HPE ProLiant DL580 Gen8 Server - Parts Support Guide

Part Number: External
Published: 2020
Edition: 1

HPE ProLiant DL580 Gen8 Server - Parts Support Guide

Abstract
This document will help you identify parts of the product and also gives a step-by-step instruction on how to remove and replace the components.

Part Number: External
Published: 2020
Edition: 1

© Copyright 2020 Hewlett Packard Enterprise Development LP

Notices

The information contained herein is subject to change without notice. The only warranties for Hewlett Packard Enterprise products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. Hewlett Packard Enterprise shall not be liable for technical or editorial errors or omissions contained herein.

Confidential computer software. Valid license from Hewlett Packard Enterprise required for possession, use, or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

Links to third-party websites take you outside the Hewlett Packard Enterprise website. Hewlett Packard Enterprise has no control over and is not responsible for information outside the Hewlett Packard Enterprise website.

Acknowledgments

Intel®, Itanium®, Optane™, Pentium®, Xeon®, Intel Inside®, and the Intel Inside logo are trademarks of Intel Corporation in the U.S. and other countries.
Microsoft® and Windows® are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
Adobe® and Acrobat® are trademarks of Adobe Systems Incorporated.
Java® and Oracle® are registered trademarks of Oracle and/or its affiliates.
UNIX® is a registered trademark of The Open Group.
All third-party marks are property of their respective owners.

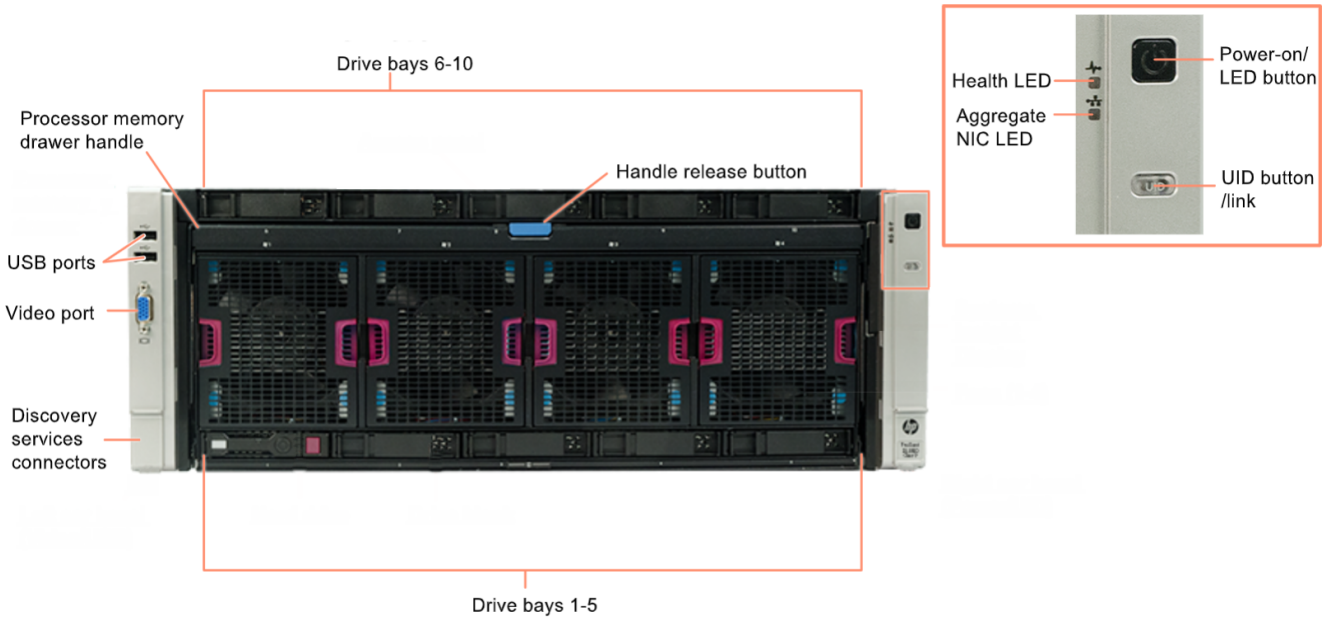
Table of contents

Part Locator
- Front view 5
  - Access panel 5
  - System Insight Display 6
  - Fans 7
  - Right ear bezel 8
  - Drive blank 8
  - Hard drive 9
  - Left ear bezel 10
  - Processor memory drawer 10
- Back view 11
  - Power supplies 12
  - Power supply blanks 12
- Left view 13
- Right view 13
- Internal view 1 14
  - ALOM fan 14
  - Daughter card 15
  - Power supply backplane 16
  - IO Board 16
  - SPI Board 17
  - Flexible LOM module 18
  - FBWC module 18
- Internal view 2 19
  - DIMMs 20
  - System board 20
  - Processor 21
  - Heatsink 22
  - Memory cartridge 23

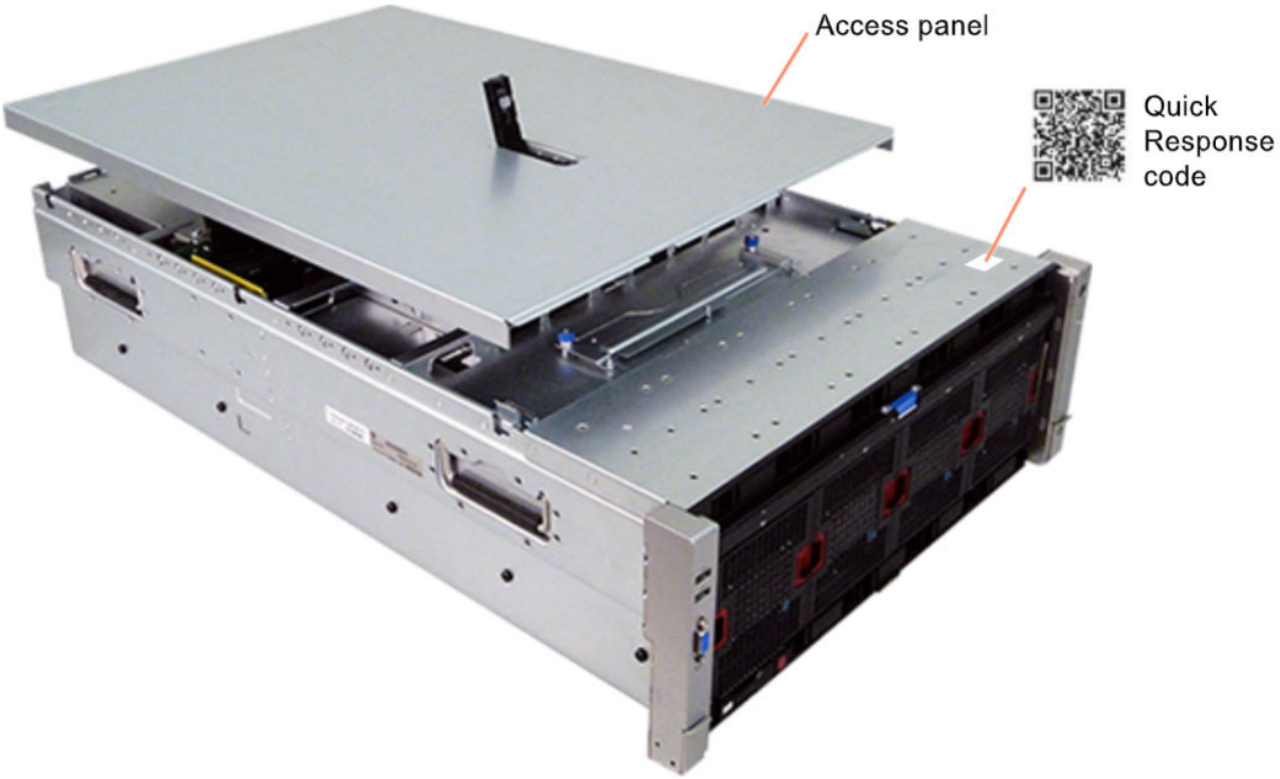
Remove/Replace
- References
  - Precautions 23
  - Tools And Materials 25
- Procedures

Powering Down The Server 25
Access Panel 25
Processor Memory Drawer And Memory Cover 26
Memory Cartridge And DIMMs 27
Hard Drive 29
Drive Blank 30
Fan 30
Hot-Plug Power Supply 31
FBWC And Capacitor Pack Holder 32
SPI Board 33
ALOM Fan 34
Flexible LOM 35
Expansion Board 36
I/O Board 36
Heatsink And Processor 38
Right Ear Bezel (UID/Power/SID) 39
Left Ear Bezel (USB/Video) 40
Daughter Card 41
Power Supply Backplane 42
System Board 43

