

Oracle® F2 Dual Port 16 Gb Fibre Channel Module User's Guide

ORACLE®

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Using This Documentation

This document uses the term *the module* to refer to the Oracle F2 Dual Port 16 Gb Fibre Channel I/O Module.

- **Overview** – Describes how to install and administrate the module.
- **Audience** – Installers, technicians, system administrators, and authorized service providers.
- **Required knowledge** – Advanced experience installing network hardware.

Product Documentation Library

Documentation and resources for this product and related products are available at <http://www.oracle.com/goto/f2-io-mod/docs>.

Feedback

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

Understanding the Module

These topics describe the module and the installation process.

- [“Installation Task Overview” on page 9](#)
- [“Shipping Kit Contents” on page 10](#)
- [“Module Overview” on page 10](#)
- [“Receptacles and LEDs” on page 12](#)
- [“Module Status LEDs” on page 14](#)
- [“FC Port Status LEDs” on page 15](#)

Related Information

- [“Confirming Specifications and Requirements” on page 17](#)
- [“Installing the Module” on page 19](#)
- [“Configuring Features” on page 31](#)

Installation Task Overview

| Step | Description | Links |
|------|--|---|
| 1. | Verify shipped components and accessories. | “Shipping Kit Contents” on page 10 |
| 2. | Familiarize yourself with the module, and the receptacles and LEDs on the front panel of the module. | <ul style="list-style-type: none">■ “Module Overview” on page 10■ “Receptacles and LEDs” on page 12■ “Module Status LEDs” on page 14■ “FC Port Status LEDs” on page 15 |
| 3. | Gather necessary cables. | “Supported Cables” on page 20 |
| 4. | Confirm physical and environmental specifications, power consumption allowances, and hardware and software requirements. | “Confirming Specifications and Requirements” on page 17 |
| 5. | Review handling and ESD precautions. | “ESD Precautions” on page 19 |
| 6. | Remove any filler panel, if installed. | “Remove the Filler Panel” on page 22 |

| Step | Description | Links |
|------|---------------------------------|--|
| 7. | Install the module. | “Install the Module” on page 25 |
| 8. | Connect the cables. | “Connect Cables and Transceivers” on page 28 |
| 9. | Verify the module installation. | “Verify Module Installation” on page 30 |
| 10. | Configure module features. | “Configuring Features” on page 31 |

Related Information

- [“Shipping Kit Contents” on page 10](#)
- [“Module Overview” on page 10](#)
- [“Receptacles and LEDs” on page 12](#)
- [“Module Status LEDs” on page 14](#)
- [“FC Port Status LEDs” on page 15](#)

Shipping Kit Contents

The shipping kit for the module contains:

- The module
- *Oracle F2 I/O Module Where To Find Documentation*

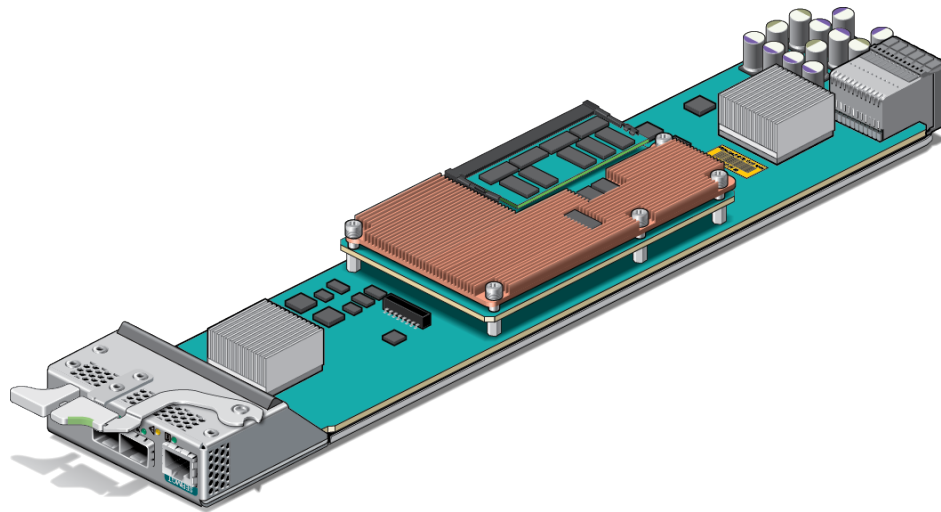
Related Information

- [“Installation Task Overview” on page 9](#)
- [“Module Overview” on page 10](#)
- [“Receptacles and LEDs” on page 12](#)
- [“Module Status LEDs” on page 14](#)
- [“FC Port Status LEDs” on page 15](#)

Module Overview

| Feature | Specification |
|---------|------------------------------------|
| IB | 2 IB 4x interfaces, speed support: |

| Feature | Specification |
|------------------------------|--|
| | <ul style="list-style-type: none"> ■ 40 Gbps - QDR ■ 56 Gbps - FDR ■ 100 Gbps - EDR |
| Data rate supported per port | 4 Gbps, 8 Gbps, or 16 Gbps |
| Connector | 2x SFP+ ports, support: <ul style="list-style-type: none"> ■ SFP+ FC - SR transceiver ■ SFP+ FC - LR transceiver |
| EMI | FCC Class A |



This hot-pluggable I/O module occupies one slot in the Oracle Fabric Interconnect F2-12 switch. The module provides interface to the virtualization switch's IB backbone as well as the Fibre Channel SAN.

The module's IB interface supports SDR, QDR, and EDR speeds (autonegotiating). The connection to the IB fabric occurs through the socket connection inside the virtualization switch.

The module's FC interface consists of the two FC ports that are industry-standard full duplex SFP+ optical interfaces offering data rates of 4, 8, and 16 Gbps per second (autonegotiating).

Each module supports a theoretical maximum of 128 virtual HBAs (VHBAs) per port for a maximum of 256 VHBAs per module. A fully loaded virtualization switch can support 12 modules, for a maximum offering of 3072 individual FC vHBAs.

Temperature sensors are used to monitor the operation temperature of critical components. The sensors are programmed with default threshold settings. High temperature condition will be

reported as alerts to the switch and its event monitoring systems, for example,SNMP or Oracle ILOM.

