HPE ProLiant DL180 Gen9 Server - Parts Support Guide

Part Number: External
Published: 2020
Edition: 1

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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.

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Front View 1



Internal View 3



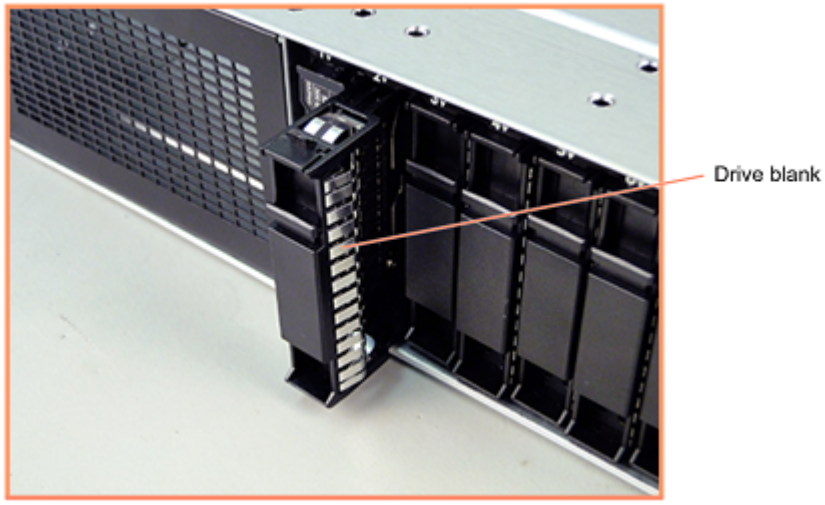
Access Panel



Power UID USB Module



Drive Blank



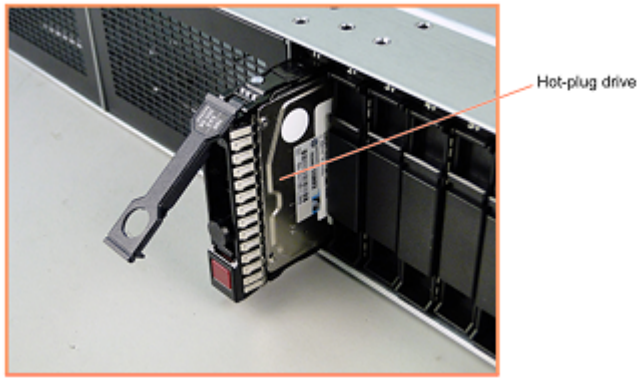
Front View 2



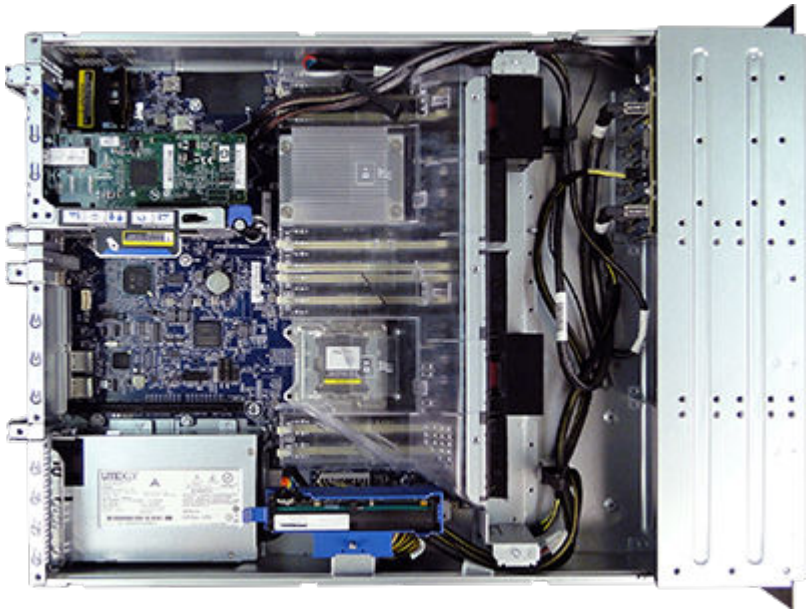
Back View



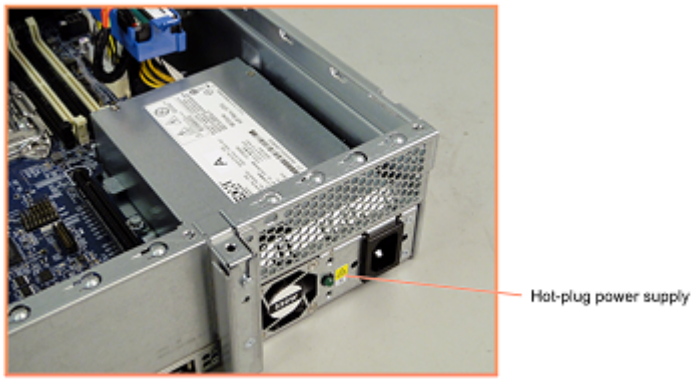
Hot Plug Drive



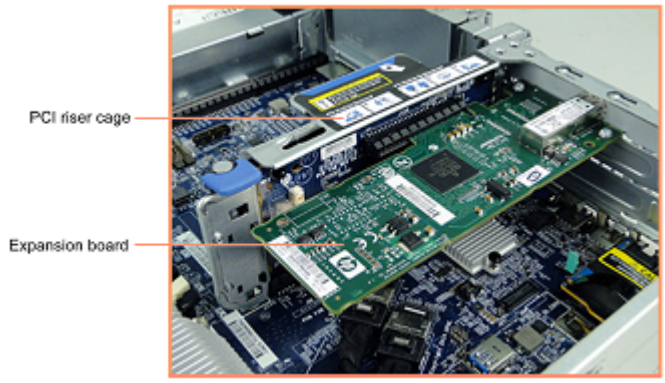
Internal View 1