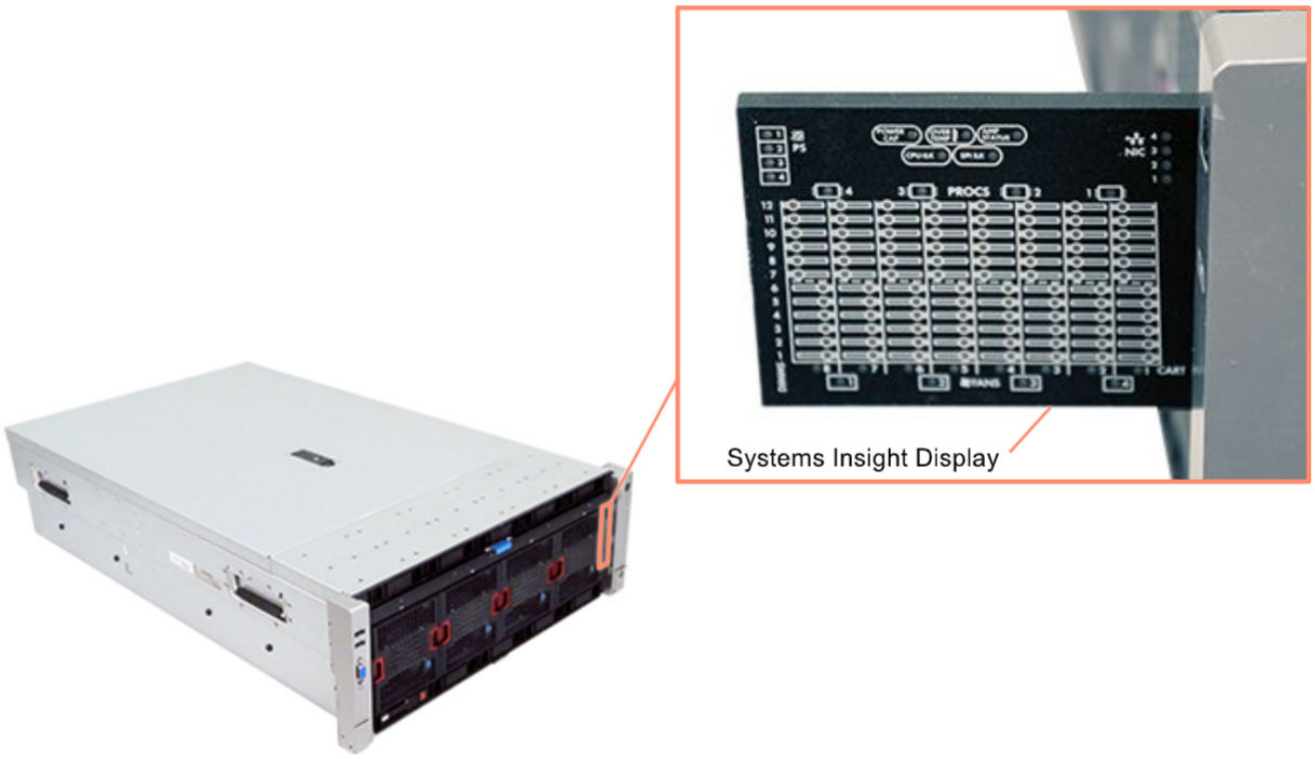
Front view



Access panel



System Insight Display



Fans



Right ear bezel



Drive blank



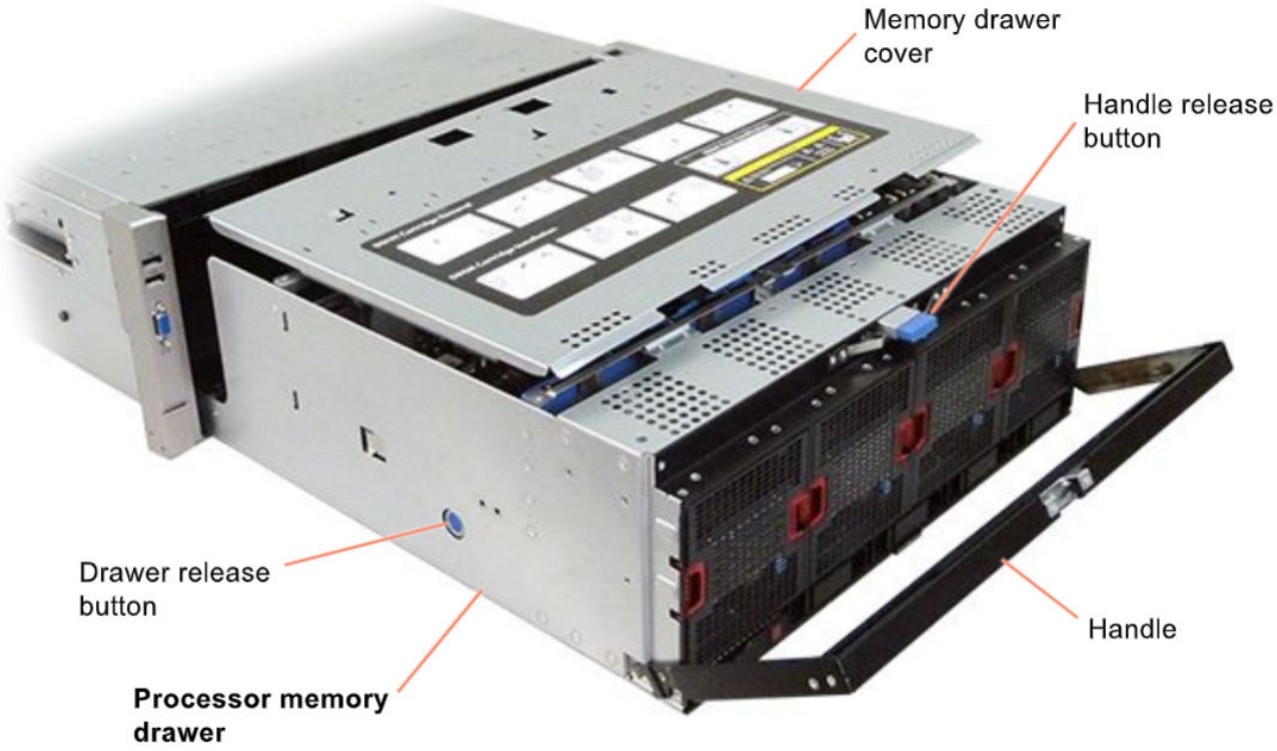
Hard drive



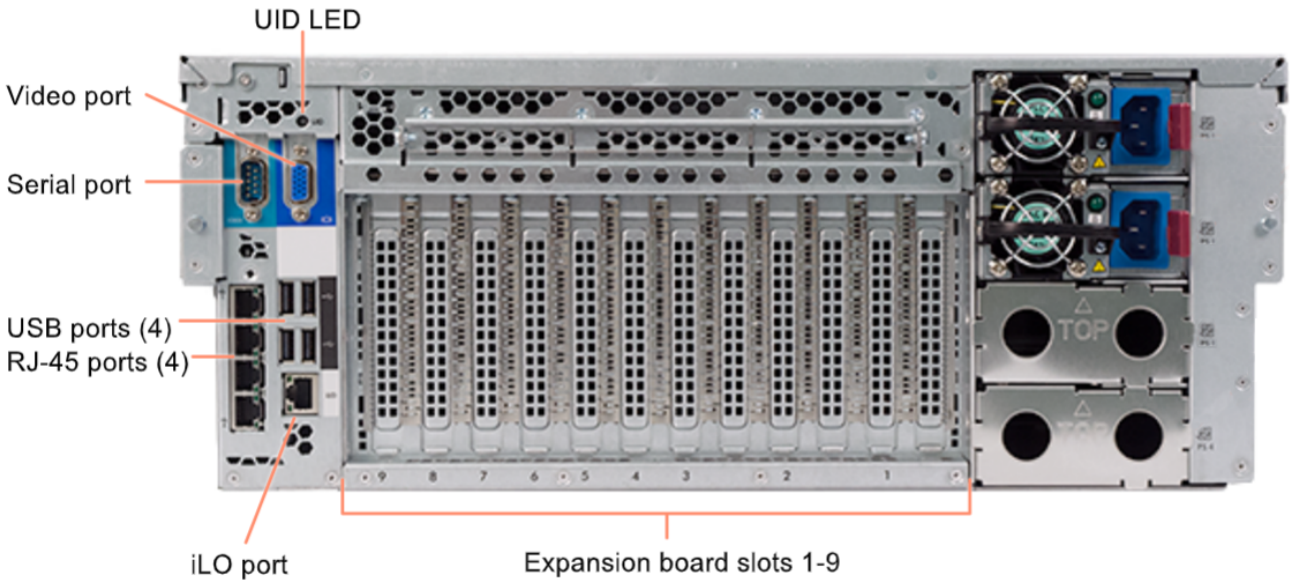
Left ear bezel



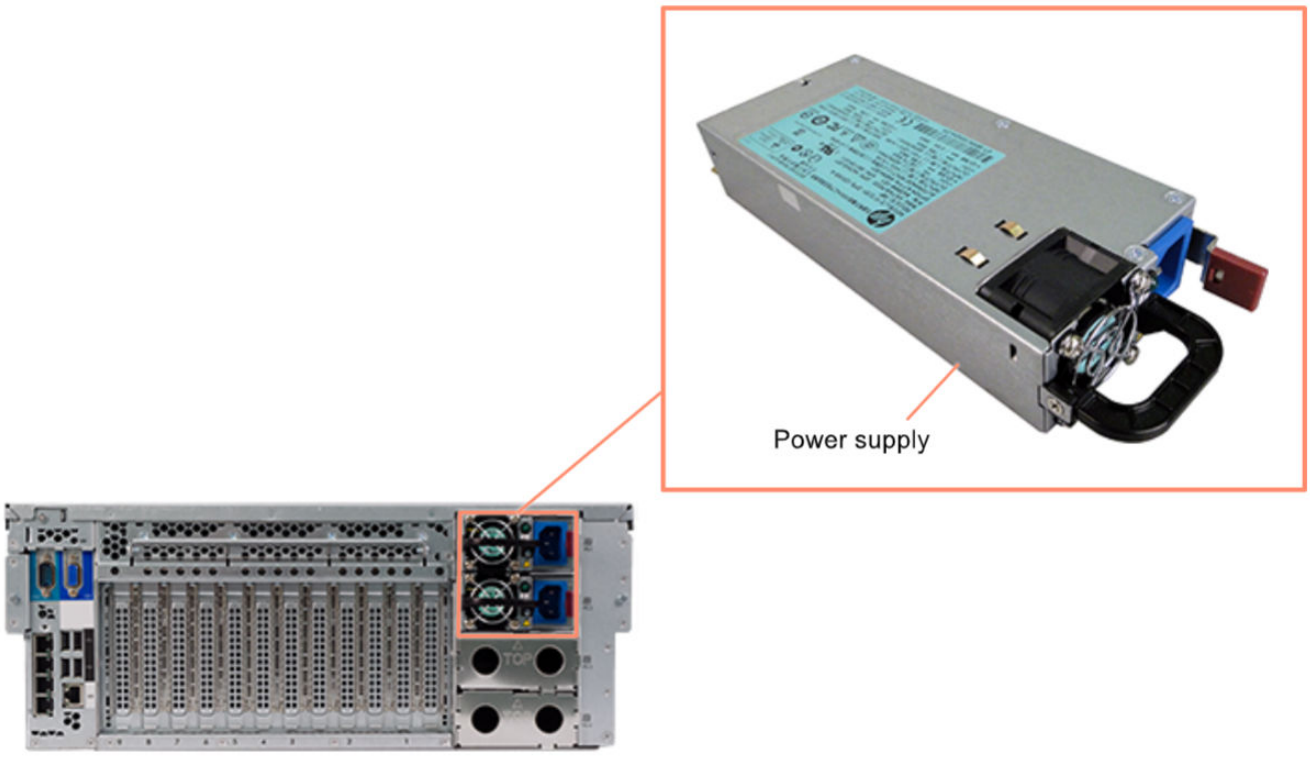
Processor memory drawer


Memory drawer cover
Handle release button
Drawer release button
Handle
Processor memory drawer