For information about switch temperature readings and temperature alerts, refer to the *Oracle EDR InfiniBand Switches and Virtualized I/O Systems Administration Guide* at http://docs.oracle.com/cd/E65867_01/html/E65872/index.html.

Related Information

- “Installation Task Overview” on page 9
- “Shipping Kit Contents” on page 10
- “Receptacles and LEDs” on page 12
- “Module Status LEDs” on page 14
- “FC Port Status LEDs” on page 15

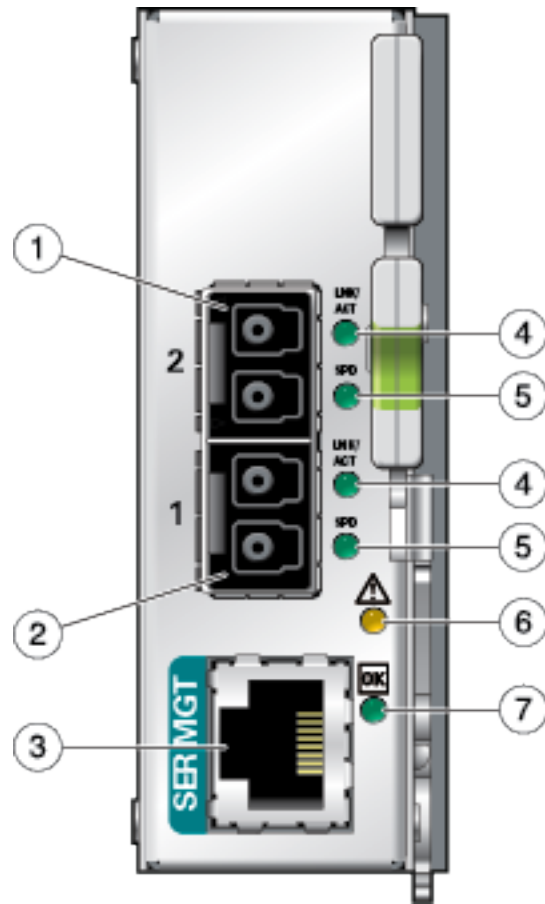
Receptacles and LEDs

The module has these ports:

- Two individual SFP+ 20-pin optical ports that offer data rates of 4, 8, and 16 Gbps per second. Each port consists of two optical ferrules. One ferrule provides the port's transmit path, and the other ferrule offers the port's receive path.
- One serial management port (SER MGT).



Caution - The SER MGT port is for Oracle use only. Do not use this port unless explicitly instructed to do so by Oracle Support personnel.



| No. | Description |
|-----|---|
| 1 | FC port 2, which supports up to 16 Gbps full duplex FC traffic through separate transmit and receive paths. |
| 2 | FC port 1, which supports up to 16 Gbps full duplex FC traffic through separate transmit and receive paths. |
| 3 | SER MGT, which is not for customer use. |
| 4 | Link/Activity (LNK/ACT) LED for each FC port. |
| 5 | Speed (SPD) LED for each FC port. |
| 6 | Module FAULT LED (Amber) |
| 7 | Module OK LED (Green) |



Related Information

- [“Installation Task Overview” on page 9](#)

- [“Shipping Kit Contents” on page 10](#)
- [“Module Overview” on page 10](#)
- [“Module Status LEDs” on page 14](#)
- [“FC Port Status LEDs” on page 15](#)

Module Status LEDs

During runtime operation, each module's LEDs indicate real-time status.

| Glyph | Name | Color | State and Meaning |
|---|-----------|-------|---|
|  | Attention | Amber | Indicates these conditions: <ul style="list-style-type: none"> ■ On: Module fault and requires attention ■ Off: Module normal operation |
|  | OK | Green | Indicates these conditions: <ul style="list-style-type: none"> ■ On: Module Powered and operational ■ Blink: Initializing (Hot-plug is not allowed) ■ Off: Module not operational |

The module has two status LEDs that indicate real-time status for the module:

- Attention (amber exclamation point) lights if the module is determined to be in an incorrect operational state.
- OK LED lights steady green when the module is in the correct operational state.

The Attention and OK LEDs do not blink simultaneously. This table shows the other states for the module LEDs.

| Attention LED | OK LED | Status |
|---------------|----------|---|
| Unlit | Unlit | Module is not receiving power or is inactive. |
| Unlit | Blinking | Module is in power up state. In this state, the module cannot be hot-plugged. The OK LED does not blink during module power down. |
| unlit | Lit | Module is powered on and operational. |
| Lit | Lit | Module is powered and operational, but needs attention. |
| Lit | Unlit | Module is not in correct operational mode and needs attention. |

Related Information

- [“Installation Task Overview” on page 9](#)

- [“Shipping Kit Contents” on page 10](#)
- [“Module Overview” on page 10](#)
- [“Receptacles and LEDs” on page 12](#)
- [“Module Status LEDs” on page 14](#)
- [“FC Port Status LEDs” on page 15](#)

FC Port Status LEDs

During runtime operation, each Fibre Channel port's LED indicates real-time status for the port.

- Green link or activity (LNK/ACT) LED indicates physical and logical-layer connectivity and the presence of FC frames on the link.
- Green speed (SPD) LED indicates the data rate of traffic on the link, 4 Gbps, 8 Gbps, or 16 Gbps.

Each port's SPD and LNK/ACT LEDs work together to indicate the port's current status.

| Link/Activity (LNK/ACT) LED | Speed (SPD) LED | Port Status |
|-----------------------------|-----------------|---|
| Unlit | Unlit | Port is inactive. |
| Lit | Unlit | 4 Gbps link is up, but no activity is present on the link. |
| Blinking | Unlit | 4 Gbps link is up, activity is present on the link. |
| Lit | Blinking | 8 Gbps link is up, but no activity is present on the link. |
| Blinking | Blinking | 8 Gbps link is up, activity is present on the link. |
| Lit | Lit | 16 Gbps link is up, but no activity is present on the link. |
| Blinking | Lit | 16 Gbps link is up, activity is present on the link. |

Related Information

- [“Installation Task Overview” on page 9](#)
- [“Shipping Kit Contents” on page 10](#)
- [“Module Overview” on page 10](#)
- [“Receptacles and LEDs” on page 12](#)
- [“Module Status LEDs” on page 14](#)

Confirming Specifications and Requirements

These topics describe the module specifications and requirements.

