

Sun Network QDR InfiniBand Gateway Switch

Service Manual for Firmware Version 2.0



Part No.: E26710-01
November 2011, Revision A

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Using This Documentation

This service manual provides detailed procedures that describe the service of the Sun Network QDR InfiniBand Gateway Switch from Oracle. This document is written for technicians, system administrators, and users who have advanced experience servicing InfiniBand fabric hardware.

- “Product Notes” on page v
- “Related Documentation” on page vi
- “Feedback” on page vi
- “Support and Accessibility” on page vi

Product Notes

For late-breaking information and known issues about this product, refer to the product notes at:

<http://www.oracle.com/pls/topic/lookup?ctx=E26699-01>

Related Documentation

Documentation	Links
All Oracle products	http://www.oracle.com/documentation
Sun Network QDR InfiniBand Gateway Switch	http://www.oracle.com/pls/topic/lookup?ctx=E26699-01
Oracle Solaris OS and other systems software	http://www.oracle.com/technetwork/indexes/documentation/index.html#sys_sw
Oracle Integrated Lights Out Manager (ILOM) 3.0	http://www.oracle.com/pls/topic/lookup?ctx=E19860-01

Feedback

Provide feedback on this documentation at:

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Support and Accessibility

Description	Links
Access electronic support through My Oracle Support	http://support.oracle.com
	For hearing impaired: http://www.oracle.com/accessibility/support.html
Learn about Oracle's commitment to accessibility	http://www.oracle.com/us/corporate/accessibility/index.html

Understanding Service Procedures

Servicing the gateway means a component addition, replacement, or subtraction.

A component addition means installing a component to increase the functionality of the gateway. Component replacement means removing a failed component and installing a functional one. Component subtraction means removing a component.

Once a failed part is identified, it can be replaced. The topics listed here help you service gateway chassis components.

- [“Replaceable Components” on page 1](#)
- [“Suggested Tools for Service” on page 3](#)
- [“Antistatic Precautions for Service” on page 3](#)

Related Information

- [“Servicing Power Supplies” on page 5](#)
- [“Servicing Fans” on page 17](#)
- [“Servicing Data Cables” on page 25](#)
- [“Servicing the Battery” on page 37](#)

Replaceable Components

This illustration identifies the replaceable components of the gateway.

FIGURE: Replaceable Components



Figure Legend

1	Battery
2	Fan
3	Power supply

Related Information

- [“Servicing Power Supplies” on page 5](#)
- [“Servicing Fans” on page 17](#)
- [“Servicing Data Cables” on page 25](#)
- [“Servicing the Battery” on page 37](#)
- [“Suggested Tools for Service” on page 3](#)
- [“Antistatic Precautions for Service” on page 3](#)

Suggested Tools for Service

These tools are necessary or beneficial for servicing the gateway:

- Antistatic wrist strap
- Antistatic mat
- No. 2 Phillips screwdriver
- No. 1 Phillips screwdriver
- Flashlight
- Gloves
- Magnifying glass

Related Information

- [“Replaceable Components” on page 1](#)
- [“Antistatic Precautions for Service” on page 3](#)

Antistatic Precautions for Service

When installing the gateway chassis, take care to 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 gateway chassis.

Related Information

- [“Replaceable Components” on page 1](#)
- [“Suggested Tools for Service” on page 3](#)

Servicing Power Supplies

These topics provide procedures for servicing the power supplies.

Description	Links
Add a power supply.	“Inspecting a Power Supply” on page 5 “Install a Power Supply” on page 12 “Power On a Power Supply” on page 14
Replace a power supply.	“Inspecting a Power Supply” on page 5 “Power Off a Power Supply” on page 9 “Remove a Power Supply” on page 10 “Install a Power Supply” on page 12 “Power On a Power Supply” on page 14
Subtract a power supply.	“Power Off a Power Supply” on page 9 “Remove a Power Supply” on page 10

Related Information

- [“Understanding Service Procedures” on page 1](#)
- [“Servicing Fans” on page 17](#)
- [“Servicing Data Cables” on page 25](#)
- [“Servicing the Battery” on page 37](#)

Inspecting a Power Supply

Before installing a power supply, perform these tasks to verify its suitability for installation.

Step	Description	Links
1.	Identify the Power Supply.	“Identify the Power Supply” on page 6
2.	Inspect the hardware.	“Inspect the Power Supply Hardware” on page 8
3.	Inspect the connectors.	“Inspect the Power Supply Connectors” on page 8

Related Information

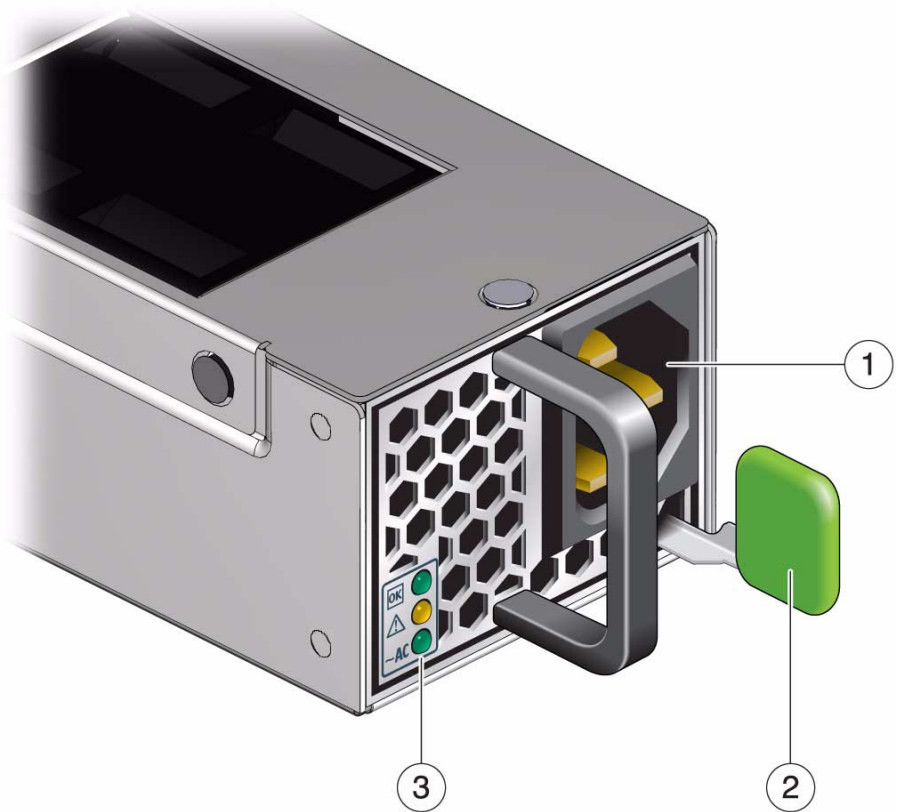
- [“Inspecting a Fan” on page 17](#)
- [“Inspecting the Data Cables” on page 25](#)

▼ Identify the Power Supply

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

See [“Inspecting a Power Supply” on page 5](#).

2. **Use this illustration to identify the various features of a power supply.**



1	AC connector
2	Release tab
3	Status LEDs

3. Inspect the power supply hardware.

See [“Inspect the Power Supply Hardware”](#) on page 8.

Related Information

- [“Identify the Fan”](#) on page 18
- [“Identify the Data Cable”](#) on page 26

▼ Inspect the Power Supply Hardware

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

See [“Inspecting a Power Supply” on page 5](#).

2. Unwrap the replacement power supply from its antistatic packaging.
3. Verify that there is no visible damage to the power supply chassis.
4. Verify that the release tab moves freely and smoothly.
5. Inspect the power supply connectors.
See [“Inspect the Power Supply Connectors” on page 8](#).