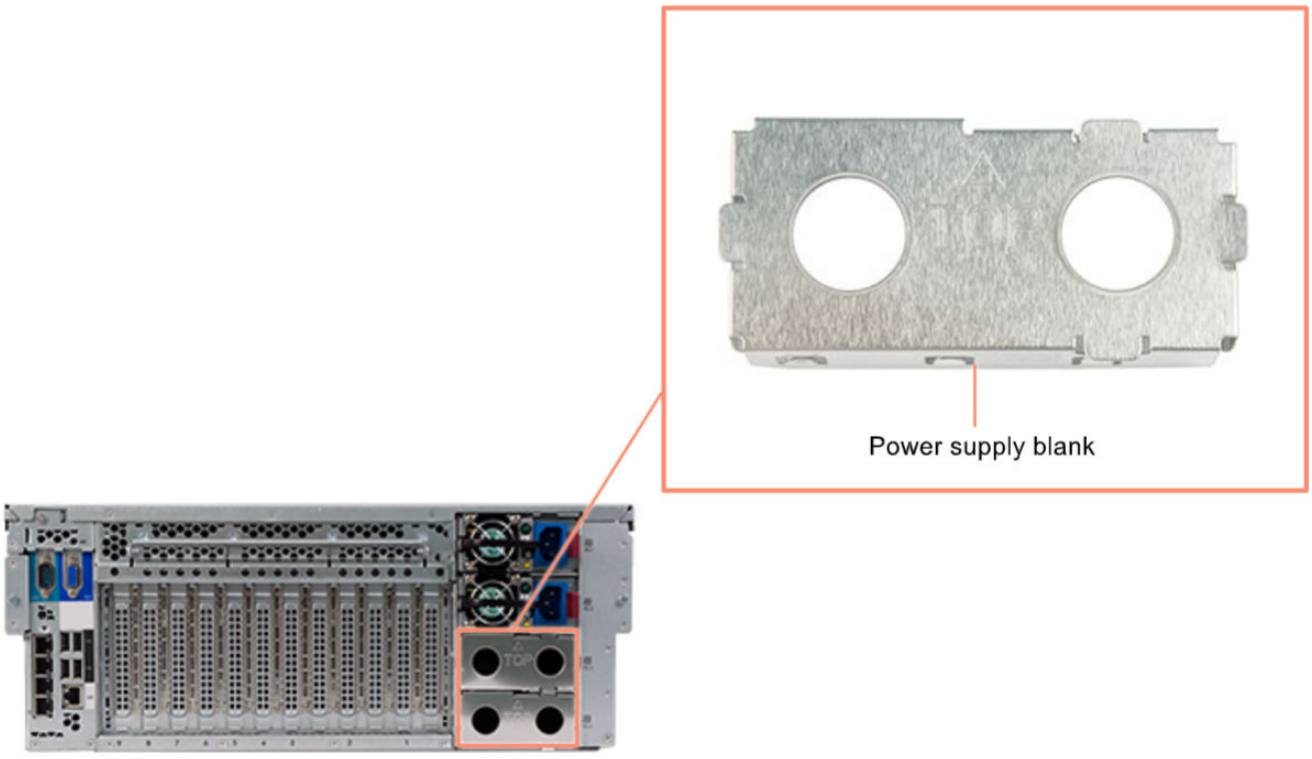
Back view


UID LED
Video port
Serial port
USB ports (4)
RJ-45 ports (4)
iLO port
Expansion board slots 1-9