- [“Physical Specifications” on page 17](#)
- [“Power Specifications” on page 18](#)
- [“Hardware and Firmware Requirements” on page 18](#)

Related Information

- [“Understanding the Module” on page 9](#)
- [“Installing the Module” on page 19](#)
- [“Configuring Features” on page 31](#)

Physical Specifications

| Dimension | Metric | U.S. |
|-----------|----------|-----------|
| Length | 405.5 mm | 15.96 in. |
| Height | 81.6 mm | 3.21 in. |
| Weight | 1.01 kg | 2.25 lb. |

Related Information

- [“Power Specifications” on page 18](#)
- [“Hardware and Firmware Requirements” on page 18](#)

Power Specifications

| Description | Value |
|---------------------------|--|
| Maximum power consumption | 55W |
| Typical power consumption | 42W |
| Operating voltage | Input: 12V +/- 5% (minimum: 11.4 V, maximum: 12.6 V) |

Related Information

- [“Physical Specifications” on page 17](#)
- [“Hardware and Firmware Requirements” on page 18](#)

Hardware and Firmware Requirements

A basic switch configuration consists of six Oracle Dual Port 16 Gb Fibre Channel modules combined with other 10 Gb and 40 Gb Ethernet modules. However, more or less Oracle Dual Port 16 Gb Fibre Channel modules can be installed in the chassis as needed for your deployment.

For the latest information regarding the minimum requirements and interoperability of the module, refer to the *Oracle Fabric Interconnect F2-12 Product Notes* at:

<http://www.oracle.com/goto/f2-12/docs>

Related Information

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

Installing the Module

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

- [“ESD Precautions” on page 19](#)
- [“Order Additional Hardware” on page 20](#)
- [“Supported Cables” on page 20](#)
- [“Cable Cautions” on page 21](#)
- [“Remove the Filler Panel” on page 22](#)
- [“Install the Module” on page 25](#)
- [“Connect Cables and Transceivers” on page 28](#)
- [“Verify Module Installation” on page 30](#)

Related Information

- [“Understanding the Module” on page 9](#)
- [“Confirming Specifications and Requirements” on page 17](#)
- [“Installing the Module” on page 19](#)
- [“Configuring Features” on page 31](#)

ESD Precautions

When installing the module, follow antistatic precautions:

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

Related Information

- [“Order Additional Hardware” on page 20](#)

- “Supported Cables” on page 20
- “Cable Cautions” on page 21
- “Remove the Filler Panel” on page 22
- “Install the Module” on page 25
- “Connect Cables and Transceivers” on page 28
- “Verify Module Installation” on page 30

▼ Order Additional Hardware

- **Ensure that you have the appropriate cables.**
See “Supported Cables” on page 20.

Related Information

- “ESD Precautions” on page 19
- “Supported Cables” on page 20
- “Cable Cautions” on page 21
- “Remove the Filler Panel” on page 22
- “Install the Module” on page 25
- “Connect Cables and Transceivers” on page 28
- “Verify Module Installation” on page 30

Supported Cables

The module supports industry standard Fibre Channel optical cables that support SFP+ optical connections. For full duplex line rate, cables must support 16 Gbps second, but 4 Gbps and 8 Gbps traffic is also supported.

Check for available cables and transceivers in the *Oracle EDR Infiniband Fabric Connectivity Guide* at:

<https://community.oracle.com/docs/DOC-1006347>.




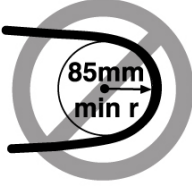

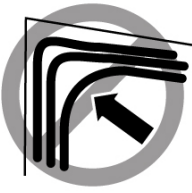
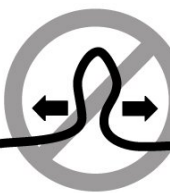


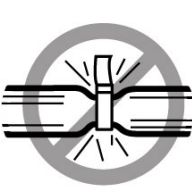
Related Information

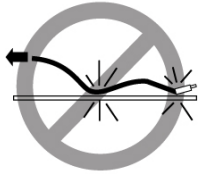
- “ESD Precautions” on page 19
- “Order Additional Hardware” on page 20
- “Cable Cautions” on page 21

- “Remove the Filler Panel” on page 22
- “Install the Module” on page 25
- “Connect Cables and Transceivers” on page 28
- “Verify Module Installation” on page 30

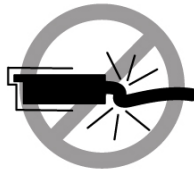
Cable Cautions

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

| | | | |
|---|---|---|---|
|  | Do not uncoil the cable, as a kink might occur. Hold the coil closed as you unroll the cable, pausing to allow the cable to relax as it is unrolled. |  | Do not step on the cable or connectors. Plan cable paths away from foot traffic or rolling loads. |
|  | Do not pull the cable out of the shipping box, through any opening, or around any corners. Unroll the cable as you lay it down and move it through turns. |  | Do not bend the cables to a radius tighter than 85 mm (3.4 inches). Ensure that cable turns are as wide as possible. |
|  | Do not twist the cable to open a kink. If it is not severe, open the kink by unlooping the cable. |  | Do not pack the cable to fit a tight space. Use an alternative cable route. |
|  | Do not straighten the cable to correct a bend that is too tight. Leave the cable bend as is. |  | Do not hang the cable for a length more than 2 meters (7 feet). Minimize the hanging weight with intermediate retention points. |
|  | Do not drop the cable or connectors from any height. Gently set the cable down, resting the cable connectors on a stable surface. |  | Do not cinch the cable with hard fasteners or cable ties. Use soft hook-and-loop fastener for bundling and securing cables. |



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



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

Related Information

- [“ESD Precautions” on page 19](#)
- [“Order Additional Hardware” on page 20](#)
- [“Supported Cables” on page 20](#)
- [“Remove the Filler Panel” on page 22](#)
- [“Install the Module” on page 25](#)
- [“Connect Cables and Transceivers” on page 28](#)
- [“Verify Module Installation” on page 30](#)