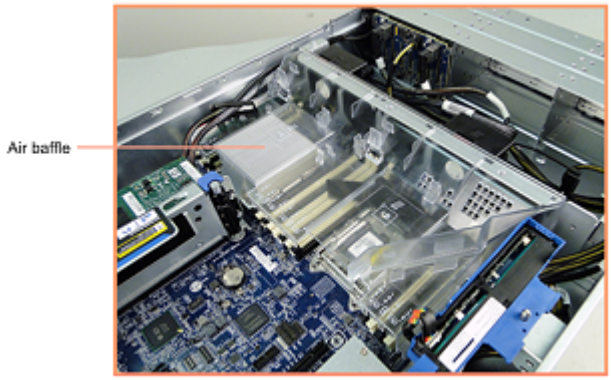
Hot Plug Power Supply



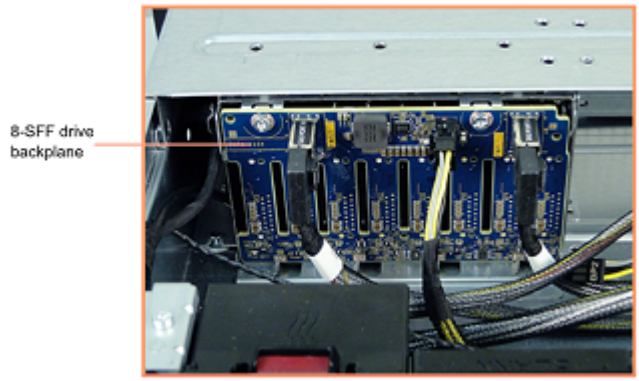
Expansion Board



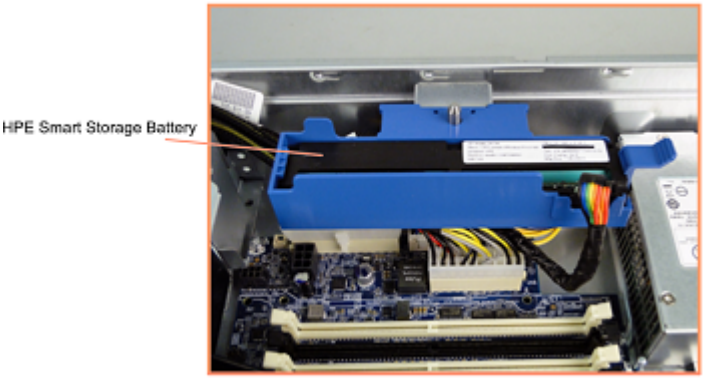
Air Baffle



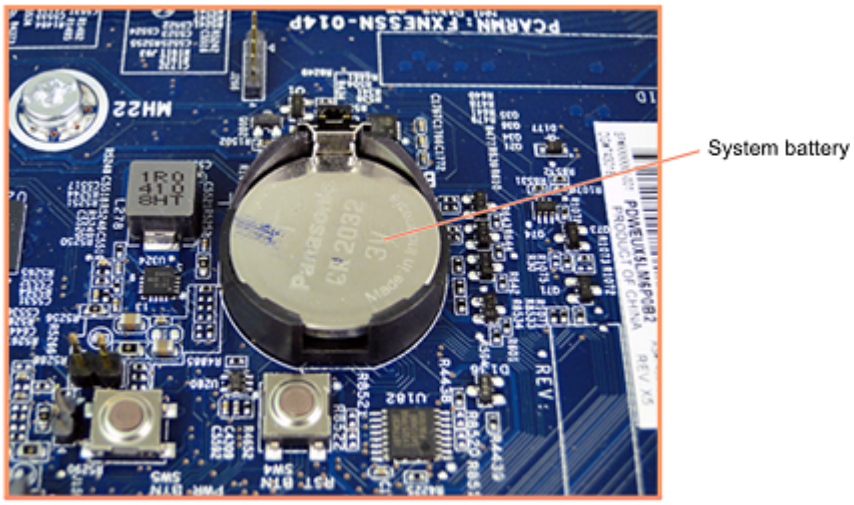
8 SFF Drive Backplane



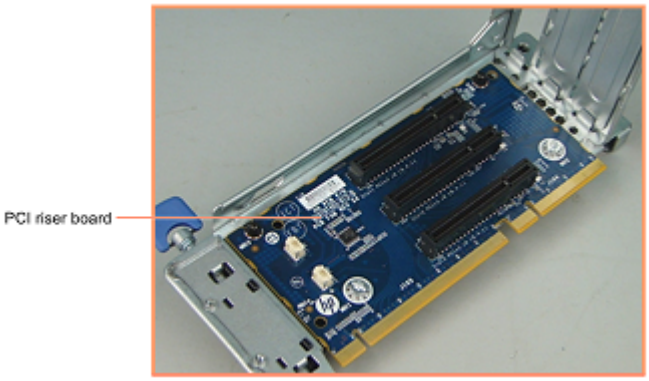
HPE Smart Storage Battery



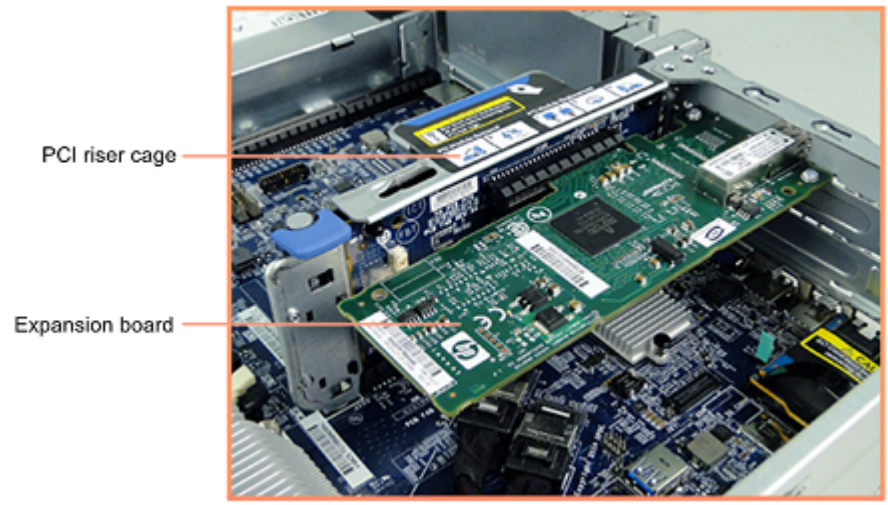
System Battery



PCI Riser Board



PCI Riser Cage



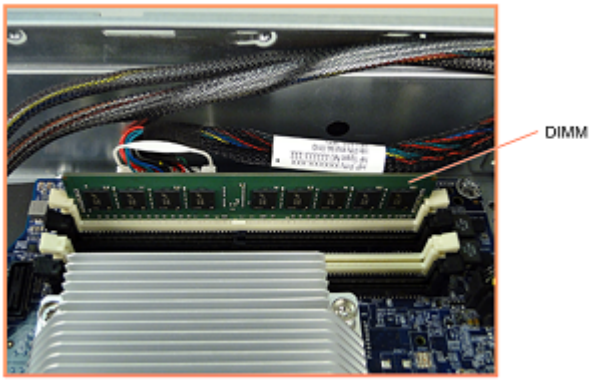
Internal View 2



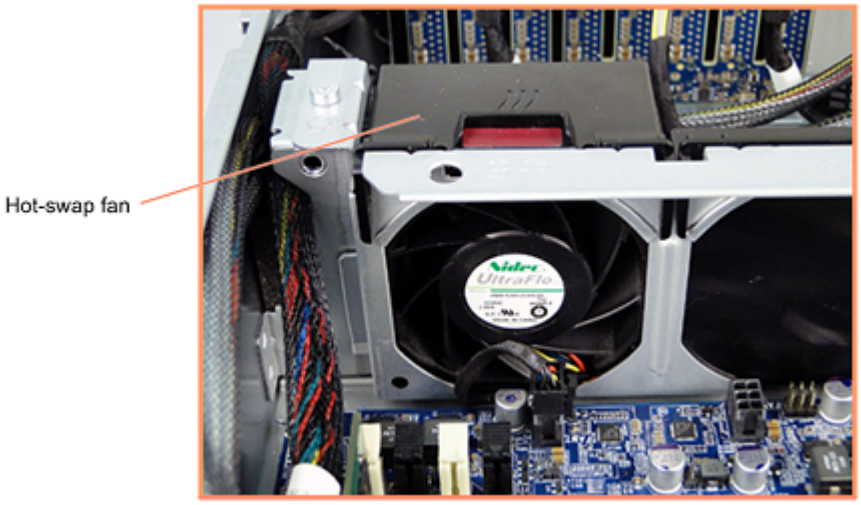
Heatsink



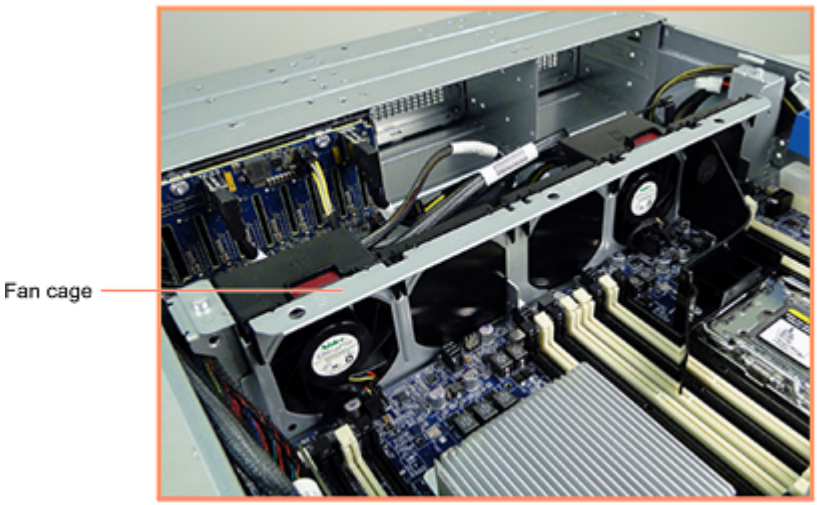
DIMM



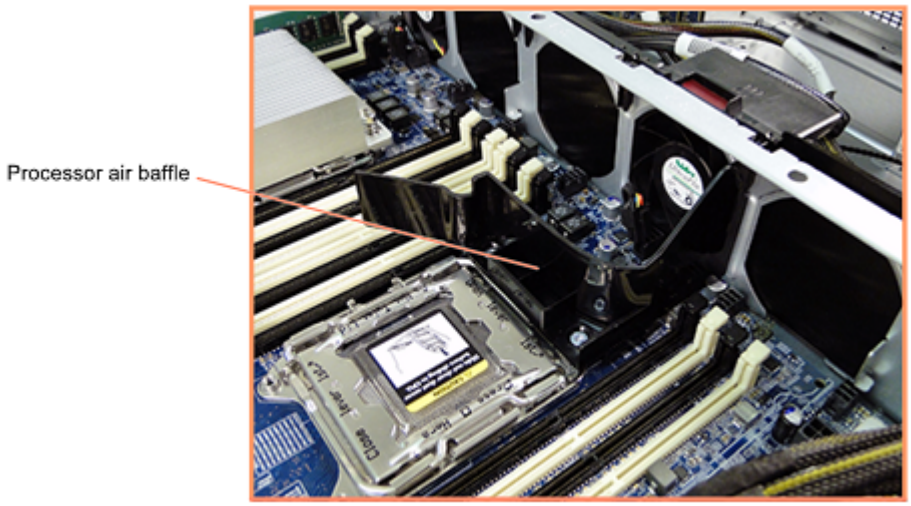
Hot Swap Fans