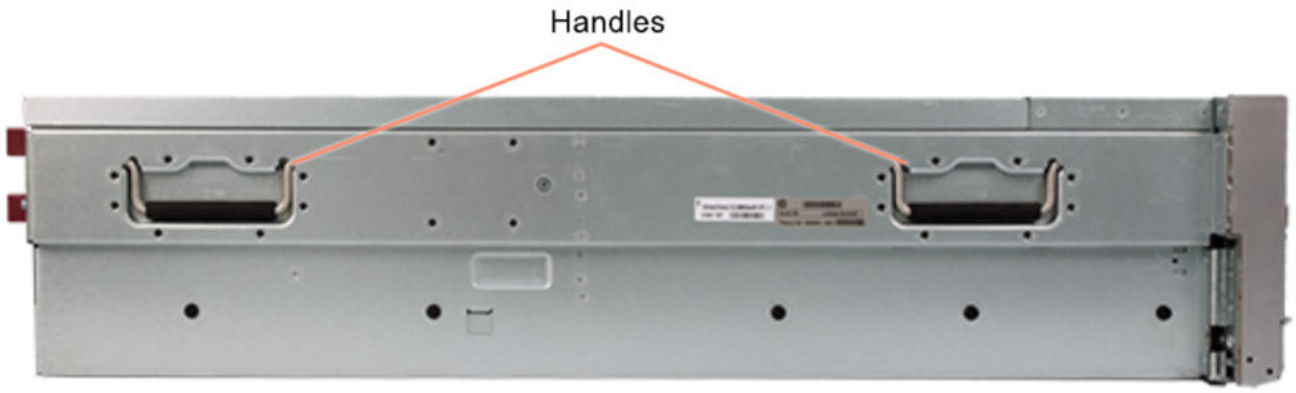
Power supplies



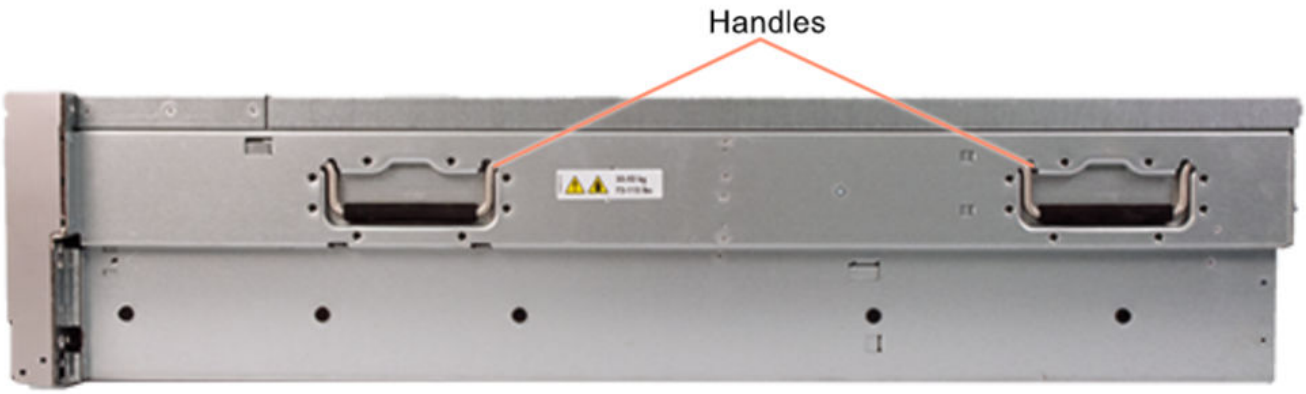
Power supply blanks



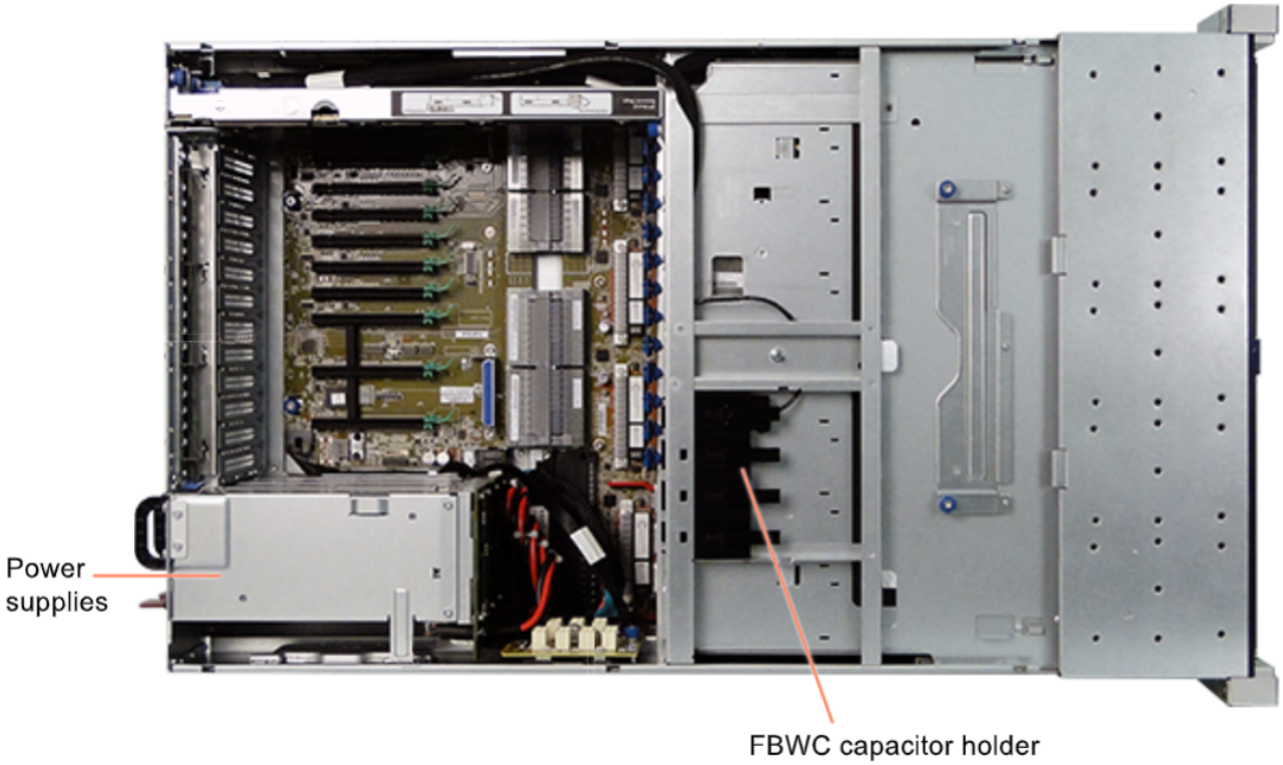
Left view



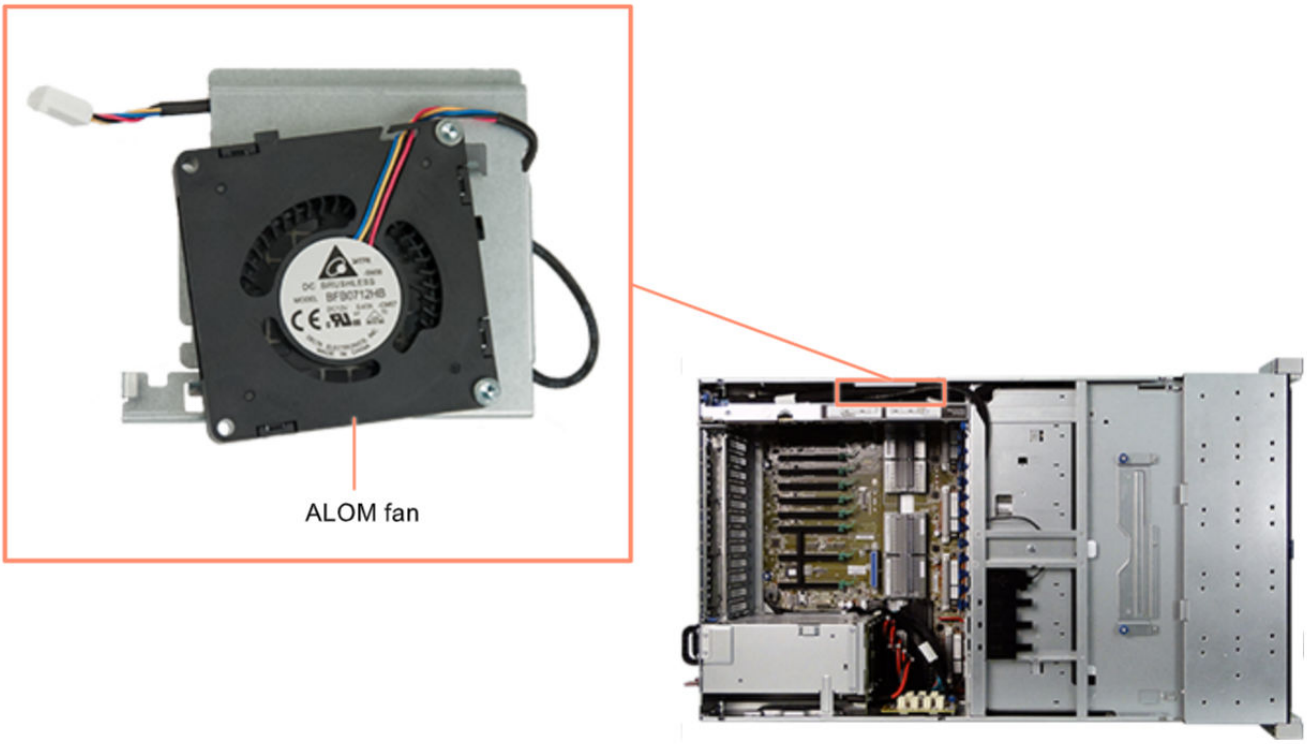
Right view



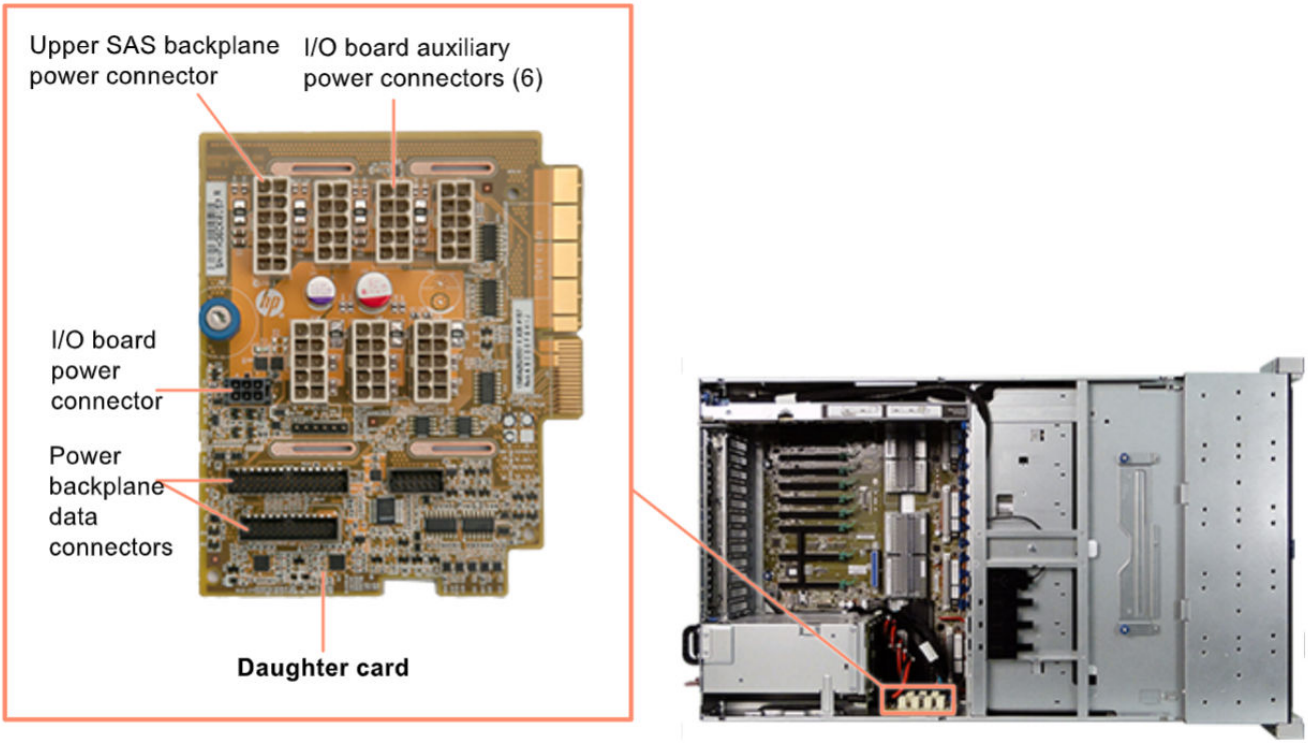
Internal view 1



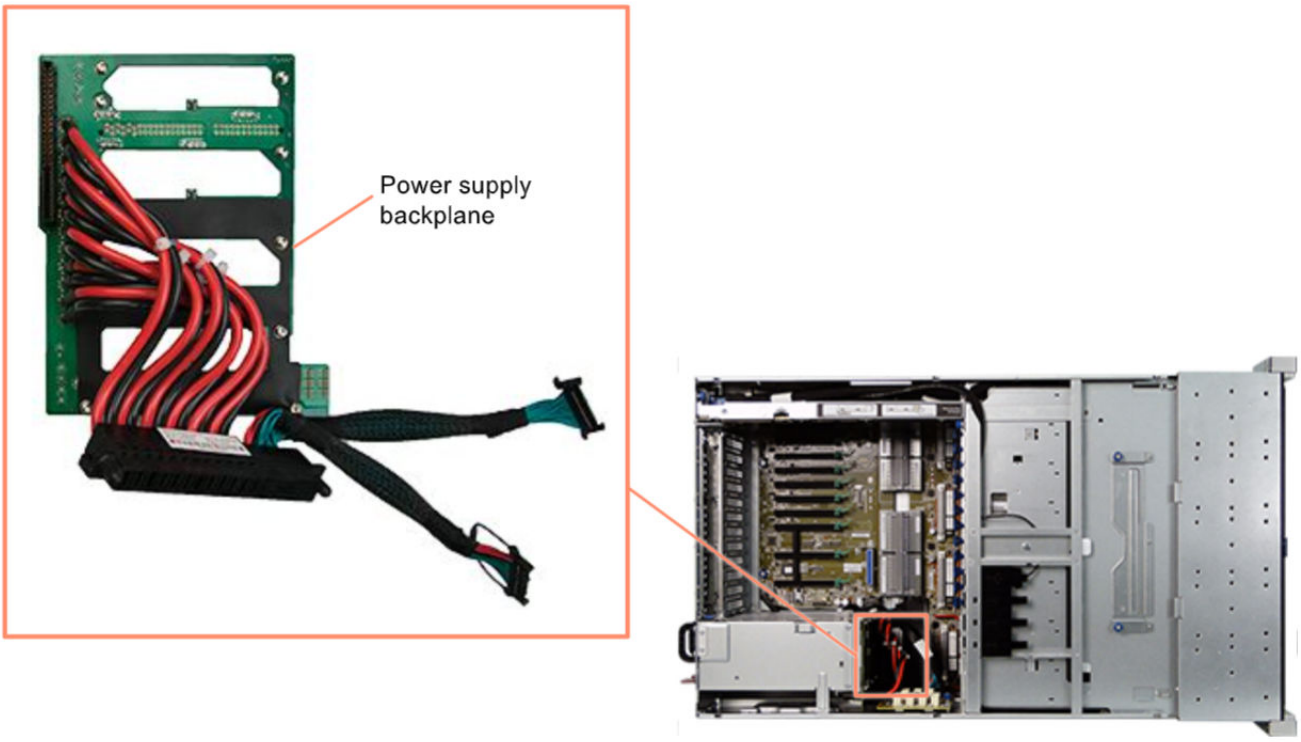
ALOM fan



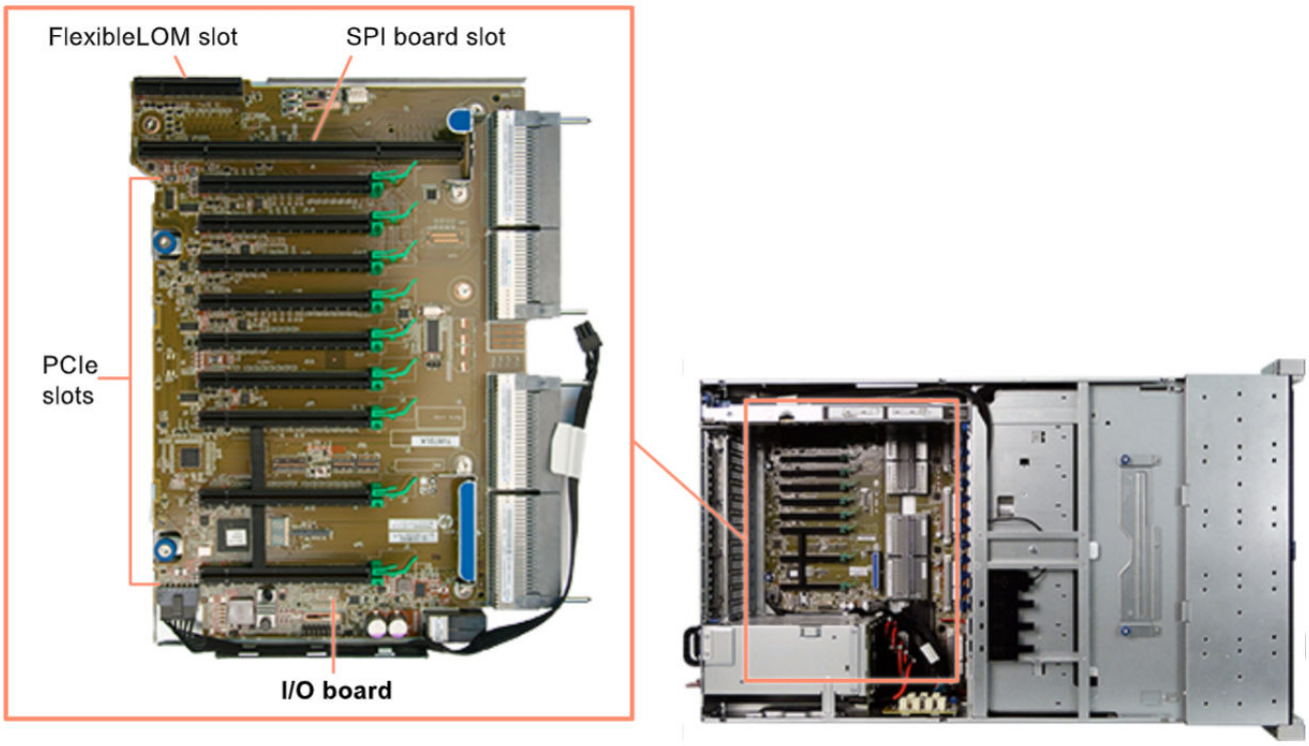
Daughter card



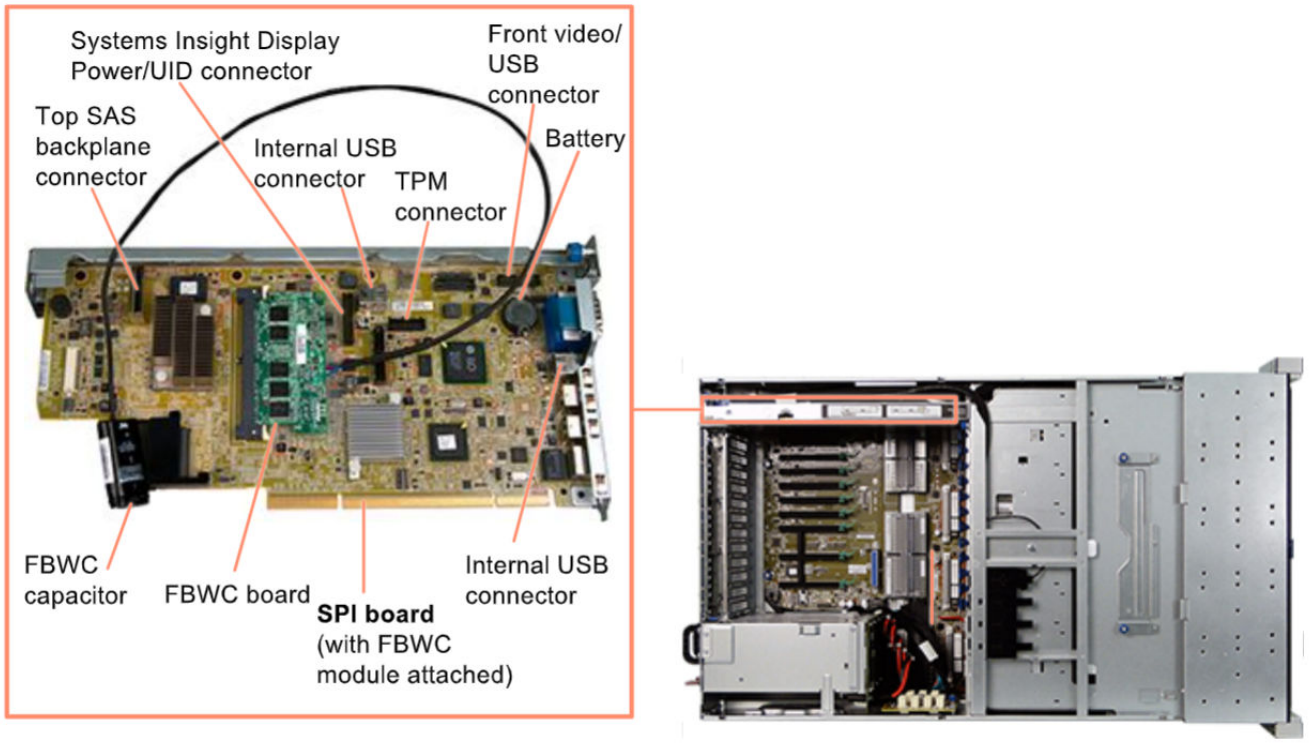