Related Information

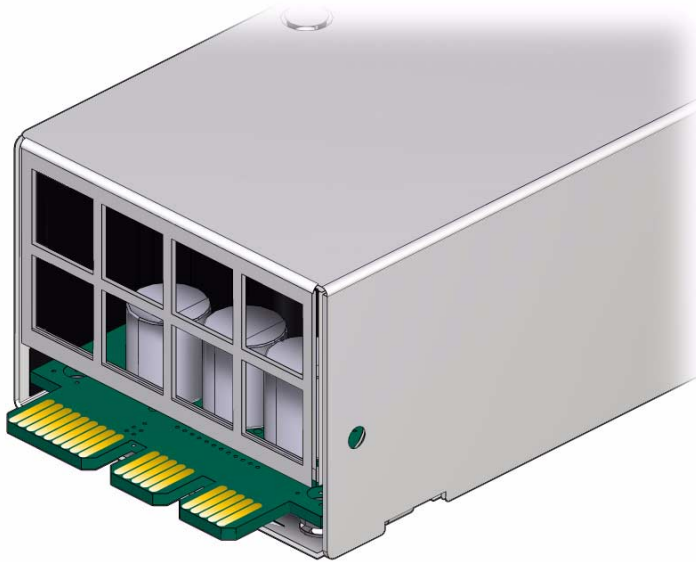
- [“Inspect the Fan Hardware” on page 19](#)
- [“Inspect the Data Cable Hardware” on page 27](#)

▼ Inspect the Power Supply Connectors

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

See [“Inspecting a Power Supply” on page 5](#).

2. Verify that the connectors are clean and without damage.



3. The power supply is ready for installation.

See [“Install a Power Supply” on page 12.](#)

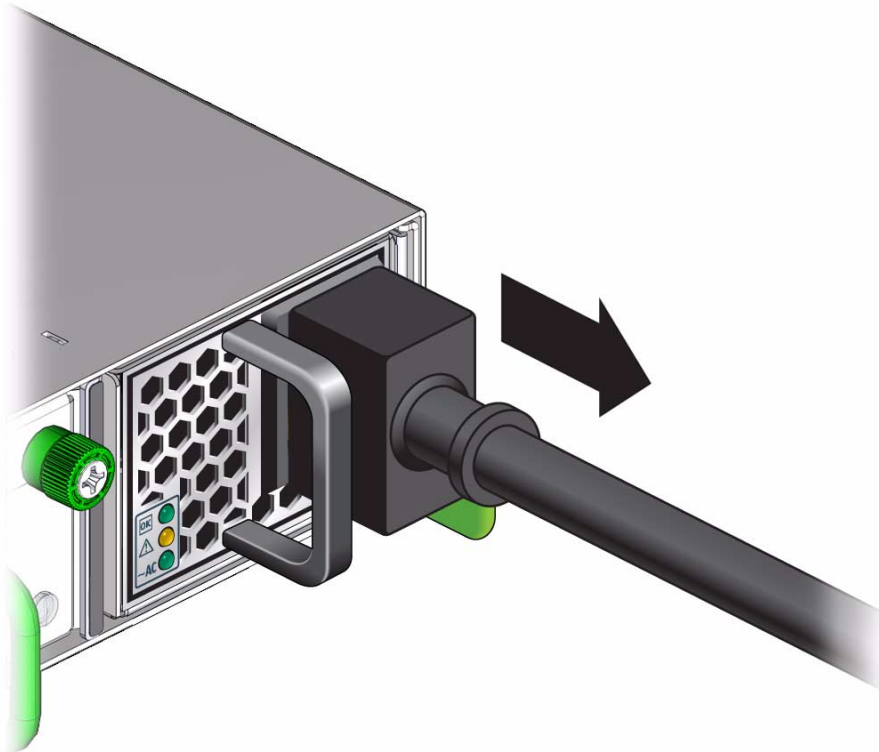
Related Information

- [“Inspect the Fan Connector” on page 19](#)
- [“Inspect the Data Cable Connectors or Transceivers” on page 27](#)

▼ Power Off a Power Supply

Note – Powering off both power supplies powers off the gateway.

1. Identify the prerequisite and subsequent service tasks you must perform in conjunction with this procedure.
See [“Servicing Power Supplies” on page 5.](#)
2. Determine which power supply is to be removed.
3. At the front of the gateway chassis, remove the power cord from the respective power supply.



The power supply is completely powered off.

4. Remove the power supply.

See [“Remove a Power Supply” on page 10.](#)

Related Information

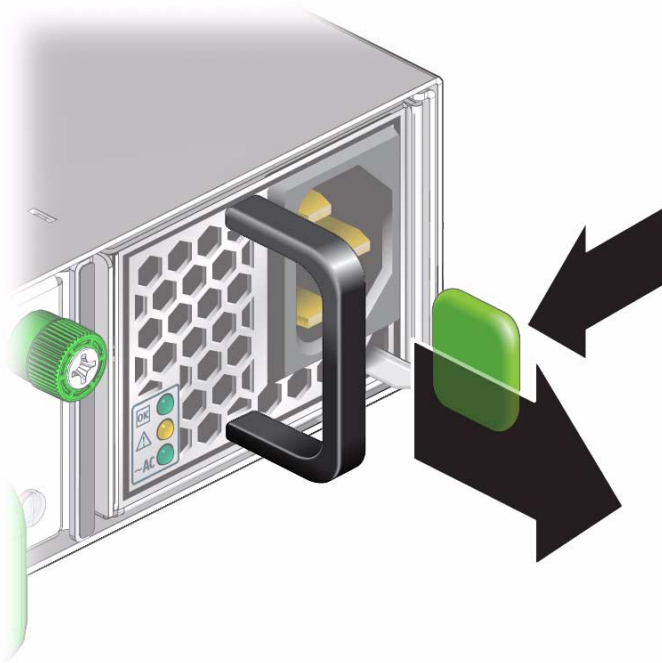
- [“Power On a Power Supply” on page 14](#)

▼ Remove a Power Supply

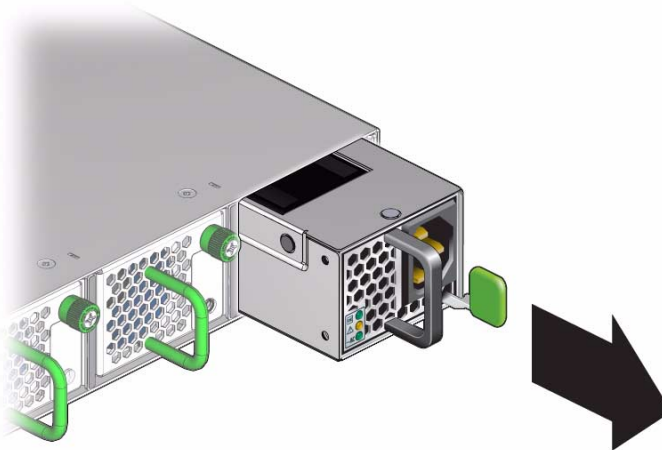
1. Identify the prerequisite and subsequent service tasks you must perform in conjunction with this procedure.

See [“Servicing Power Supplies” on page 5.](#)

2. Locate the power supply to be removed.
3. Press and hold the release tab to the left and pull on the handle of the power supply.



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



5. Set the power supply aside.

6. Install a replacement power supply.

See [“Install a Power Supply” on page 12.](#)

Related Information

- [“Remove a Fan” on page 20](#)
- [“Remove a Data Cable” on page 28](#)
- [“Remove the Gateway From the Rack” on page 38](#)
- [“Replace the Battery” on page 38](#)

▼ Install a Power Supply

Note – For residual power discharge, the power supply slot must remain vacant for at least one minute before installing a power supply.

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

See [“Servicing Power Supplies” on page 5.](#)

2. Inspect the replacement power supply.

See [“Inspecting a Power Supply” on page 5.](#)

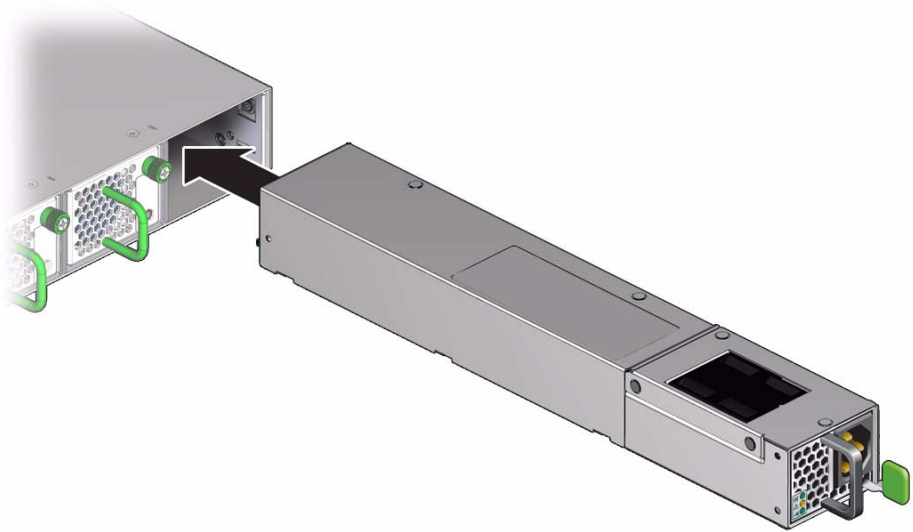
3. Verify that the slot where the power supply installs is clean and free of debris.

