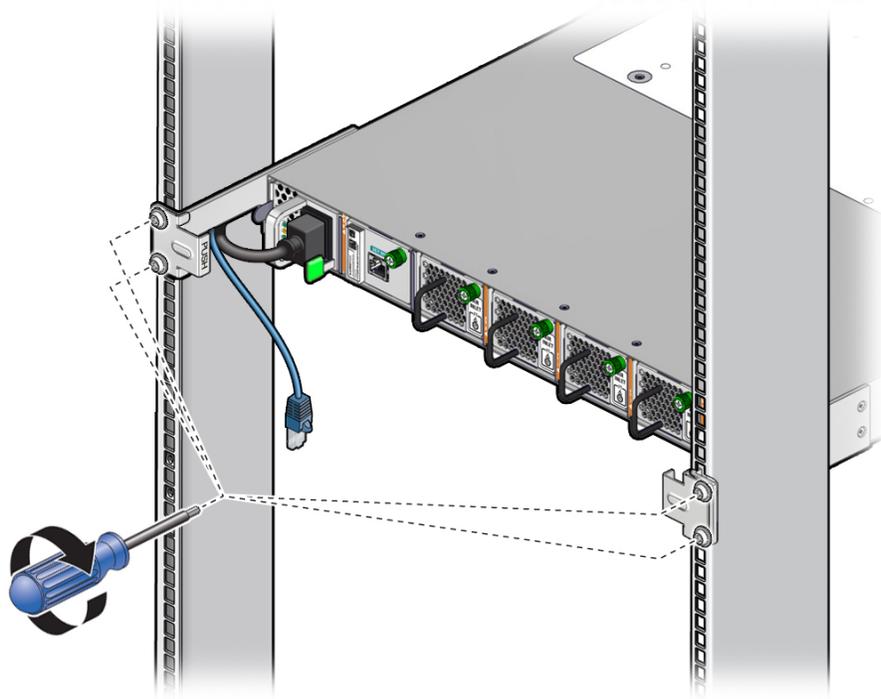
- [“Retrieve the Power Cords and SER MGT Cable” on page 154](#)
- [“Power On a Power Supply” on page 157](#)
- [“Connect the SER MGT Cable” on page 158](#)
- [“Install a Snap Bracket” on page 164](#)
- [“Install the Air Duct Assembly” on page 166](#)

## ▼ Install a Snap Bracket

1. Slide the snap bracket under the loosened screws with the tabs pointing into the rack.



2. While pressing on the word **PUSH** embossed in the snap bracket, fully tighten the screws with the No. 2 Phillips screwdriver.



3. Consider your next steps.
  - If you replaced a power supply, and have a full-time SER MGT connection, connect the SER MGT cable.  
See [“Connect the SER MGT Cable”](#) on page 158.
  - If you replaced a power supply, and there is no SER MGT connection, install the air duct assembly.  
See [“Install the Air Duct Assembly”](#) on page 166.
  - If you replaced the switch, repeat [Step 1](#) and [Step 2](#) for the other snap bracket.
4. Install the air duct assembly.  
See [“Install the Air Duct Assembly”](#) on page 166.

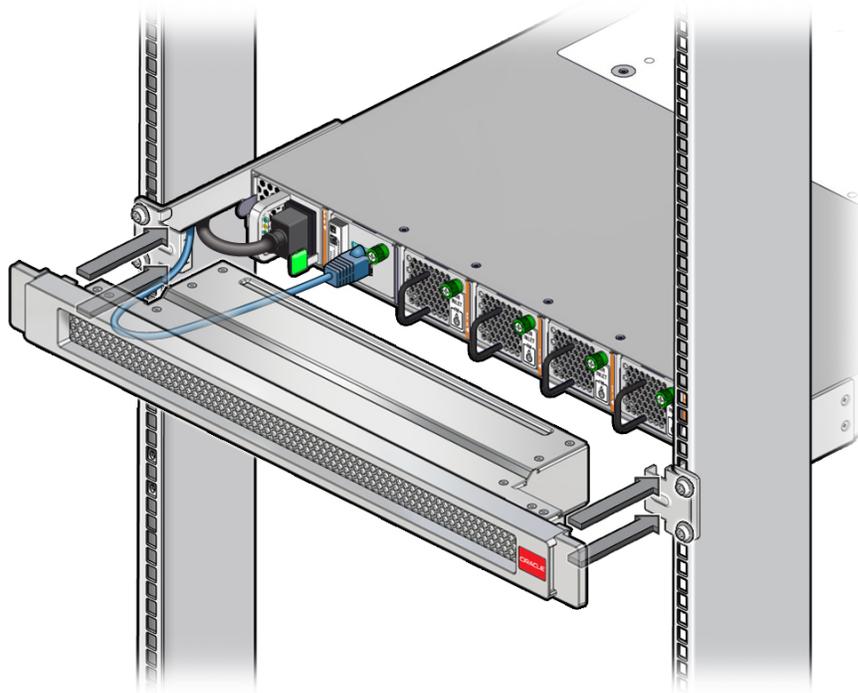
### Related Information

- [“Retrieve the Power Cords and SER MGT Cable” on page 154](#)
- [“Power On a Power Supply” on page 157](#)
- [“Connect the SER MGT Cable” on page 158](#)
- [“Configure the Replacement Switch” on page 161](#)
- [“Install the Air Duct Assembly” on page 166](#)