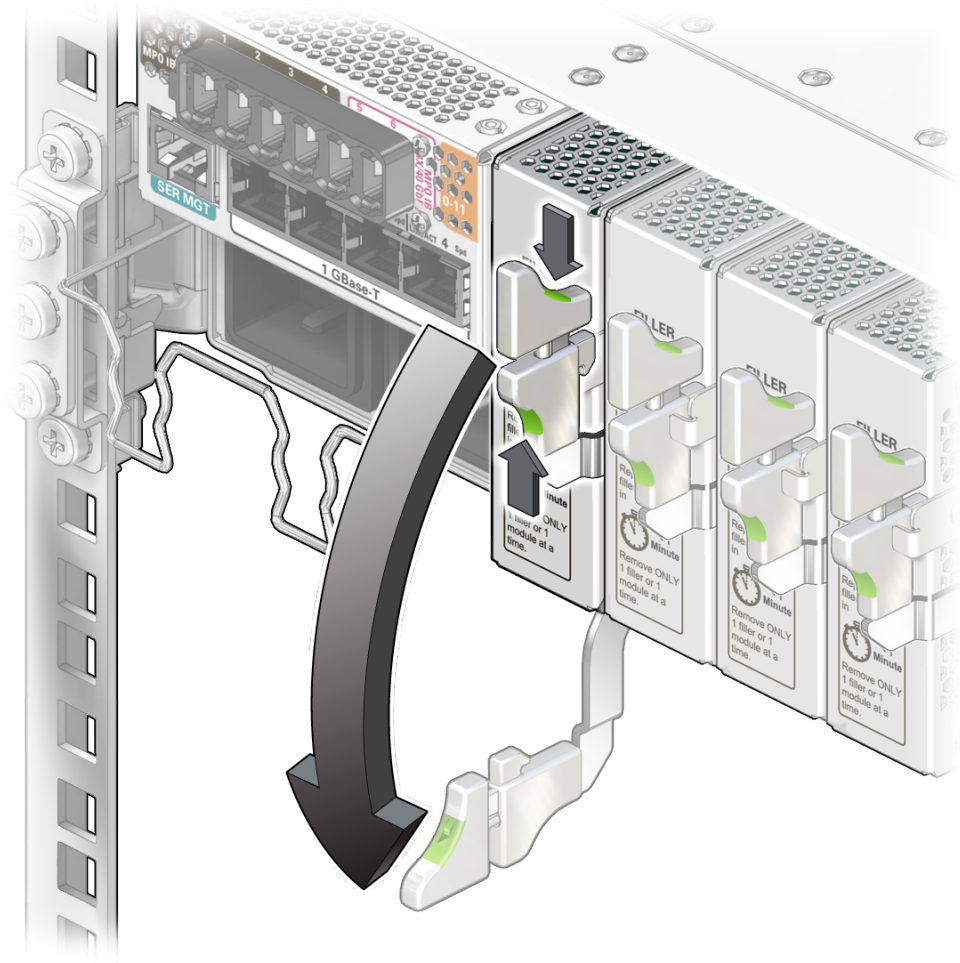
▼ Remove the Filler Panel

Use this procedure to remove a filler panel or existing module from the slot where you are installing the module.

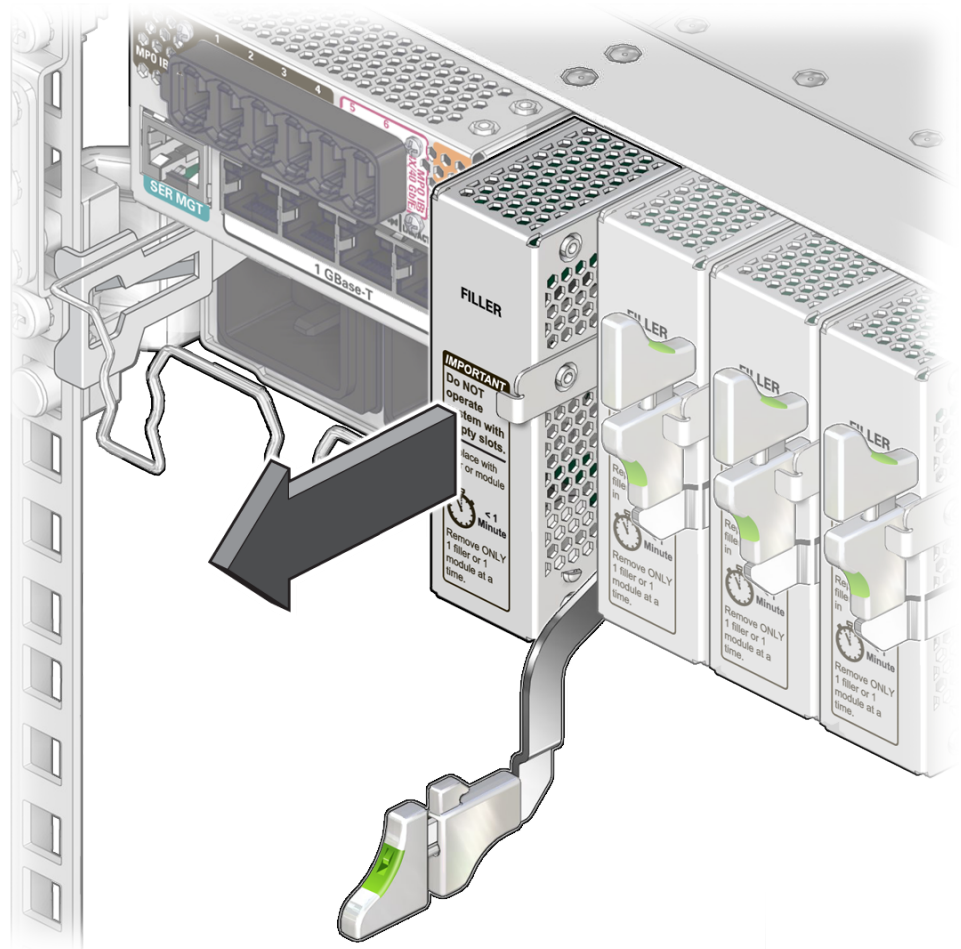
Note - To maintain thermal stability, never operate the switch with an empty slot. Remove filler panels only as you replace them with an I/O module in a one-for-one basis.