4. Verify that the slot connector pins are straight and not missing.

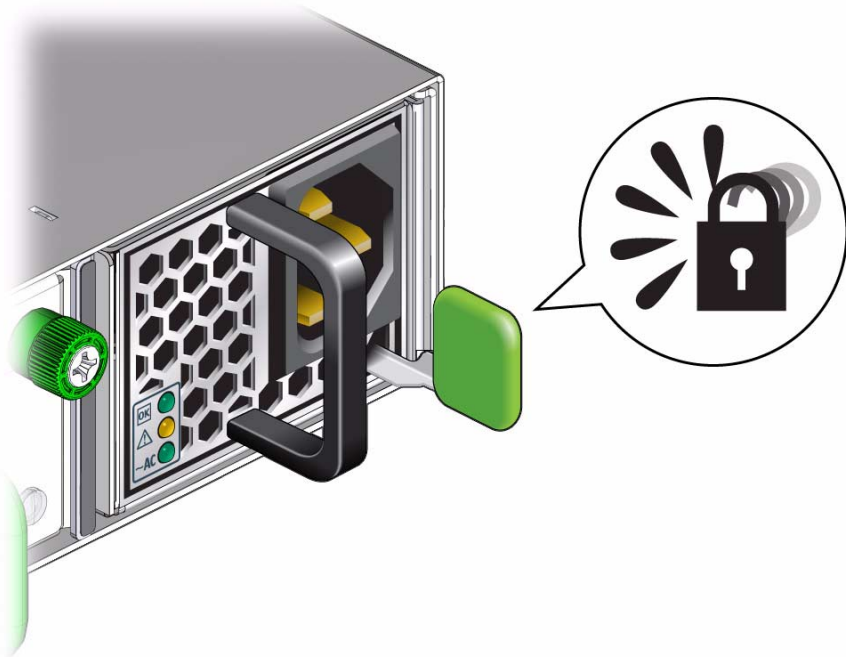
5. Verify that the slot connector receptacles are free from obstructions.

6. Orient the power supply to the opening in the gateway chassis with the status LEDs on the left and the release tab on the right.

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



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



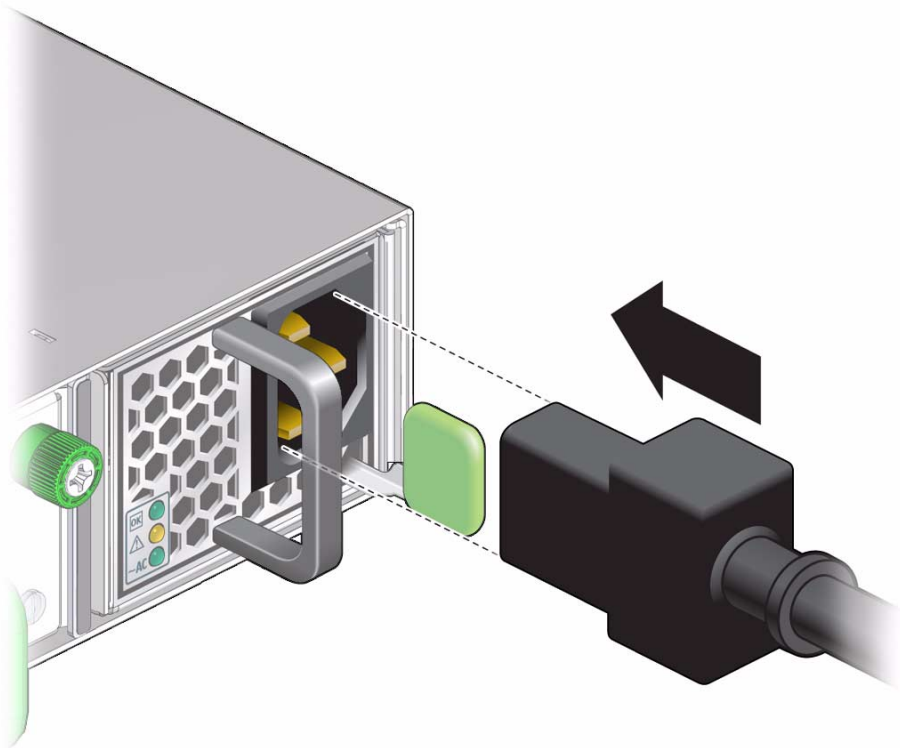
9. Power on the power supply.
See [“Power On a Power Supply”](#) on page 14.

Related Information

- [“Install a Fan” on page 22](#)
- [“Install a Data Cable” on page 33](#)
- [“Replace the Battery” on page 38](#)

▼ **Power On a Power Supply**

1. For residual power discharge, the power cord must remain unattached to the power supply for at least one minute before powering on a power supply.
2. Identify the prerequisite and subsequent service tasks you must perform in conjunction with this procedure.
[See “Servicing Power Supplies” on page 5.](#)
3. 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.

4. Verify the power supply's operation with the `checkpower` and `checkvoltages` commands on the management controller.

For example, to check the power supplies:

```
# checkpower  
PSU 0 present status: OK  
PSU 1 present status: OK  
All PSUs OK  
#
```

```
# checkvoltages  
Voltage ECB OK  
Measured 3.3V Main = 3.30 V  
Measured 3.3V Standby = 3.42 V
```

```
Measured 12V = 12.06 V
Measured 5V = 5.03 V
Measured VBAT = 3.17 V
Measured 1.0V = 1.01 V
Measured I4 1.2V = 1.22 V
Measured 2.5V = 2.51 V
Measured V1P2 DIG = 1.18 V
Measured V1P2 ANG = 1.18 V
Measured 1.2V BridgeX = 1.22 V
Measured 1.8V = 1.80 V
Measured 1.2V Standby = 1.20 V
All voltages OK
#
```

Related Information

- *Gateway Reference*, checkpower command
- *Gateway Reference*, checkvoltages command
- [“Power Off a Power Supply” on page 9](#)

Servicing Fans

These topics provide procedures for servicing the fans.

Description	Links
Add a fan.	“Inspecting a Fan” on page 17 “Install a Fan” on page 22
Replace a fan.	“Inspecting a Fan” on page 17 “Remove a Fan” on page 20 “Install a Fan” on page 22
Subtract a fan.	“Remove a Fan” on page 20

Related Information

- [“Understanding Service Procedures” on page 1](#)
- [“Servicing Power Supplies” on page 5](#)
- [“Servicing Data Cables” on page 25](#)
- [“Servicing the Battery” on page 37](#)

Inspecting a Fan

Before installing a fan, inspect its hardware and connector to verify its suitability for installation.

Step	Description	Links
1.	Identify the fan.	“Identify the Fan” on page 18
2.	Inspect the hardware.	“Inspect the Fan Hardware” on page 19
3.	Inspect the connector.	“Inspect the Fan Connector” on page 19

Related Information

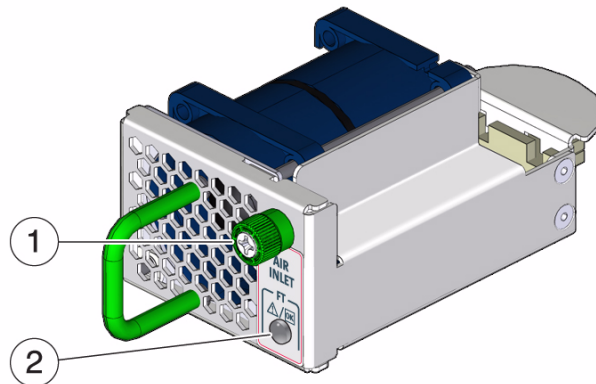
- [“Inspecting a Power Supply” on page 5](#)
- [“Inspecting the Data Cables” on page 25](#)

▼ Identify the Fan

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

See [“Inspecting a Fan” on page 17](#).

2. Use this illustration to identify the various features of a fan.



1	Thumbscrew
2	Status LED

3. Inspect the fan hardware.

See [“Inspect the Fan Hardware” on page 19](#).