Power supply backplane



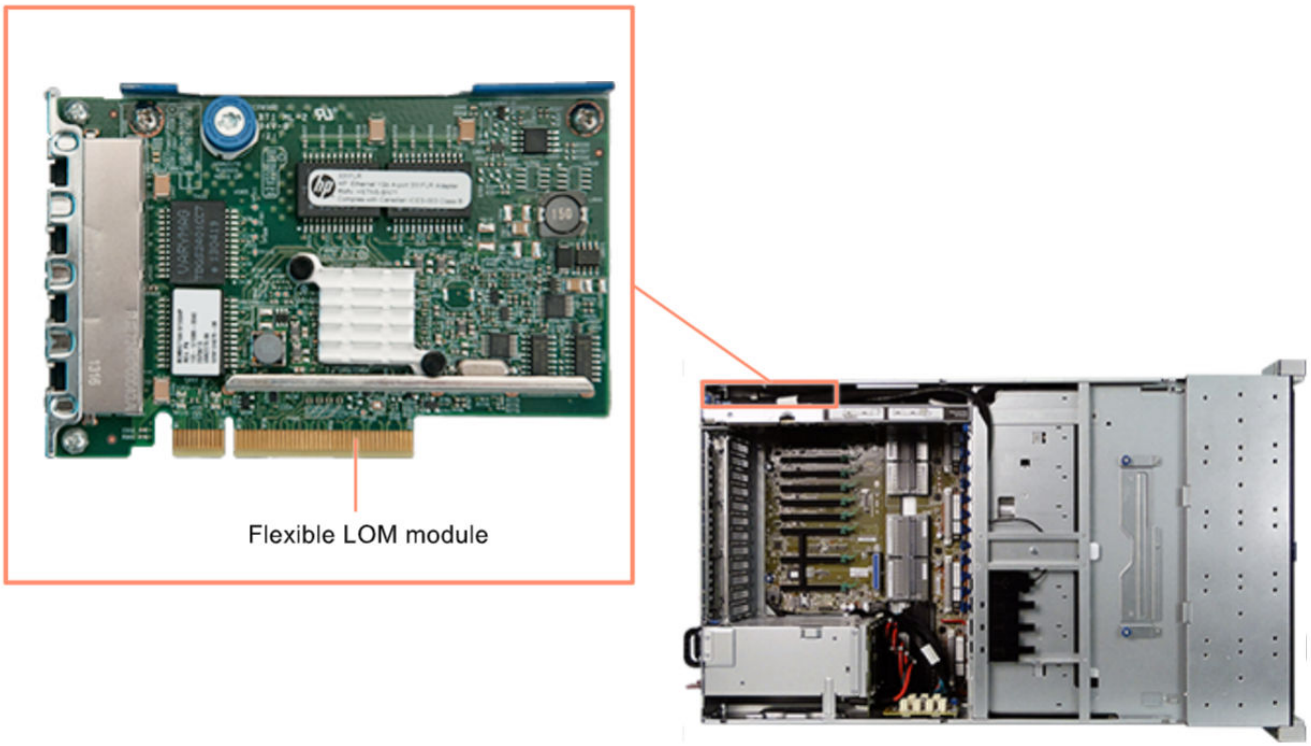
IO Board


FlexibleLOM slot
SPI board slot
PCIe slots
I/O board

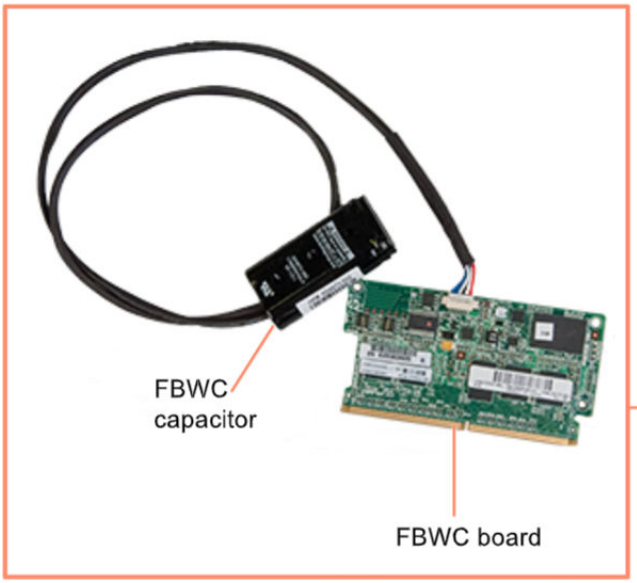
SPI Board

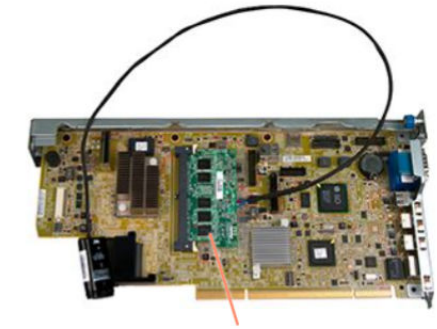

Systems Insight Display Power/UID connector
Front video/ USB connector
Top SAS backplane connector
Internal USB connector
TPM connector
Battery
FBWC capacitor
FBWC board
SPI board (with FBWC module attached)
Internal USB connector