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**
See [“Installation Task Overview” on page 9](#).
2. **At the location where you are installing the module, remove the filler panel, if installed.**
 - a. **Squeeze the top and bottom of the release lever, and pull the lever in a downward motion.**

The filler panel is unseated from the slot connection.



- b. Use the release lever to pull the filler panel from the switch chassis.



- c. Use your free hand to take the weight of the filler panel, as it comes free of the chassis.
 - d. Set the filler panel aside and save it for future use.
3. Install the module.
See [“Install the Module”](#) on page 25.

Related Information

- [“ESD Precautions” on page 19](#)
- [“Order Additional Hardware” on page 20](#)
- [“Supported Cables” on page 20](#)
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- [“Install the Module” on page 25](#)
- [“Connect Cables and Transceivers” on page 28](#)
- [“Verify Module Installation” on page 30](#)

▼ Install the Module

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**
See [“Installation Task Overview” on page 9](#).
2. **If the rack rear door is installed, open it.**
3. **Remove the module from its antistatic packaging.**

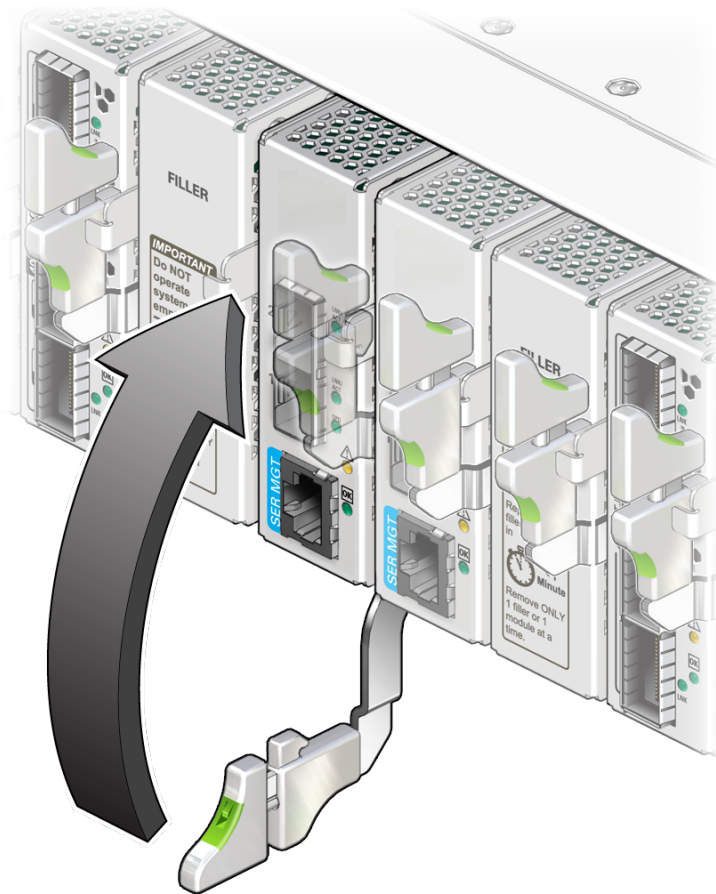
4. **Squeeze the top and bottom of the release lever, and move the release lever to the fully open position.**



5. **Align the module to the slot where you are installing it.**
The LEDs and data cable receptacles face you, and the release lever is to the lower right.
6. **Slide the module into the chassis until the release lever begins to rise.**
7. **When the module is almost completely seated in the slot and the release lever begins to rise, press down slightly on the top of the module to ensure that the**

notch at the end of the release lever catches onto the groove in the slot entrance in order to secure the module.

Note - Ensure the handle appears in the fully locked position as in the illustration when fully engaged.



8. Verify that the green OK LED lights.
9. Repeat [Step 3](#) to [Step 8](#) to install the remaining modules.
10. Connect the data cables to the module.
See [“Connect Cables and Transceivers”](#) on page 28.

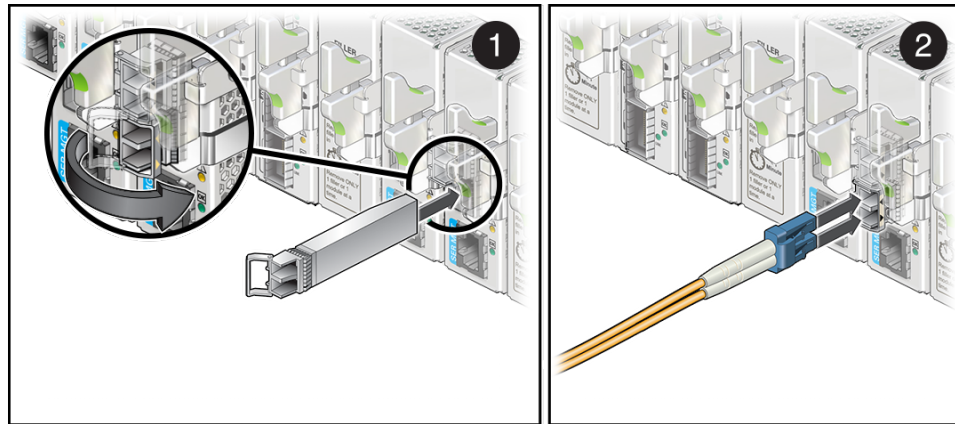
Related Information

- [“ESD Precautions” on page 19](#)
- [“Order Additional Hardware” on page 20](#)
- [“Supported Cables” on page 20](#)
- [“Cable Cautions” on page 21](#)
- [“Remove the Filler Panel” on page 22](#)
- [“Connect Cables and Transceivers” on page 28](#)
- [“Verify Module Installation” on page 30](#)

▼ Connect Cables and Transceivers

1. **Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**
See [“Installation Task Overview” on page 9](#).
2. **Attach the cable to the appropriate connector of the node or host.**
3. **Route and bundle the data cables through the physical topology.**
4. **Bring the cable to the location in the rack where the module is installed.**
5. **Orient the transceiver squarely and horizontally with the selected SFP+ port, then carefully insert the transceiver into the port on the module until you feel a detent or click..**
Ensure the metal clip on the transceiver is in the closed position.
6. **Remove the protective cap (if present) from the receptacle on the transceiver and the connector of the cable, and visually inspect the cable connector.**
7. **Orient the cable connector to the receptacle squarely and horizontally.**

Note - Ensure the metal clip on the transceiver is in the closed position prior to connecting the cable to the transceiver.