Related Information

- [“Identify the Power Supply” on page 6](#)
- [“Identify the Data Cable” on page 26](#)

▼ Inspect the Fan Hardware

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

See [“Inspecting a Fan” on page 17](#).

2. Unwrap the replacement fan from its antistatic packaging.
3. Verify that there is no visible damage to the fan chassis.
4. Verify that the thumbscrew spins freely and smoothly.
5. Inspect the fan connector.

See [“Inspect the Fan Connector” on page 19](#).

Related Information

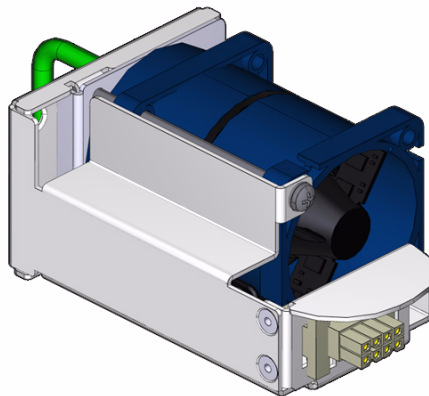
- [“Inspect the Power Supply Hardware” on page 8](#)
- [“Inspect the Data Cable Hardware” on page 27](#)

▼ Inspect the Fan Connector

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

See [“Inspecting a Fan” on page 17](#).

2. Verify that the connector is clean and without damage.
3. Verify that the connector receptacles are free from obstructions.



4. Verify that the connector freely floats in its mounting.

5. The fan is ready for installation.

See [“Install a Fan” on page 22](#).

Related Information

- [“Inspect the Power Supply Connectors” on page 8](#)
- [“Inspect the Data Cable Connectors or Transceivers” on page 27](#)

▼ Remove a Fan

Note – Fans are hot-swappable and do not require powering off. Additionally, if there are fewer than two operational fans, the gateway shuts down to prevent thermal overload.

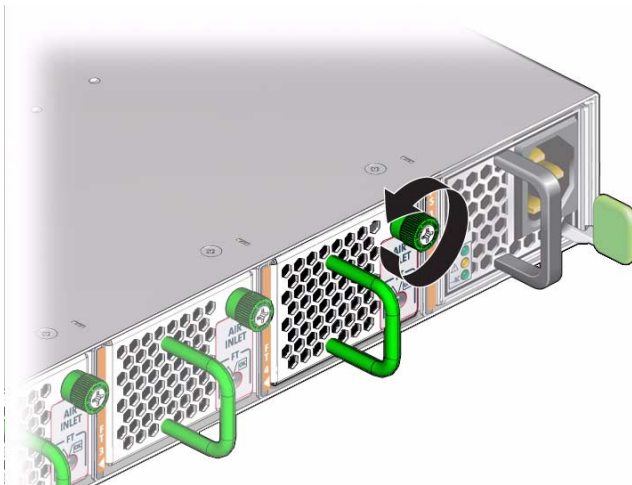
1. Identify the prerequisite and subsequent service tasks you must perform in conjunction with this procedure.

See [“Servicing Fans” on page 17](#).

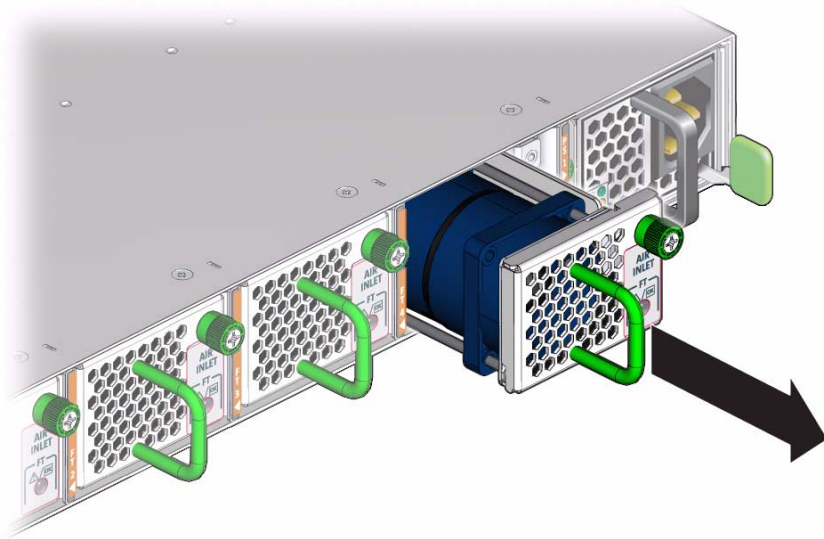
2. Determine which fan is to be removed.

If a fan has failed, its Attention LED lights.

3. Loosen the captive thumbscrew at the right side of the fan.



4. Grasp the handle and pull the fan straight out.



5. Set the fan aside.

6. Consider your next steps:

- If you are removing the fan for replacement, install a new fan.
See [“Install a Fan” on page 22](#).
- If you are removing the fan as a subtractive action, you are finished.

Related Information

- [“Remove a Power Supply” on page 10](#)
- [“Remove a Data Cable” on page 28](#)
- [“Remove the Gateway From the Rack” on page 38](#)
- [“Replace the Battery” on page 38](#)

▼ Install a Fan

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

See [“Servicing Fans” on page 17](#).

2. Inspect the replacement fan.

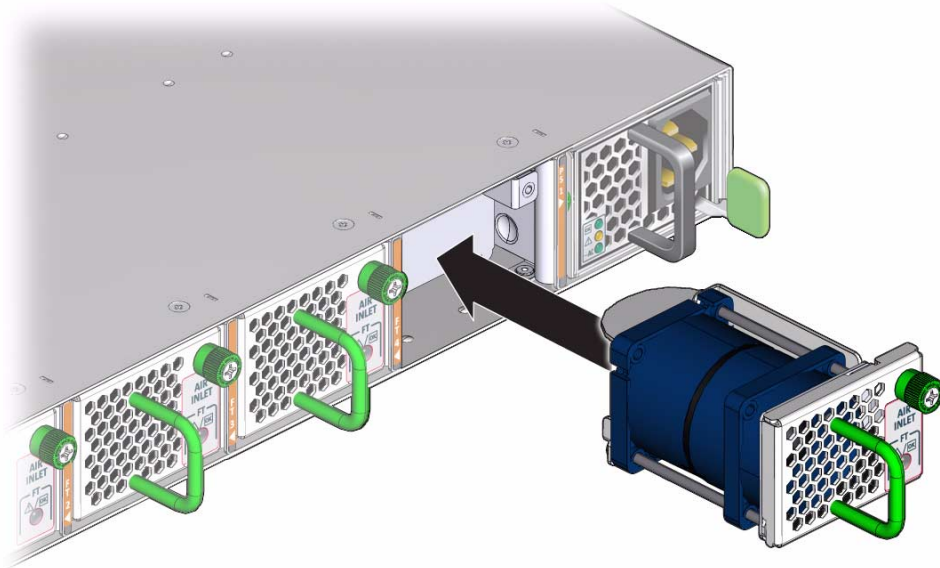
See [“Inspecting a Fan”](#) on page 17.

3. Verify that the slot where the fan installs is clean and free of debris.

4. Verify that the slot connector pins are straight and not missing.

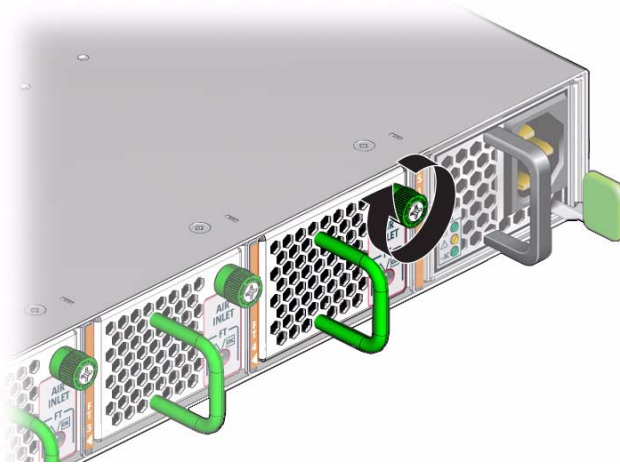
5. Orient the fan to the opening in the gateway chassis with the thumbscrew on the right.

6. Firmly slide the fan into the chassis until the fan stops.



The fan might immediately power on.