Flexible LOM module

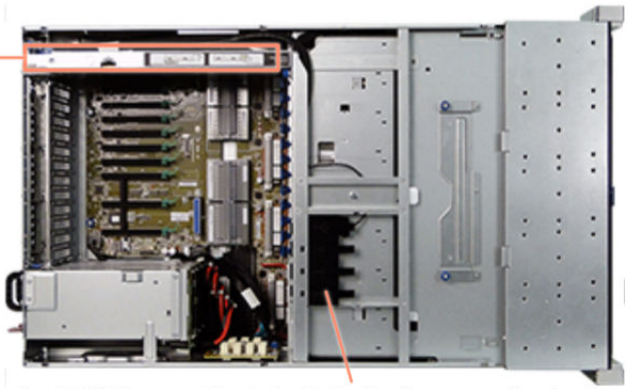


FBWC module





The FBWC board is installed on the SPI board

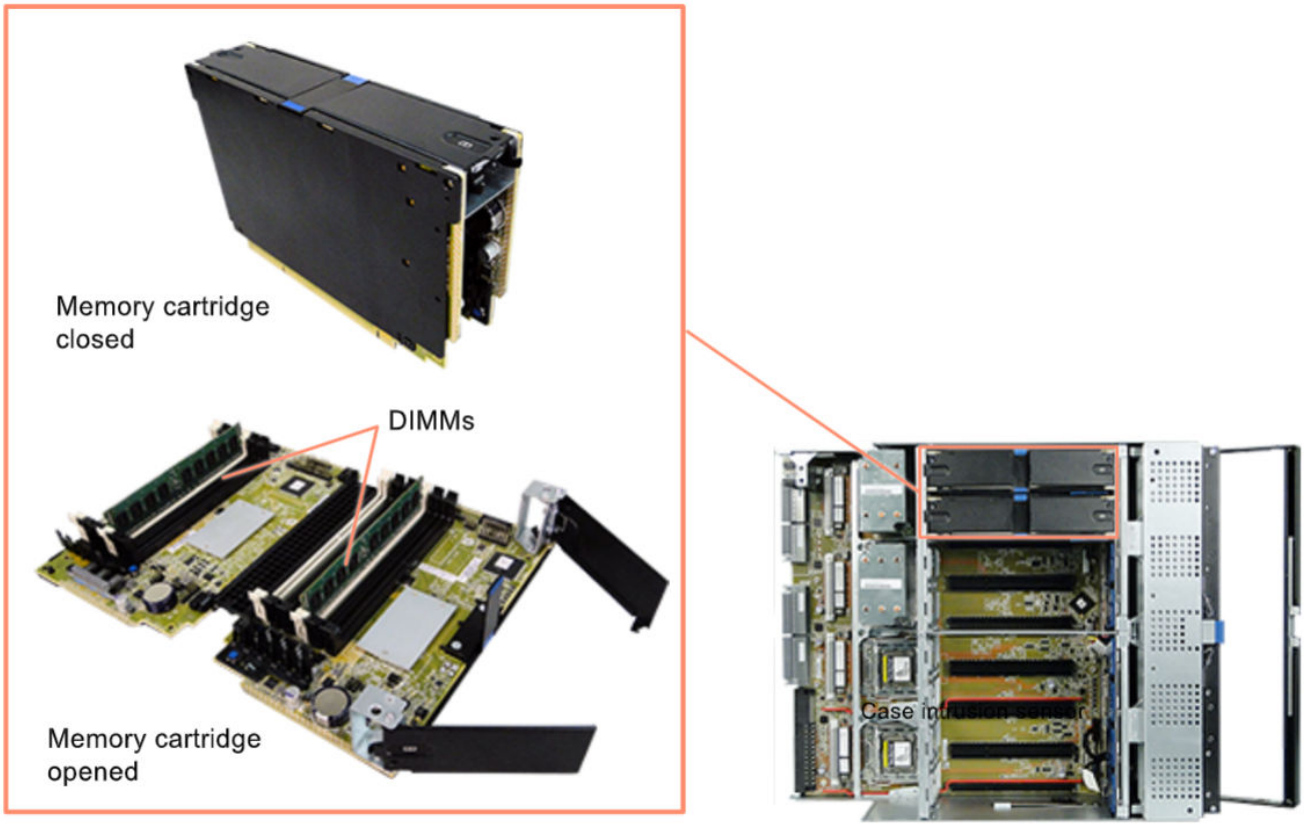


The FBWC capacitor is installed in the capacitor holder

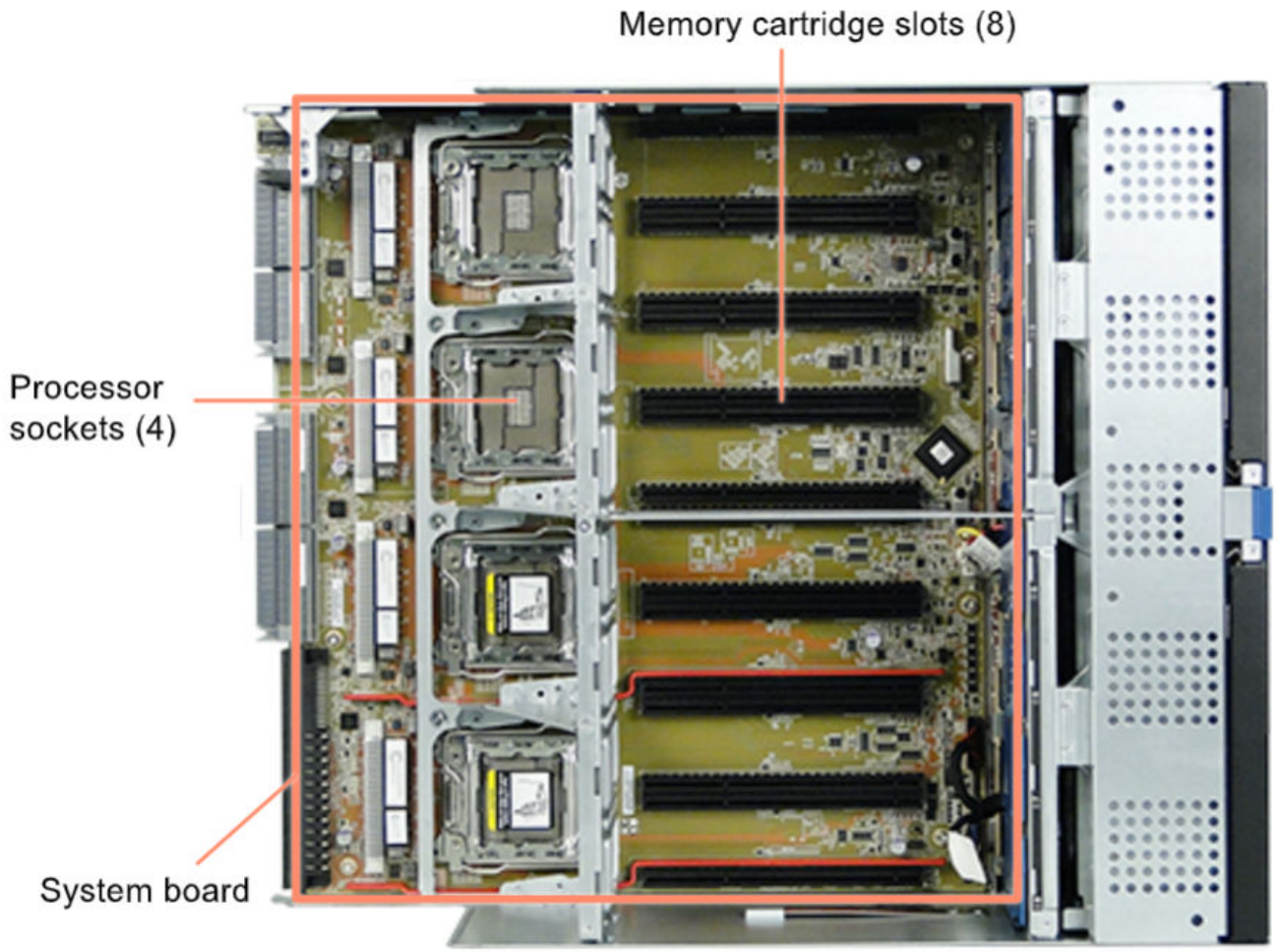
Internal view 2



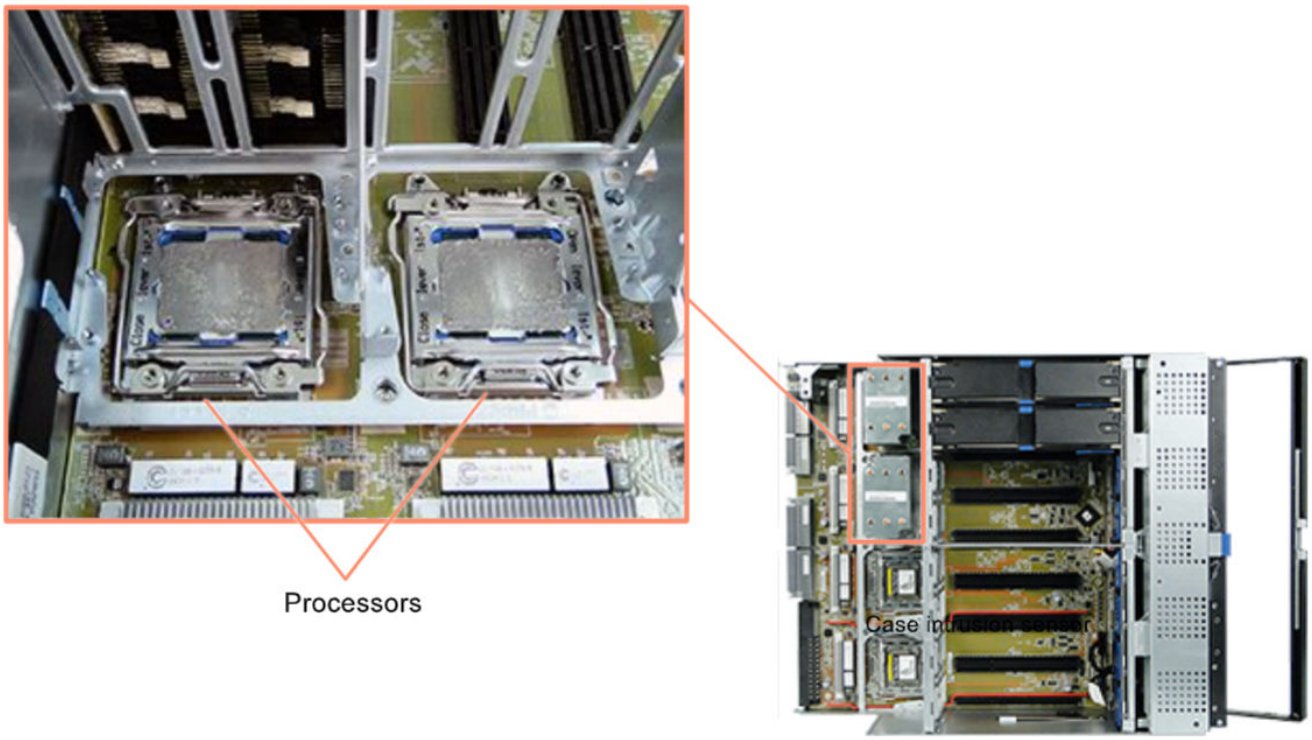
DIMMs



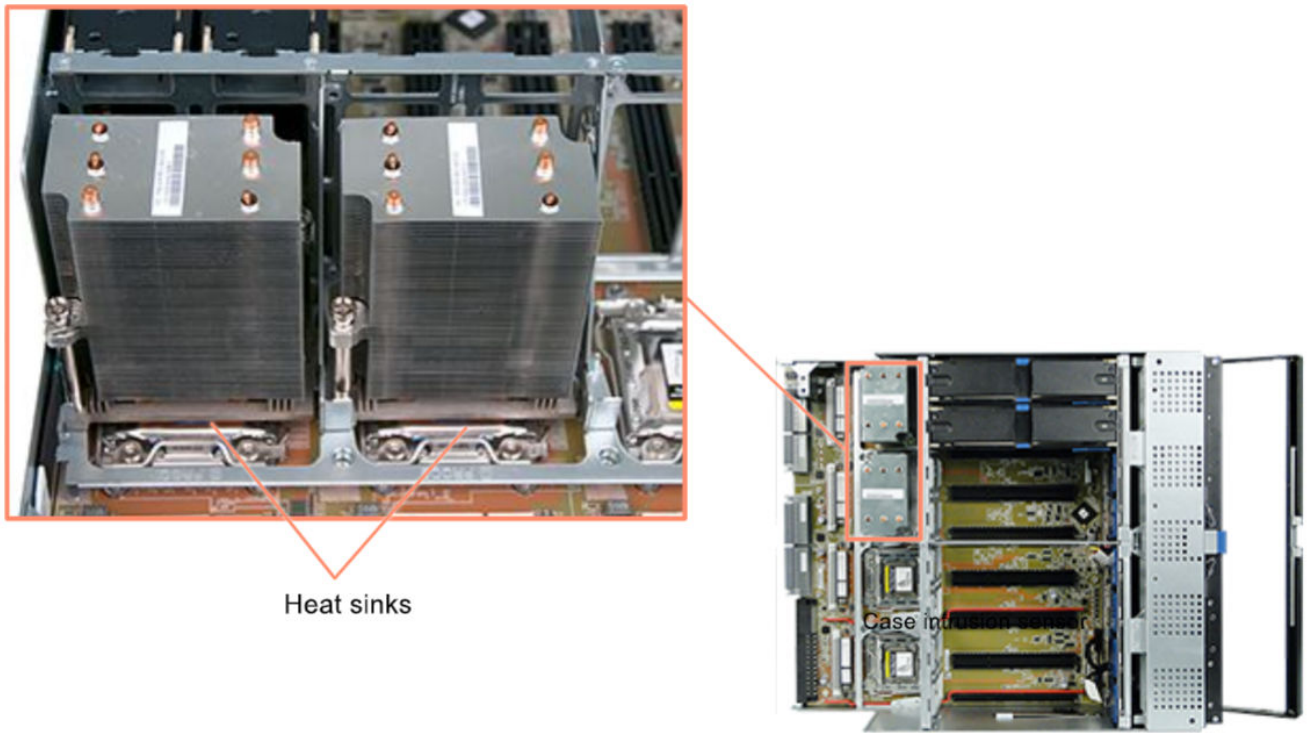
System board



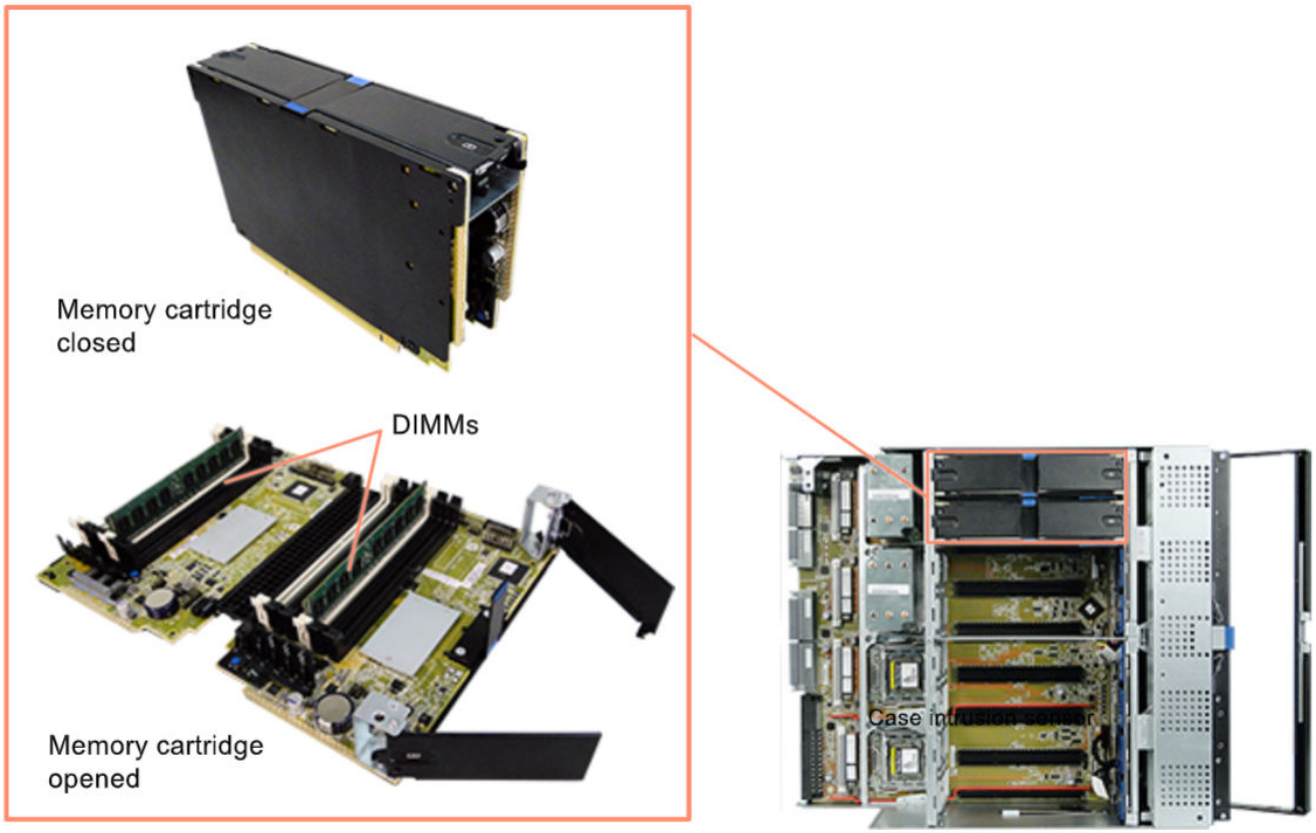
Processor


Processors
Case intrusion sensor

Heatsink


Heat sinks
Case intrusion sensor

Memory cartridge



Precautions

To prevent damage to the unit, protect data, and avoid personal injury, review and follow these precautions.

Before you begin

1. If the unit contains heated components, wait until the components have cooled off before proceeding. Refer to the service manual for details on how long each component requires to adequately cool off.
2. Put on your electrostatic discharge (ESD) wrist or shoe strap to avoid damaging any circuitry.
3. Place an ESD mat on a suitably grounded surface, and then place the unit on the mat.
4. Remove any devices from the unit being serviced, such as diskettes, tape cartridges, or CD-ROMs.

5. Power off the unit and any peripheral devices that are connected to it.**Note: Replacing a hot-plug device does not require powering down the unit.**
6. Disconnect the power cord from the electrical outlet and then from the unit. When a unit is plugged into an AC power source, voltage is always applied to the unit. You must therefore disconnect the power cord from the power source before opening the unit.
7. Disconnect all peripheral device cables from the unit.

Static electricity

Static electricity can damage electrical components. Before removing or replacing a component, observe the following precautions to prevent damage to electric components and accessories:

- Remove all ESD-generating materials from your work area.
- To avoid hand contact, transport and store all electrostatic parts and assemblies in conductive or approved ESD packaging such as ESD tubes, bags, or boxes.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free stations. Before removing items from their containers, place the containers on a grounded surface.
- Do not take the new component out of its ESD package or handle any component before connecting your ESD wrist or shoe strap to a suitably grounded surface.
- Always use an ESD-protected work station when servicing the unit. If an ESD work station is not available, ground yourself to discharge body static by touching the metal chassis of the unit you are servicing.
- Avoid contact with pins, leads, or circuitry.
- Use the ESD package provided with the new part to return the old part.

Disassembly

Ensure that you take the following precautions when disassembling a unit:

- Label each cable as you remove it, noting its position and routing. This will make replacing the cables much easier and will ensure that the cables are rerouted properly.
- Keep all screws with the component removed, if applicable. The screws used in each component can be of different thread sizes and lengths. Using the wrong screw in a component could damage the unit.
- If the unit contains light-sensitive components such as toner cartridges, store the component in its original packaging or in a dark location to avoid damage.