8. Slowly move the connector in, and continue to push the connector in until you feel a click.
9. Repeat Step 2 to Step 8 for any other cables and transceivers to be connected.
10. If the rack rear door is installed, close and secure it.
11. Verify the module installation.
See [“Verify Module Installation” on page 30](#).

Related Information

- [“ESD Precautions” on page 19](#)
- [“Order Additional Hardware” on page 20](#)
- [“Supported Cables” on page 20](#)
- [“Cable Cautions” on page 21](#)
- [“Remove the Filler Panel” on page 22](#)
- [“Install the Module” on page 25](#)
- [“Verify Module Installation” on page 30](#)

▼ Verify Module Installation

- 1. Identify the prerequisite and subsequent installation tasks that you must perform in conjunction with this task.**
See [“Installation Task Overview”](#) on page 9.
- 2. Verify LED status.**
See [“Module Status LEDs”](#) on page 14.
- 3. Through software, verify the module status and port status through [Oracle ILOM](#), [Oracle Fabric OS CLI](#) or [Oracle Fabric Manager GUI](#).**
See [“Configuring Features”](#) on page 31.
- 4. After verifying module functionality, you can now configure the module.**
See [“Configuring Features”](#) on page 31.

Related Information

- [“ESD Precautions”](#) on page 19
- [“Order Additional Hardware”](#) on page 20
- [“Supported Cables”](#) on page 20
- [“Cable Cautions”](#) on page 21
- [“Remove the Filler Panel”](#) on page 22
- [“Install the Module”](#) on page 25
- [“Connect Cables and Transceivers”](#) on page 28

Configuring Features

This I/O module arrives fully configured according to your specifications. All of the module's I/O ports that are used for gateways, IB ports, or FC ports are automatically activated.

Configuring, managing, and monitoring the module functionality occurs through [Oracle ILOM](#), [Oracle Fabric OS CLI](#), or [Oracle Fabric Manager GUI](#).

- “[Configuring the Virtualization Switch and I/O Modules](#)” in *Oracle Fabric OS 1.0.2 Administration Guide* for configuring, managing, and monitoring the module via CLI.
- *Oracle® Fabric Manager 5.0.2 Administration Guide* at http://docs.oracle.com/cd/E64523_01 for configuring, managing, and monitoring the module via a GUI.
- *Oracle Fabric OS 1.0.2 Command Reference* at http://docs.oracle.com/cd/E64522_01/index.html for syntax and examples.
- *Oracle EDR InfiniBand Switch and Virtualized I/O Systems Administration Guide* at http://docs.oracle.com/cd/E65867_01/html/E65872/index.html for more information on ILOM commands.

These topics describe how to configure features for the module.

- “[Oracle ILOM Module Targets Overview](#)” on page 31
- “[Administering Fibre Channel Features](#)” on page 32

Related Information

- “[Understanding the Module](#)” on page 9
- “[Confirming Specifications and Requirements](#)” on page 17
- “[Installing the Module](#)” on page 19

Oracle ILOM Module Targets Overview

This topic describes the I/O module targets supported by the Oracle ILOM CLI. It also provides a brief introduction to Oracle ILOM commands. Users can find more information on how to get

help for Oracle ILOM, and how to issue commands through Oracle ILOM CLI. in the *Oracle EDR InfiniBand Switch and Virtualized I/O Systems Administration Guide* at http://docs.oracle.com/cd/E65867_01/html/E65872/index.html.

The table lists ILOM commands available for I/O modules.

| Task | Commands | Link |
|------------------------|---|--|
| I/O module management. | <pre>start /SYS/MODULES/MODULEx stop /SYS/MODULES/MODULEx reset /SYS/MODULES/MODULEx set /SYS/MODULES/MODULEx show /SYS/MODULES/MODULEx</pre> | “Understanding Oracle ILOM Targets” in Oracle EDR InfiniBand Switch and Virtualized I/O Systems Administration Guide |

Administering Fibre Channel Features

The module supports numerous standard Fibre Channel features through the Oracle Fabric OS or Oracle Fabric Manager interfaces.

- [“Fibre Channel Module Considerations” on page 32](#)
- [“Fibre Channel Commands Overview” on page 33](#)
- [“General I/O Card Commands” on page 33](#)
- [“Fibre Channel Card Commands” on page 34](#)
- [“General I/O Port Commands” on page 35](#)
- [“Fibre Channel Port Commands” on page 35](#)
- [“vHBA Commands” on page 36](#)

Fibre Channel Module Considerations

This topic provides general guidelines prerequisites about how to configure the FC card in a SAN, such as:

- NPIV must be enabled on the Fibre Channel switch to which the FC card is connecting. For information about configuring NPIV on the Fibre Channel switch, refer to the switch manufacturer's documentation.
- If your SAN will support zoning, make sure to include the appropriate VHBAs in the appropriate zone(s).

Related Information

- [“Fibre Channel Commands Overview” on page 33](#)
- [“General I/O Card Commands” on page 33](#)
- [“Fibre Channel Card Commands” on page 34](#)
- [“General I/O Port Commands” on page 35](#)
- [“Fibre Channel Port Commands” on page 35](#)
- [“Fibre Channel Port Commands” on page 35](#)
- [“vHBA Commands” on page 36](#)

Fibre Channel Commands Overview

Configuring Fibre Channel functionality occurs through the Oracle Fabric OS or Oracle Fabric Manager GUI. These topics document the commands available through Oracle Fabric OS CLI. For Oracle Fabric Manager, see *Oracle® Fabric Manager 5.0.2 Administration Guide* at http://docs.oracle.com/cd/E64523_01.