## ▼ Install the Air Duct Assembly

1. **Ensure that the snap brackets screws are tight to the rack posts.**
2. **Ensure that the power cords and SER MGT cable (if attached) are out of the way and do 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 rack.**

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



4. Push the air duct assembly in to the front of the switch, until it snaps into place.
5. If installed, close the rack front door.
6. Verify the installation of the component.

See:

- [“Verify a Fan Module” on page 127](#)
- [“Verify the Battery” on page 117](#)
- [“Verify a Power Supply” on page 137](#)
- [“Verify the Switch” on page 148](#)

#### Related Information

- [“Retrieve the Power Cords and SER MGT Cable” on page 154](#)

- [“Power On a Power Supply” on page 157](#)
- [“Connect the SER MGT Cable” on page 158](#)
- [“Configure the Replacement Switch” on page 161](#)
- [“Install a Snap Bracket” on page 164](#)

# 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.

**I<sup>2</sup>C** A hardware bus employing the IPMI protocol to query and affect I<sup>2</sup>C 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 I<sup>2</sup>C bus.

## K

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

**L**

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

**M**

|               |                                                                                                                                                                                   |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MAC</b>    | Machine Allocation Code. A 12-digit hexadecimal number that uniquely identifies a network node.                                                                                   |
| <b>MIB</b>    | 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. |
| <b>module</b> | A user-replaceable component for a chassis, typically externally accessible. See also I/O module and fan module.                                                                  |
| <b>MOS</b>    | My Oracle Support, at: <a href="http://support.oracle.com">http://support.oracle.com</a>                                                                                          |

**N**

|                           |                                                                                                        |
|---------------------------|--------------------------------------------------------------------------------------------------------|
| <b>network management</b> | A means of managing an SP or SCP through an Ethernet network. See also serial management, SP, and SCP. |
|---------------------------|--------------------------------------------------------------------------------------------------------|

**O**

|            |                                                                                                                                                             |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>OID</b> | 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. |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|

---

|                                                     |                                                                                                                                                                      |
|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Oracle F2 10 Gb and 40Gb Ethernet Module</b>     | An I/O module that provides either 10GbE or 40GbE functionality.                                                                                                     |
| <b>Oracle F2 Dual Port 16G Fibre Channel Module</b> | An I/O module that provides 16Gb Fibre Channel functionality.                                                                                                        |
| <b>Oracle F2 Long Range InfiniBand Module</b>       | An I/O module that provides QDR InfiniBand functionality over long distances.                                                                                        |
| <b>Oracle F2 Quad Port 10GBASE-T Module</b>         | An I/O module that provides four 10GbE interface functionality.                                                                                                      |
| <b>Oracle Fabric Interconnect F2-12</b>             | A virtualization switch. See also virtualization switch.                                                                                                             |
| <b>Oracle Fabric Manager</b>                        | A web-based GUI to administer the switch and fabric.                                                                                                                 |
| <b>Oracle Fabric OS</b>                             | Oracle Fabric Operating System. The operating system within the SCP, that manages the fabric. See also SCP.                                                          |
| <b>Oracle ILOM</b>                                  | Oracle Integrated Lights-Out Manager. An interface using the IPMI protocol and the I <sup>2</sup> C bus to monitor and control the hardware components of a chassis. |
| <b>Oracle InfiniBand Switch IS2-254</b>             | A spine switch. See also spine switch.                                                                                                                               |
| <b>Oracle InfiniBand Switch IS2-46</b>              | A leaf switch. See also leaf switch.                                                                                                                                 |
| <b>Oracle Linux OS</b>                              | Oracle Linux operating system. A UNIX-based operating system, often embedded into service processors. See also SP.                                                   |
| <b>Oracle Solaris OS</b>                            | 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.

|                          |                                                                                                                                                                       |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>spine switch</b>      | A switch utilizing a spine topology.                                                                                                                                  |
| <b>SR transceiver</b>    | A transceiver used for short range Fibre Channel communication.                                                                                                       |
| <b>SSH</b>               | Secure Shell. A secure network communication protocol, utilizing DSA and RSA algorithms. See also DSA and RSA.                                                        |
| <b>standard MT cable</b> | 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. |
| <b>switch front</b>      | 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.                      |
| <b>switch rear</b>       | 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

|                              |                                                                             |
|------------------------------|-----------------------------------------------------------------------------|
| <b>VAC</b>                   | Voltage alternating current.                                                |
| <b>VDC</b>                   | Voltage direct current.                                                     |
| <b>virtualization switch</b> | A switch supporting multiple interfaces having virtualization capabilities. |

## W

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



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