7. Tighten the captive thumbscrew to secure the fan in the gateway chassis.



8. Verify that the fan Attention LED goes out.
9. Use the `getfanspeed` command on the management controller to verify the fan's operation.

Note – You should see a fan speed for the fan you just installed.

For example, to check the fans:

```
# getfanspeed
Fan 0 not present
Fan 1 running at rpm 11212
Fan 2 running at rpm 11313
Fan 3 running at rpm 11521
Fan 4 not present
#
```

Related Information

- *Gateway Reference*, `getfanspeed` command
- [“Install a Power Supply” on page 12](#)
- [“Install a Data Cable” on page 33](#)
- [“Replace the Battery” on page 38](#)

Servicing Data Cables

These topics provide procedures for servicing the data cables.

Description	Links
Add a data cable.	“Inspecting the Data Cables” on page 25 “Install a Data Cable” on page 33
Replace a data cable.	“Inspecting the Data Cables” on page 25 “Remove a Data Cable” on page 28 “Install a Data Cable” on page 33
Subtract a data cable.	“Remove a Data Cable” on page 28

Related Information

- [“Understanding Service Procedures” on page 1](#)
- [“Servicing Power Supplies” on page 5](#)
- [“Servicing Fans” on page 17](#)
- [“Servicing the Battery” on page 37](#)

Inspecting the Data Cables

Before installing a data cable, inspect its hardware and connectors to verify its suitability for installation.

Step	Description	Links
1.	Identify the cable.	“Identify the Data Cable” on page 26
2.	Inspect the hardware.	“Inspect the Data Cable Hardware” on page 27

Step	Description	Links
3.	Inspect the connectors	“Inspect the Data Cable Connectors or Transceivers” on page 27

Related Information

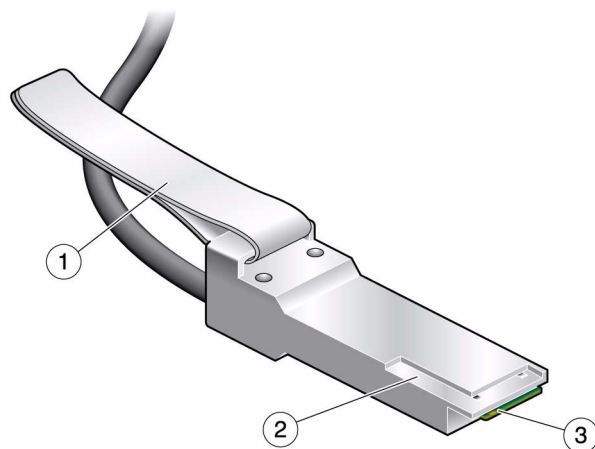
- [“Inspecting a Power Supply” on page 5](#)
- [“Inspecting a Fan” on page 17](#)

▼ Identify the Data Cable

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

See [“Inspecting the Data Cables” on page 25](#).

2. Use this illustration to identify the various features of the data cable.



1	Retraction strap
2	L groove
3	Paddle board

3. Inspect the data cable hardware.

See [“Inspect the Data Cable Hardware” on page 27](#).

Related Information

- [“Identify the Power Supply” on page 6](#)
- [“Identify the Fan” on page 18](#)

▼ **Inspect the Data Cable Hardware**

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

See [“Inspecting the Data Cables” on page 25](#).

2. Verify that the cable is not cut or damaged.
3. Verify that the cable is not kinked or has a fold.
4. Verify that the cable is of the correct type from its label.
5. Inspect the cable connectors or transceivers.

See [“Inspect the Data Cable Connectors or Transceivers” on page 27](#).

Related Information

- [“Inspect the Power Supply Hardware” on page 8](#)
- [“Inspect the Fan Hardware” on page 19](#)

▼ **Inspect the Data Cable Connectors or Transceivers**

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

See [“Inspecting the Data Cables” on page 25](#).

2. Verify that the shell is not bent and is parallel to the inner boards.
3. Verify that there are no contaminants inside of the connector or transceiver.
4. Verify that the retractor strap or latch is adequate to remove the connector or transceiver from the receptacle.
5. Identify the reference surface by the L groove in the surface at the connector tip.
6. The cable or transceiver is ready for installation.

See [“Install a Data Cable” on page 33](#).

Related Information

- [“Inspect the Power Supply Connectors” on page 8](#)
- [“Inspect the Fan Connector” on page 19](#)

▼ Remove a Data Cable

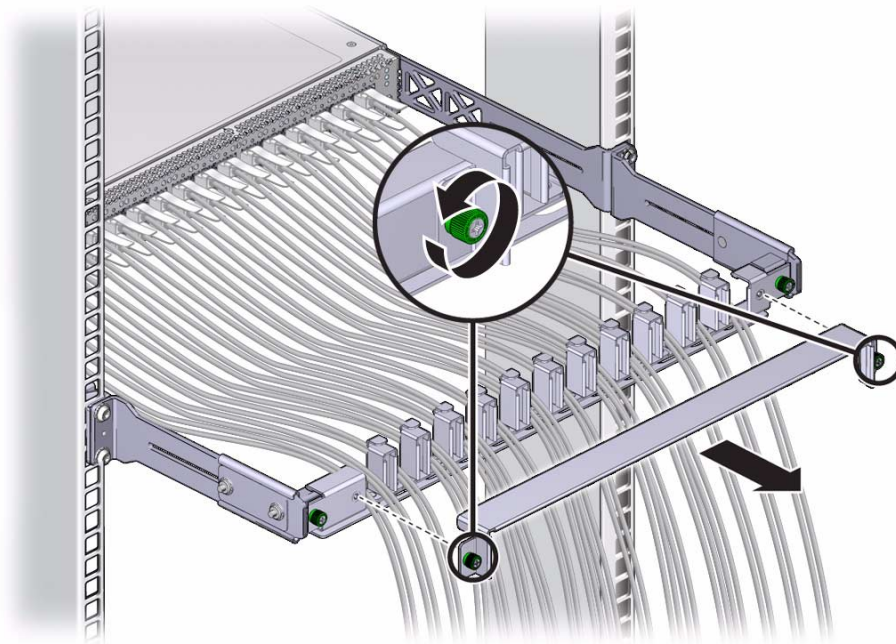
This procedure describes how to remove the cables from the gateway chassis, so that the cable can be replaced. If you are removing all cables for gateway replacement, start removing the cables from the left side of the gateway, working your way to the right.

Note – These instructions are valid for both InfiniBand data cables and pre-assembled Ethernet splitter data cables.

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

See [“Servicing Data Cables” on page 25](#).

2. **Loosen the thumbscrews and remove the cover for the cable management bracket.**



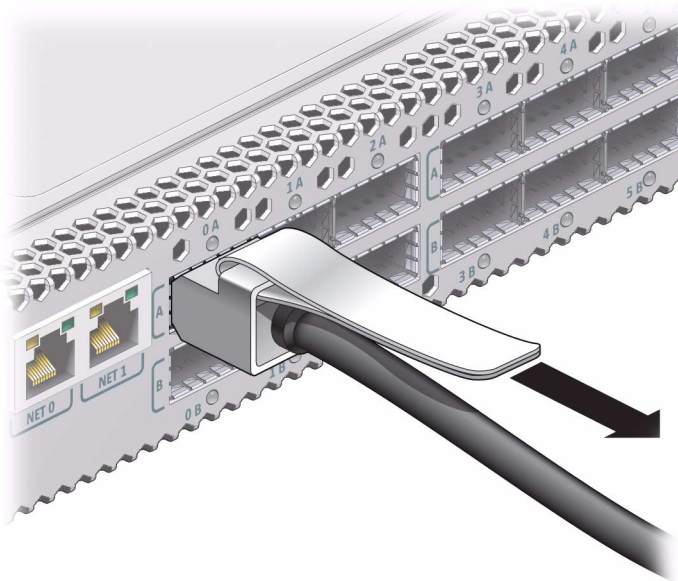
3. Locate the cable to be removed.

4. Consider your next steps:

■ If the cable is an InfiniBand data cable, follow these steps:

- a. Grasp the cable connector to support its weight and apply the removal force.
- b. Pull on the retractor strap while simultaneously pulling on the cable connector.