Related Information

- [“Fibre Channel Module Considerations” on page 32](#)
- [“General I/O Card Commands” on page 33](#)
- [“Fibre Channel Card Commands” on page 34](#)
- [“General I/O Port Commands” on page 35](#)
- [“Fibre Channel Port Commands” on page 35](#)
- [“Fibre Channel Port Commands” on page 35](#)
- [“vHBA Commands” on page 36](#)

General I/O Card Commands

This table documents the common task for managing I/O modules of any type. For procedures on configuring, managing, and displaying an I/O module, refer to the documentation in the links.

| Task | Command | Links |
|----------------------------------|--|--|
| Configure and manage an I/O Card | <pre>set iocard slot reset remove iocard slot remove iocard slot vhbases</pre> | <ul style="list-style-type: none"> ■ “Managing a Module” in Oracle Fabric OS 1.0.2 Administration Guide ■ “iocard” in Oracle Fabric OS 1.0.2 Command Reference |

| Task | Command | Links |
|------------------------------|---------------------------------|---|
| Display I/O card information | <code>show iocard * slot</code> | <ul style="list-style-type: none"> ■ “Add I/O Modules to a Domain” in Oracle Fabric Manager 5.0.2 Administration Guide |

Related Information

- [“Fibre Channel Module Considerations” on page 32](#)
- [“Fibre Channel Commands Overview” on page 33](#)
- [“Fibre Channel Card Commands” on page 34](#)
- [“Fibre Channel Port Commands” on page 35](#)
- [“General I/O Port Commands” on page 35](#)
- [“Fibre Channel Port Commands” on page 35](#)
- [“vHBA Commands” on page 36](#)

Fibre Channel Card Commands

This table documents the commands for managing FC cards.

| Task | Command | Links |
|--|--|---|
| Configure and manage a Fibre Channel card | <code>set fc-card {* slot} [-descr=text]</code> <code>remove fc-card {* slot}</code> | “Configuring the Virtualization Switch and I/O Modules” in Oracle Fabric OS 1.0.2 Administration Guide |
| Display Fibre Channel Card information | <code>show fc-card {* slot} ioport ioport-number wildcard</code> <code>show fc-card {* slot} ioports</code> <code>show fc-card {* slot} stats</code> <code>show fc-card {* slot} utilization</code> <code>show fc-card {* slot} vhas</code> <code>show fc-card {* slot} dmsg</code> | |
| Options | <ul style="list-style-type: none"> ■ <code>-descr</code> ■ <code>-detail</code> | |
| Check for alarms, errors, or warning messages on the module. | <code>show fc-card {* slot} alarms</code> <code>show fc-card {* slot} errors</code> <code>show fc-card {* slot} warnings</code> | <p>If alarms are present, resolve them. Refer to: “Servicing I/O Modules” in Oracle Fabric Interconnect F2-12 Service Manual.</p> <p>Assuming no alarms or errors on the module, configure the FC ports. “Configuring the Virtualization Switch and I/O Modules” in Oracle Fabric OS 1.0.2 Administration Guide</p> |

Related Information

- [“Fibre Channel Module Considerations” on page 32](#)
- [“Fibre Channel Commands Overview” on page 33](#)
- [“General I/O Card Commands” on page 33](#)
- [“Fibre Channel Card Commands” on page 34](#)
- [“General I/O Port Commands” on page 35](#)
- [“Fibre Channel Port Commands” on page 35](#)
- [“Fibre Channel Port Commands” on page 35](#)
- [“vHBA Commands” on page 36](#)

General I/O Port Commands

This table documents the commands for managing any type of I/O port. For procedures on configuring, managing, and displaying I/O ports, refer to the documentation in the links.

| Task | Commands | Links |
|----------------------------------|---|--|
| Configure and manage an I/O port | <code>set ioport slot/port clear-stats</code> | ■ “Managing a Module” in Oracle Fabric OS 1.0.2 Administration Guide |
| Display I/O port information | <code>show ioport slot/port alarms</code> <code>show ioport slot/port stats</code> | ■ “ioport” in Oracle Fabric OS 1.0.2 Command Reference |

Related Information

- [“Fibre Channel Module Considerations” on page 32](#)
- [“Fibre Channel Commands Overview” on page 33](#)
- [“General I/O Card Commands” on page 33](#)
- [“Fibre Channel Card Commands” on page 34](#)
- [“Fibre Channel Port Commands” on page 35](#)
- [“Fibre Channel Port Commands” on page 35](#)
- [“vHBA Commands” on page 36](#)

Fibre Channel Port Commands

This table documents the commands for managing Fibre Channel ports. For procedures on configuring, managing, and displaying Fibre Channel ports, refer to the documentation.

| Task | Commands | Links |
|---|---|--|
| Configure and manage a Fibre Channel port | <pre>set fc-port {* slot/port} [-descr=text] set fc-port {* slot/port}[-fc-link-down-timeout={number default}] set fc-port {* slot/port} [-fc-target-port-down-timeout={number default}] set fc-port slot/port -topology={f-port l-port n-port}]</pre> | <p>“Managing a Module” in Oracle Fabric OS 1.0.2 Administration Guide</p> <p>“fc-port” in Oracle Fabric OS 1.0.2 Command Reference</p> |
| Display Fibre Channel port information | <pre>show fc-port {* slot/port} [-detail] show fc-port {* slot} alarms [-detail] show fc-port {* slot} -stats [-detail] show fc-port {* slot} -vhbas</pre> | |
| Options | <ul style="list-style-type: none"> ■ -descr ■ -detail ■ -fc-link-down-timeout ■ -fc-target-port-down-timeout ■ -topology ■ -f-port ■ -l-port ■ -n-port | |

Related Information

- [“Fibre Channel Module Considerations” on page 32](#)
- [“Fibre Channel Commands Overview” on page 33](#)
- [“General I/O Card Commands” on page 33](#)
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vHBA Commands

Assuming the Fibre Channel module and ports are in an up/up state, you can configure vHBAs. This table documents the commands for configuring, managing, and displaying vHBAs. For procedures on configuring, managing, and displaying vHBAs, refer to the documentation.