Tools And Materials

Tools used in removal and replacement

Ensure that you have the tools you need before you begin. These should include:

- Torx-15 screwdriver
- Torx-10 screwdriver
- Flat-head 1/8' screwdriver

Powering Down The Server

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002342en_us&noframe

Powering down the server

Steps

1. Press the Power On/Standby button to place the server in Standby mode. When the server activates Standby power mode, the system power LED changes to amber.
2. Disconnect the power cords.

Access Panel

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002343en_us&noframe

Steps

1. Use a Torx-15 screwdriver to unlock the latch.

2. Press to release and pull the locking latch up.
3. Slide the access panel to the rear of the chassis, and remove the access panel.

Access panel replacement

Steps

1. Set the access panel on the chassis about 1/2 inch (or 1.27cm) back from front guides.
2. Slide it forward.
3. Press down to latch and secure.
4. Use the Torx-15 screwdriver to lock the latch.

Processor Memory Drawer And Memory Cover

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002344en_us&noframe

Processor memory drawer and memory cover removal

Before you begin:

1. Power down the server.
2. Remove the power cords.

Removing the memory drawer

Steps

1. Push the button to release the handle.
2. Lower the handle, and then slide the processor memory drawer from the server until the release latches catch.
3. Squeeze latches on both sides to release the drawer.

4. Slide the memory drawer fully out of the server

Removing the memory drawer cover

Steps

1. Squeeze the latch and slide the drawer cover back to disengage it from the chassis.
2. Lift the drawer cover up and off of the chassis.

Replacing the memory drawer cover

Steps

1. Set the cover on the chassis about 1/2 inch back (or 1.27cm) from the guides.
2. Slide the drawer cover forward until it engages with the chassis and the latch clicks into place.

Replacing the memory drawer

Steps

1. Use the handle to slide the drawer back into the chassis.
2. Swing the handle up and press it firmly in place until it clicks.

Memory Cartridge And DIMMs

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002345en_us&noframe

Memory cartridge removal

Before you begin:

1. Power down the server.
2. Disconnect the power cords.
3. Extend the processor memory drawer.
4. Remove memory drawer cover.

Steps

1. Press the release button and the memory cartridge doors pop up.
2. Lift the memory cartridge from server.
3. Lift the latch and open the cover

DIMM removal

Steps

1. Release the DIMM by pressing the release levers down.
2. Lift the DIMM up and out of cartridge.

DIMM replacement

Steps

DIMMs are keyed as shown here.

1. Set the DIMM in the slot.
2. Press firmly so that latches lock DIMMs in place.
3. Align pins on one side of the cover to corresponding holes on the other side.
4. Press firmly to close.
5. The latch will click.

Memory cartridge replacement

Steps

The memory cartridge is keyed as shown here.

1. Holding the memory cartridge in the center, align with the connector and channels on either side while pressing the fan baffle back.
2. Slide the memory cartridge in the slot.
3. Press firmly to engage.