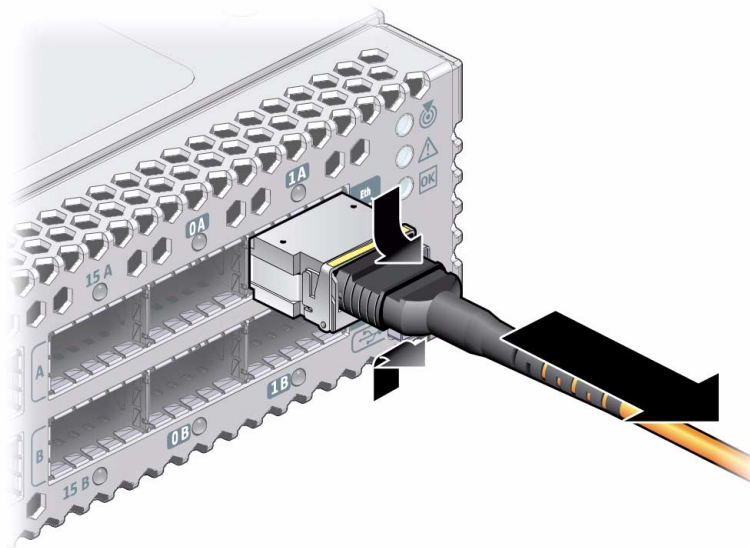
The cable connector comes free.



c. Carefully move the cable out of the cable management hardware.

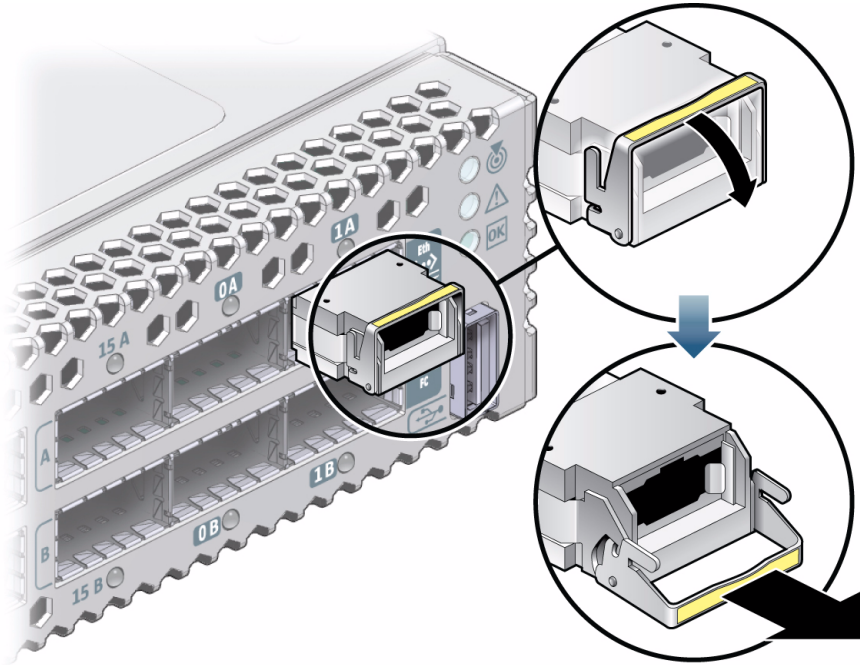
d. Continue to [Step 5](#).

- If the cable is an Ethernet splitter data cable, follow these steps:
 - a. Grasp the release collar on the MTP connector and pull back.



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

- b. Carefully move the fiber optic cable out of the cable management hardware.
- c. Release the latch on the QSFP transceiver and pull on the latch to remove the transceiver.



The transceiver comes free.

- d. Set the transceiver aside.
 - e. Continue to [Step 5](#).
5. Open hook-and-loop fasteners from bundles and securing hard points to gently lower the cable to the floor.



Caution – Do not allow the cable or transceiver to drop or strike the floor. Jerking, bending, pulling on, or dropping the cable can damage the cable.

6. Consider your next steps:

- If you are removing a single cable for replacement, install the new cable.
See [“Install a Data Cable” on page 33](#).

- If you are disconnecting all cables for gateway replacement, repeat from [Step 4](#) for all cables.

Related Information

- “Remove a Power Supply” on page 10
- “Remove a Fan” on page 20
- “Remove the Gateway From the Rack” on page 38
- “Replace the Battery” on page 38

▼ Install a Data Cable

Note – These instructions are valid for both InfiniBand data cables and *pre-assembled* Ethernet splitter data cables. See *Gateway Installation*, assembling the Ethernet splitter data cables, for instructions how to assemble Ethernet splitter data cables.

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

See “[Servicing Data Cables](#)” on page 25.

2. Determine your next steps:

- If you are cabling an entire gateway after a replacement procedure, locate the cable for the connector 0B and go to [Step 5](#).
- If you are installing a replacement cable to the gateway, start the procedure at [Step 3](#).

3. Inspect the replacement data cable.

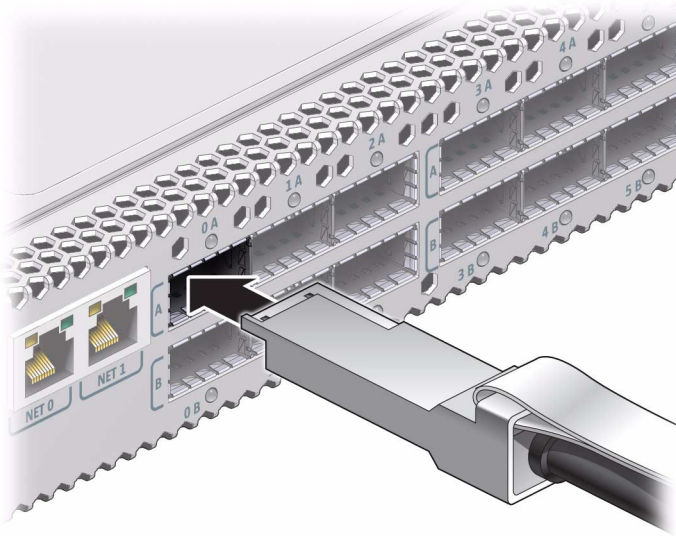
See “[Inspecting the Data Cables](#)” on page 25.

4. Bring the replacement cable to the gateway.

5. Feed the cable through the cable management hardware.

6. Orient the cable connector to the QSFP receptacle squarely and horizontally.

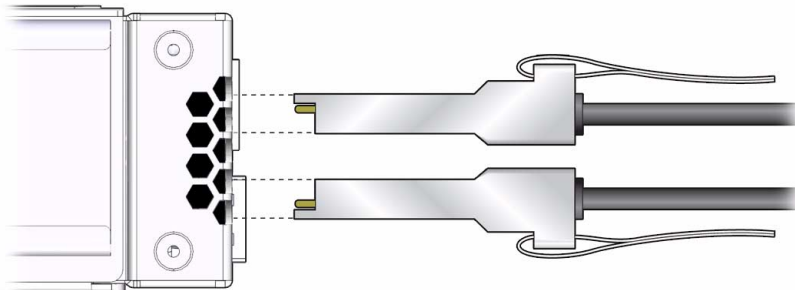
Ensure that the L groove is up for the top row of receptacles, or that the L groove is down for the bottom row of receptacles.



Note – On some QSFP cable connectors, there is a retraction strap. Both the retraction strap and L groove indicate the reference surface for the connector. When installing QSFP cables in the top row receptacles (0A, 1A, 2A, and so on), ensure that the L groove and retraction strap are up. When installing QSFP cables in the bottom row receptacles (0B, 1B, 2B, and so on) ensure that the L groove and retraction strap are down. See [“Identify the Data Cable” on page 26](#).