| Task | Commands | Links |
|----------------------------|------------------------------------|---|
| Configure and manage vHBAs | <pre>add vhba name slot/port</pre> | <p>“Configuring vHBAs” in Oracle Fabric OS 1.0.2 Administration Guide</p> |

| Task | Commands | Links |
|--------------------------|---|---|
| | <pre>set vhma <i>name</i> clear set vhma <i>name</i> full-scan set vhma <i>name</i> prescan set vhma <i>name</i> remove-prescan set vhma <i>name</i> rescan set vhma <i>name</i> down set vhma <i>name</i> up set vhma <i>name</i> -descr= set vhma <i>name</i> fabric-link-down- timeout set vhma <i>name</i> -if= remove vhma <i>name</i> *</pre> | “Managing VHBAs on a Physical Server” in Oracle Fabric Manager 5.0.2 Administration Guide |
| Display vHBA information | <pre>show vmbas <i>name</i> show vhma <i>name</i> stats show vhma <i>name</i> alarms show vhma <i>name</i> errors show vhma <i>name</i> map show vhma <i>name</i> warnings show vhma <i>name</i> where show vhma <i>name</i> target show vhma <i>name</i> targets show vhma <i>name</i> througput show vhma <i>name</i> -detail</pre> | |
| Check for vHBA errors | <pre>show vhma <i>name</i> alarms show vhma <i>name</i> errors show vhma <i>name</i> warnings</pre> | If alarms are present, resolve them. Refer to the <i>Oracle® Fabric Interconnect F2-12 Service Manual</i> . |

Related Information

- [“Fibre Channel Module Considerations” on page 32](#)
- [“Fibre Channel Commands Overview” on page 33](#)
- [“General I/O Card Commands” on page 33](#)

- [“Fibre Channel Card Commands” on page 34](#)
- [“General I/O Port Commands” on page 35](#)
- [“Fibre Channel Port Commands” on page 35](#)
- [“Fibre Channel Port Commands” on page 35](#)

Glossary

A

Admin State Administrative State. The intention of the operator by setting a given resource up or down. See also [Oper State](#).

C

CLI The Oracle Fabric OS CLI. (This CLI is separate from the Oracle Fabric Manager CLI.)

E

EDR Enhanced Data Rate.

F

fabric Oracle's EDR InfiniBand fabric. A 100-Gb converged fabric for network, storage, and interprocess communication.

G

gateway The connections between the IB fabric and the data center LAN. Ethernet gateways present a collection of NICs to the Ethernet LAN.

gateway port A general term that includes both IB ports and Ethernet gateway ports.

GB Abbreviation of Gigabyte.

GbE Abbreviation of GigabitEthernet.

| | |
|-------------------|--|
| Gbit/sec | Abbreviation of Gigabits per second. |
| GUI | Graphical user interface. The recommended interface for Oracle Fabric Manager 5.0.2. |
| H | |
| HA | High Availability. |
| HBA | Host bus adaptor. A Fibre Channel NIC used in a SAN fabric. HBAs are replacing SCSI HBAs. |
| HCA | Host channel adapter. An InfiniBand NIC used in an InfiniBand network. Provides high-speed connectivity and virtual interfaces, based on the IB interface. An HCA can have one or two ports. |
| I | |
| I/O | Input/output. In computer architecture, the combination of the CPU and main memory (that is, memory that the CPU can read and write to directly, with individual instructions) is considered the "heart" of a computer. Any movement of information to or from that complex, for example to or from a disk drive, is considered I/O. |
| I/O module | A user-replaceable physical interface component for the Oracle Fabric Interconnect F2-12 and Oracle InfiniBand Switch IS2-254. |
| I/O port | A single port on an Ethernet module, an HBA module, or one of the 38 IB server ports. |
| IB | InfiniBand. A high bandwidth messaging technology used for very high performance computing. |
| ILOM | See Oracle ILOM . |
| L | |
| LAG | Link Aggregation Group. |
| LID | Local identifier for the HCA or local identifier number that the IB path uses. |
| M | |
| module | A user-replaceable component for a switch chassis. Typically externally accessible. See also I/O module . |

| | |
|-------------------------------------|--|
| MTU | Maximum Transmission Unit. The largest physical packet size (in bytes) that a network can transmit. MTU values are only applicable to Ethernet ports, and the MTU of the I/O port must match the MTU of the neighboring switch. |
| N | |
| NIC | Network interface card. |
| O | |
| Oper State | Operative State. Indicates whether a resource is configured and operating properly. See also Admin State . |
| Oracle EDR InfiniBand Fabric | The fabric used to build and manage an Oracle cloud network infrastructure. |
| Oracle Fabric Manager | Oracle Fabric Manager is a GUI that enables you to configure and manage Oracle fabric devices and the virtual network and storage resources associated with the fabric devices. |
| Oracle Fabric OS | The Oracle Fabric OS 1.0.2 runs on the Oracle InfiniBand Switch IS2-46 (leaf switch) and the Oracle Fabric Interconnect F2-12 (virtualization switch). The Oracle Fabric OS manages the switches, the Oracle EDR InfiniBand Fabric devices, and virtual network and storage resources. |
| Oracle ILOM | Oracle Integrated Lights Out Manager (ILOM) is the service processor embedded on all Oracle's SPARC Enterprise T-series and Sun Fire x86 servers, including all rack mounts and blades. Oracle ILOM enables full out-of-band management, providing a remote management capability. |
| S | |
| server profile | One instance of a server I/O configuration that is assignable to a single physical server through an IB port. |
| SFP+ | Abbreviation for small form-factor pluggable. A form-factor for high-speed data interconnects. |
| state | Displayed in Oracle Fabric Manager and the CLI as a pair of statuses, for example: up/up. The first is the Admin State while the second is the Oper State . When using SNMP, these statuses are returned individually. |
| subnet manager | Configures all aspects of an IB fabric, including assigning LIDs to all HCAs and switch ports in the fabric, providing lookup service for end nodes, configuring program switch forwarding |

tables based upon the selected routing algorithm, and programming PKEY tables for HCAs and switches.

V

- virtualization switch** Oracle Fabric Interconnect F2- Switch. This virtualization switch supports several I/O modules that provide FC and Ethernet connectivity.
- VLAN** Virtual local area network. A private, independent, logical network that is created within a physical network. A VLAN behaves like an ordinary LAN, but connected devices don't have to be physically connected to the same network segment.
- vNIC** Virtual network interface card. An Ethernet interface, provided without a physical NIC.

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