Hard Drive

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002346en_us&noframe

Hard drive removal

Before you begin: Ensure that the LED status is not solid white indicating that data will be lost if removed.

Steps

1. Press the release button
2. Grasp handle
3. Use the handle to slide the drive out of the server.

Hard drive replacement

Steps

1. Hold the drive so the release button is on the right.
2. Slide it firmly into the bay so the handle starts to close.
3. Press the handle closed until it clicks.

Drive Blank

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002347en_us&noframe

Drive blank removal

Steps

1. Squeeze the latch
2. Slide it out of the server

Drive blank replacement

Steps

Hold the blank so the latch is facing the server left.

1. Squeeze the latch.
2. Slide it into the server.
3. Latch clicks in place.

Fan

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002348en_us&noframe

Fan removal

Steps

1. Squeeze the latches of the fan.
2. Slide it out of the server.

Fan replacement

Steps

1. Hold the fan so that the power-end signal is at the bottom.
2. Slide the fan into the server until latches click to indicate that it is fully connected.

Hot-Plug Power Supply

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002349en_us&noframe

Hot-Plug power supply removal

Before you begin: Press Power/Standby Button to put the server in standby.

Steps

1. Disconnect the power cord from the power supply.
2. Squeeze the release latch.
3. Grasp the handle and use it to slide the power supply out of the server.

Hot-Plug Power supply replacement

Steps

1. Hold the power supply so that the connector is at the bottom.

2. Slide the power supply in until the latch snaps in place.
3. Reconnect the power cord.

FBWC And Capacitor Pack Holder

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002350en_us&noframe

Flash-Backed Write Cache (FBWC) and capacitor pack holder removal

Before you begin:

1. Power down the server.
2. Disconnect the power cords.
3. Remove the access panel.
4. Extend the processor memory drawer.
5. Remove the SPI board.

Steps

1. Press the latches to release the Flash-Backed Write Cache or FBWC.
2. Remove the cache module.
3. Disconnect the capacitor cable from the module. You may need to use a small about 1/8th inch (about 1/3rd centimeter) flathead screwdriver as shown here.
4. Route the cable back to the capacitor pack.
5. Lift the latch, and lift the capacitor pack out.
6. Lift both out of the server

Flash-Backed Write Cache (FBWC) and capacitor pack holder replacement

Steps

1. Insert the capacitor in the holder and ensure that it is latched.
2. Route the cable through the chassis opening labeled 'to SPI board' and attach it to the FBWC.
3. With the cable connection down, slide the FBWC in the connector until the latches catch.

SPI Board

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002351en_us&noframe

SPI board removal

Before you begin:

1. Power down the server.
2. Disconnect the power cords.
3. Remove the access panel.
4. Extend the processor memory drawer.

Steps

1. Loosen the two thumbscrews.
2. Carefully pull the SPI board up to disconnect it from the I/O board.
3. Disconnect the USB/Video and Power, and SID cables from the SPI board.
4. Remove the FBWC board.
5. Lift the SPI board up and out of the server.

SPI board replacement

Steps

1. Reinstall the FBWC board and cables.

2. Locate the alignment guide on the rear of the board and at the channel on the rear of the chassis.
3. Align the board with this channel and also with the guide at the other end of the board with the channel on the bracket located in the middle of the chassis.
4. Slide the SPI board down to meet the connector.
5. Press firmly to seat the SPI board on the I/O board.
6. Tighten the two thumbscrews.

ALOM Fan

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002352en_us&noframe

ALOM fan removal

Before you begin:

1. Power down the server.
2. Disconnect the power cords.
3. Remove the access panel.
4. Extend the processor memory drawer.

Steps

1. Disconnect the cable from the I/O board.
2. Remove the Torx-10 screw from the outside of the chassis.
3. Slide the ALOM fan assembly toward the front of the chassis to disengage it from the tabs and so that it can clear the opening in the channel on the side of the chassis.
4. Lift the assembly away from the chassis

ALOM fan replacement

Steps

1. Tilt and set the ALOM fan assembly so that it is under the clear area under the channel.
2. Slide it toward the back of the chassis to engage the tabs with the slots of the assembly.
3. Replace the Torx-10 screw on the outside of the chassis to secure.
4. Reconnect cable to the I/O board.

Flexible LOM

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002353en_us&noframe

Flexible LOM removal

Before you begin:

1. Power down the server.
2. Disconnect power cords.
3. Disconnect network cords (not shown).
4. Remove the access panel.
5. Remove the SPI board (without disconnecting cables).

Steps

1. Loosen the thumbscrew.
2. Use the blue tabs to disconnect and lift it from the IO board.

Flexible LOM replacement

Steps

1. The FlexLOM is keyed, hold it so that it will align with the slot.
2. Slide it down and use blue tabs to press and seat.

3. Tighten the thumbscrew.

Expansion Board

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002354en_us&noframe

Expansion board removal

Before you begin:

1. Power down the server.
2. Disconnect power cords.
3. Remove the access panel.

Steps

1. The slot cover is spring loaded. Press the release lever and the expansion board cover flips back.
2. Remove the expansion card.

Expansion board replacement

Steps

1. Insert the expansion card.
2. Swing the cover back until it clicks in place.

I/O Board

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002355en_us&noframe

I/O board removal

Before you begin:

1. Power down the server.
2. Disconnect the power cords.
3. Remove the access panel.
4. Remove any expansion boards.
5. Remove SPI board.
6. Remove the FlexLOM.

Steps

1. Disconnect the ALOM fan assembly cable from the I/O board.
2. Disconnect the power cable from the daughter board.
3. Loosen two (2) thumbscrews.
4. Slide the board back to disconnect it from the power backplane.
5. Lift the board up and out of the server.

I/O board replacement

Steps

1. Set the board in by tilting it slightly to the right and to the back of the chassis.
2. Push the board forward to reconnect it to the power backplane connector.
3. Tighten the two (2) thumbscrews.
4. Reattach the power supply cable to the daughter board.
5. Reattach the ALOM fan assembly cable to the I/O board.

Heatsink And Processor

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002356en_us&noframe

Heatsink and Processor removal

Before you begin:

1. Power down the server.
2. Disconnect the power cords.
3. Remove the access panel.
4. Extend the processor memory drawer.
5. Remove the memory drawer cover.

Heatsink removal

Steps

1. Loosen the spring-loaded screws on opposing sides with a Torx-15 screwdriver.
2. Lift the heatsink up and out of the server.

Processor removal

Steps

1. Press to release each of the processor locking levers and then open the processor retaining bracket.
2. Slide the processor up and out of the bracket and the server.

Processor replacement

Steps

1. Slide the processor into the bracket.
2. Ensure that the processor is correctly installed in the bracket by visually inspecting that the standoffs are located in the blue key-hole guide as shown here.This is an important step as the pins on the system board are very fragile and easily damaged. The position of the standoffs in the guide ensure that the processor is correctly aligned to connect with the pins when you close the bracket.
3. Close the processor retaining bracket.Notice that when the processor is installed properly inside the processor retaining bracket, the processor retaining bracket will clear the flange on the front of the socket.
4. Close the locking levers.

Heatsink replacement

Steps

1. Align the screws on the heatsink with the screw holes.
2. Tighten in an even X pattern to ensure that the heatsink is flat on the processor.It is important that you do not over-tighten the screw.

Right Ear Bezel (UID/Power/SID)

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002357en_us&noframe

Right ear bezel (UID/Power/SID) removal

Before you begin:

1. Power down the server.
2. Disconnect power cords.
3. Remove the access panel.
4. Extend the processor memory drawer.

Steps

1. Using a Torx T-10 screwdriver, remove the four (4) screws securing the bezel to the chassis.
2. Slowly pull the assembly from the server so that you can disconnect the SID bracket from the bezel bracket.
3. Disconnect UID/Power cable.
4. Pull the bezel and SID display away from the server.

Right ear bezel (UID/Power/SID) replacement

Steps

1. Reconnect cable to the bezel.
2. Replace the SID bezel on the right bezel bracket.
3. Hold the bezel so the notch aligns with the server.
4. Set in place.
5. Replace the four (4) screws.

Left Ear Bezel (USB/Video)

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002358en_us&noframe

Left ear bezel (USB/Video) removal

Before you begin:

1. Power down the server.
2. Disconnect power cords.
3. Remove the access panel.
4. Extend the processor memory drawer.

Steps

1. Using a Torx T-10 screwdriver, remove the four (4) screws securing the bezel to the chassis.
2. Slowly pull the assembly from the server so that you can access the cables.
3. Disconnect the USB/Video cable from the bezel.
4. Pull the bezel away from the server.

Left ear bezel (USB/Video) replacement

Steps

1. Hold the bezel so the notch aligns with the chassis.
2. Reconnect the USB/Video cable to the bezel.
3. Set in place.
4. Replace the four (4) screws.

Daughter Card

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002359en_us&noframe

Daughter card removal

Before you begin:

1. Power down the server.
2. Disconnect the power cords.
3. Remove the access panel.
4. Slide the memory drawer out.

Steps

1. Disconnect three (3) cables from the daughter card.

2. Loosen the thumbscrew.
3. Slide the card toward the front to disengage it from the power supply backplane, and the tabs and stop on the chassis.
4. Tilt the daughter card away from side of the chassis and lift it out.

Daughter card replacement

Steps

1. The daughter card is keyed so that it can only be inserted one way.
2. Align the bottom of the card with the stop.
3. Align the four slots of the card with the tabs.
4. Slide it back to engage the slots with the tabs and connect to the power supply backplane.
5. Tighten the thumbscrew.
6. Reconnect the three (3) cables.

Power Supply Backplane

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002360en_us&noframe

Power supply backplane removal

Before you begin:

1. Power down the server.
2. Disconnect the power cords.
3. Remove the power supplies.
4. Remove the access panel.
5. Slide the processor memory drawer out.
6. Remove the daughter card.

7. Remove the I/O board.

Steps

1. Remove the two (2) Torx-15 screws from the power connector block where it connects to the bottom of the chassis.
2. Using a Torx T-10 screwdriver, remove the two (2) screws at the top of the backplane.
3. Slide the backplane up to disengage it from the tabs on the chassis.

Power supply backplane replacement

Steps

1. Hold the backplane so that connections are facing out and the slots align with the tabs on the chassis.
2. Slide it down.
3. Replace the two (2) screws at the bottom.
4. Replace the two (2) screws at the top of the backplane.

System Board

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002361en_us&noframe

System board removal

Steps

1. Power down the server.
2. Disconnect the power cords.
3. Remove the hard drives.
4. Remove the drive blanks.

5. Remove the fans.
6. Remove the access panel.
7. Remove the memory cartridges
8. Remove the heatsinks and processors.

The processor memory drawer with the system board and lower SAS backplane is swapped out.