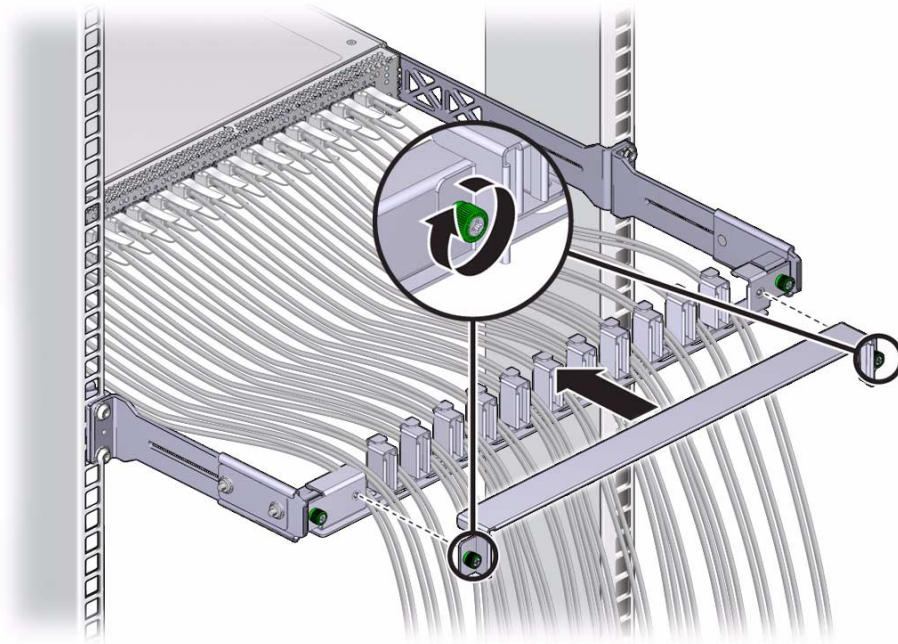
7. Slowly move the connector in.

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



- If the connector stops or binds after about 1/4 in. (5 mm) travel, back out and repeat from [Step 6](#).

- If the connector stops or binds with about 1/8 in. (2 mm) still to go, back out and repeat [Step 7](#).
8. **Continue to push the connector in until you feel a detent.**
 9. **Secure the cable into the cable management hardware.**
Close hook-and-loop fasteners at bundles and securing hard points.
 10. **If you are installing all cables as part of a gateway replacement procedure, repeat from [Step 5](#) for all cables, including the Ethernet splitter data cables at connectors 0A and 1A on the right side of the rear panel.**
 11. **Replace the cover for the cable management bracket and tighten the thumbscrews.**



Related Information

- [“Install a Power Supply” on page 12](#)
- [“Install a Fan” on page 22](#)
- [“Replace the Battery” on page 38](#)

Servicing the Battery

The Sun Network QDR InfiniBand Gateway Switch has a battery on the main board that supports the management controller. You can only replace the battery because the management controller is dependent upon the battery. You cannot add or subtract the battery. Perform these tasks in order to replace the battery:

Step	Description	Links
1.	Remove all data cables.	“Remove a Data Cable” on page 28
2.	Power off both power supplies.	“Power Off a Power Supply” on page 9
3.	Remove the gateway from the rack.	“Remove the Gateway From the Rack” on page 38
4.	Replace the battery.	“Replace the Battery” on page 38
5.	Install the gateway in the rack.	<i>Gateway Installation</i> , installing the gateway

Related Information

- [“Understanding Service Procedures” on page 1](#)
- [“Servicing Power Supplies” on page 5](#)
- [“Servicing Fans” on page 17](#)
- [“Servicing Data Cables” on page 25](#)

▼ Remove the Gateway From the Rack

Note – This procedure assumes that you have removed all data cables from the gateway and have powered down both power supplies by removing both power cords. If not, see [“Remove a Data Cable” on page 28](#) and [“Power Off a Power Supply” on page 9](#).

1. Identify the prerequisite and subsequent service tasks you must perform in conjunction with this procedure.
See [“Servicing the Battery” on page 37](#).
2. Disconnect the management cables.
3. Use a No. 2 Phillips screwdriver to remove the four screws that secure the front of the gateway into the rack.
4. Slide the gateway out of the front of the rack.
5. Set the gateway chassis onto a stable work surface.

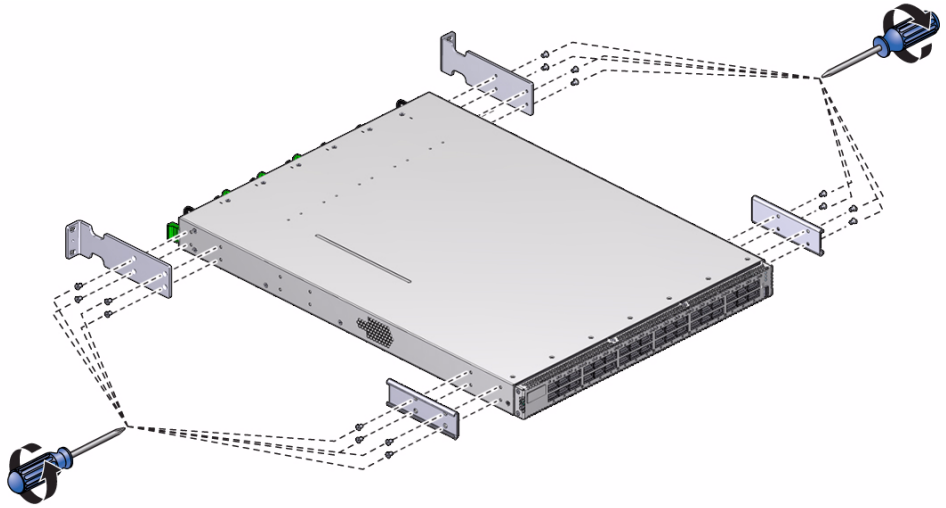
Related Information

- *Gateway Installation*, installing the gateway into the rack
- [“Remove a Power Supply” on page 10](#)
- [“Remove a Fan” on page 20](#)
- [“Remove a Data Cable” on page 28](#)
- [“Replace the Battery” on page 38](#)

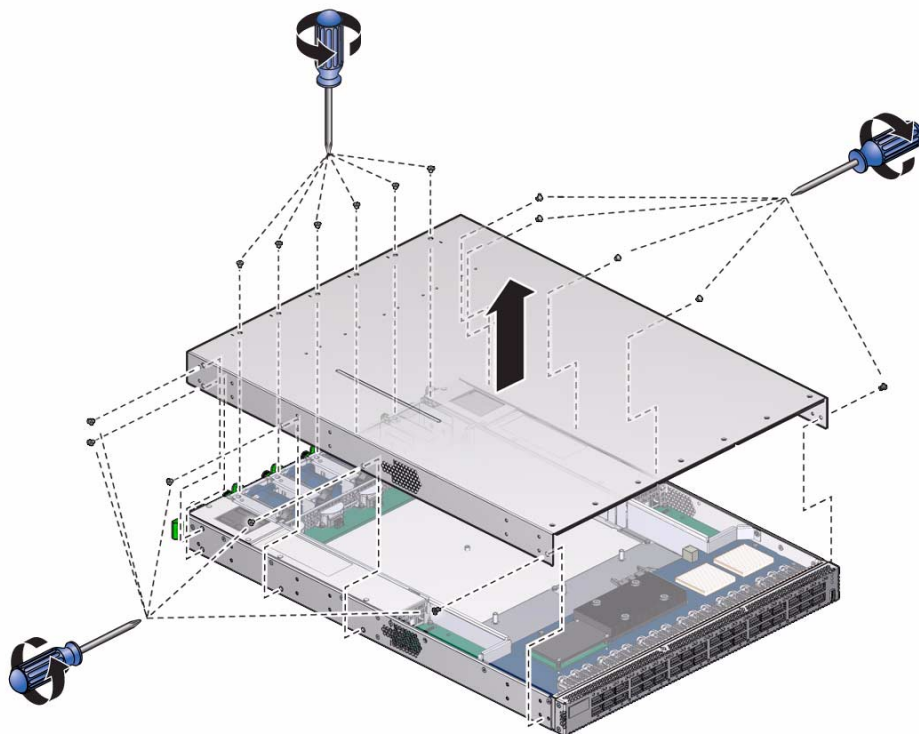
▼ Replace the Battery

Note – This procedure assumes that you have removed the gateway from the rack. If not, see [“Remove the Gateway From the Rack” on page 38](#).

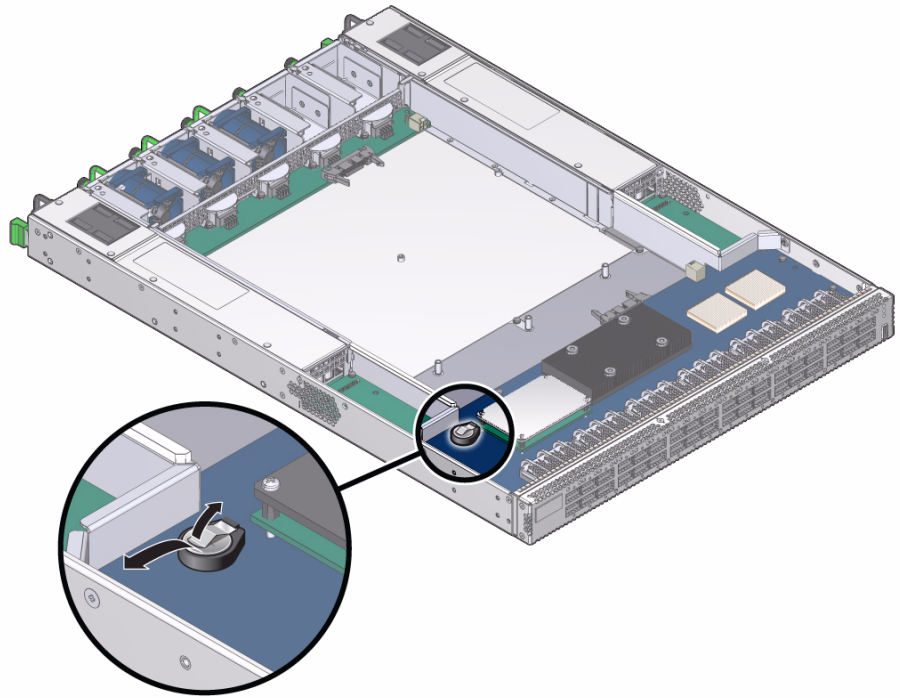
1. Identify the prerequisite and subsequent service tasks you must perform in conjunction with this procedure.
See [“Servicing the Battery” on page 37](#).
2. Use a No. 1 Phillips screwdriver to remove the eight screws that secure the C-shaped brackets at the rear sides of the gateway chassis.



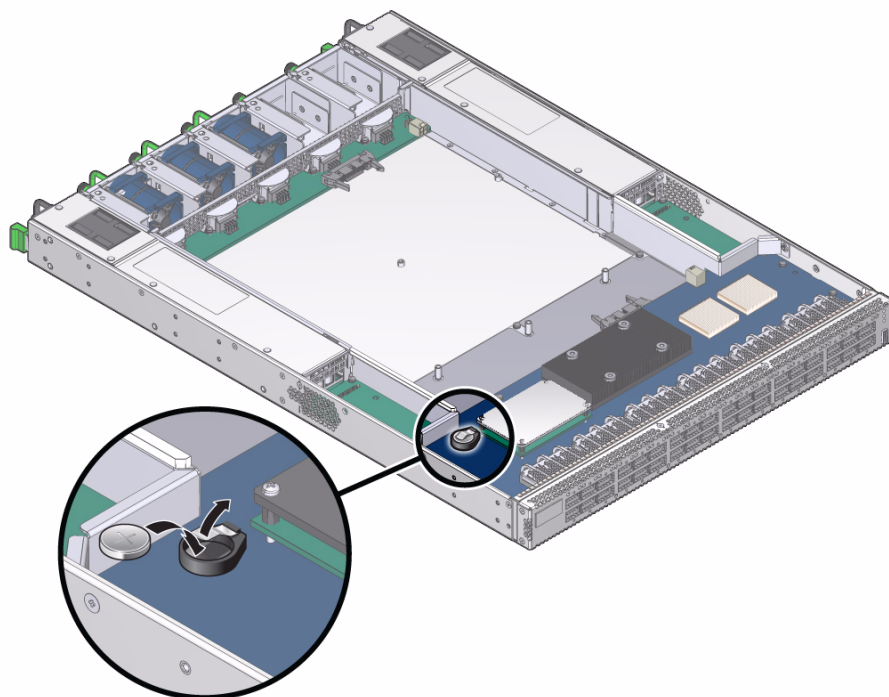
3. Remove the eight screws that secure the long front brackets at the front sides of the gateway chassis.
4. Remove the 16 screws that secure the top cover to the chassis.
There are five screws on each side and six screws across the top front of the cover.



5. Slide the cover forward and lift it off.
6. Depress the clip that retains the battery and release the battery from the main board.



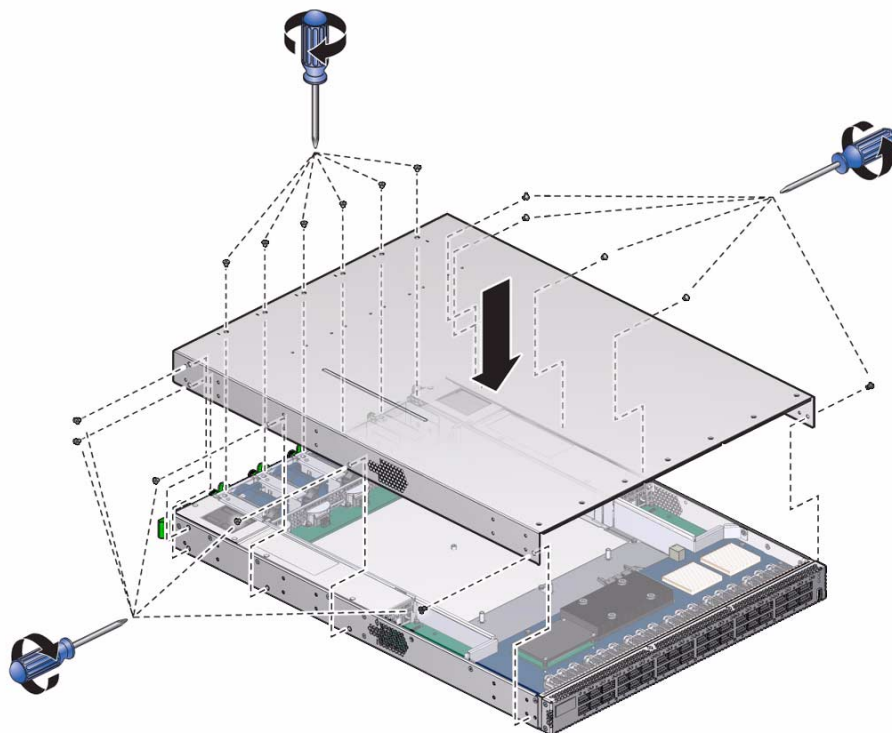
7. Properly dispose of the old battery.
8. Unwrap the replacement battery from its antistatic packaging.
9. Install the replacement battery into the main board with the + side up.



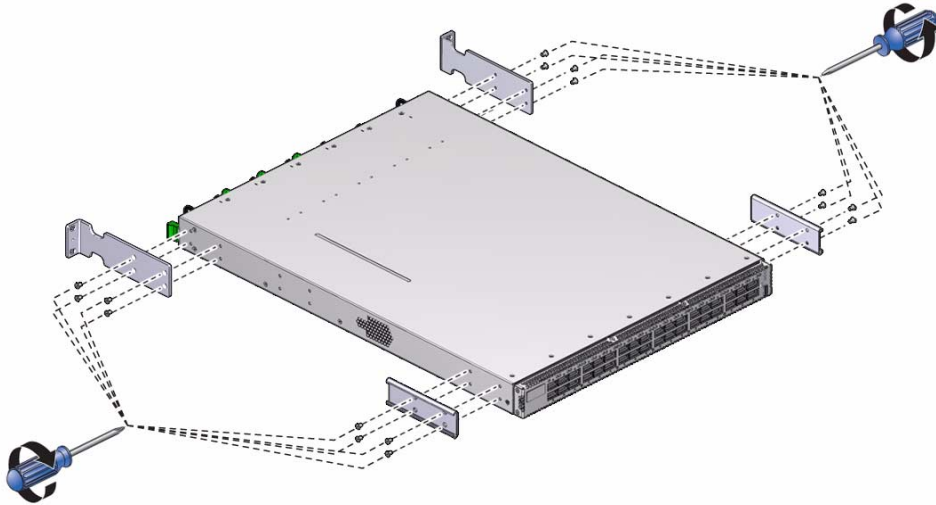
10. Orient the cover over the chassis and lower it in place.

11. Slide the cover rearward so that it engages at the rear panel.

Ensure that the screw holes in the cover align with the holes in the chassis.



12. Use a No. 1 Phillips screwdriver to install the 16 screws that secure the cover to the chassis.
13. Use eight screws to attach the two front brackets to the front sides of the chassis.



14. Use eight screws to attach the two C-shaped brackets to the rear sides of the chassis.

15. Install the gateway into the rack.

See *Gateway Installation*, installing the gateway into the rack.

Related Information

- [“Install a Power Supply” on page 12](#)
- [“Install a Fan” on page 22](#)
- [“Install a Data Cable” on page 33](#)

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