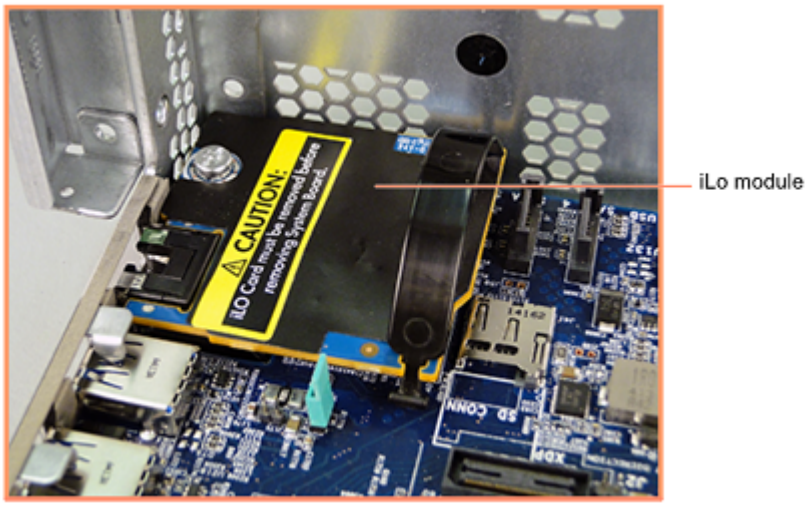
Fan Cage



Processor Air Baffle



iLO Module



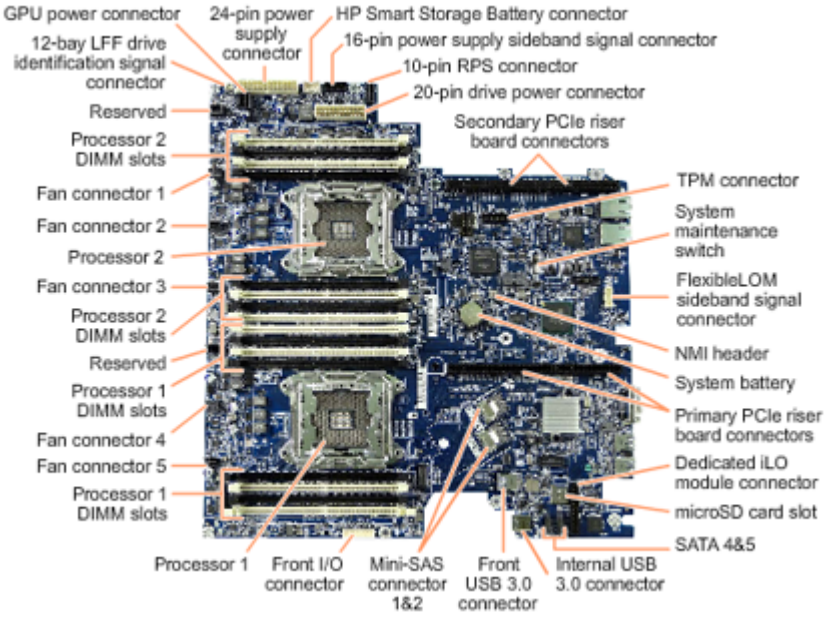
Internal View 3



Processor 1



System Board



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 screwdrivers (T-10, T-15)
- Wooden or plastic flat bladed tool (orange stick or plastic probe)
- Electrostatic discharge (ESD) wrist or shoe strap

Hot Plug Drive

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Hot-plug drive

Before you begin:

1. Review and follow Precautions .

Hot-plug drive removal

1. Press the ejector button to release the handle.
2. Grasp the handle and slide the drive out of the drive bay.

Hot-plug drive replacement

1. With the handle extended, slide the drive into the bay until it stops.

2. Push the handle in to lock the drive in place.

Drive Blank

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Drive blank

Before you begin:

1. Review and follow Precautions .

Drive blank removal

1. Grasp the drive blank by the finger slots.
2. Squeeze the release latch and slide the blank out of the bay.

Drive blank replacement

1. Slide the blank into the bay until it locks in place.

Access Panel

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Access panel

Before you begin:

1. Review and follow Precautions .
2. Press the power button to put the server in standby.
3. Disconnect the power cord from the server.

Access panel removal

1. If necessary, unlock the access panel latch with a Torx T-15 screwdriver.
2. Press the release button and pull up on the latch to disengage the access panel from the chassis.
3. Lift the access panel up and off the server.

Access panel replacement

1. Ensure the access panel latch is in the open position.
2. Align the hole in the latch with the guide pin in the chassis.
3. Lower the access panel onto the chassis and push the latch down to close.
4. If necessary, lock the access panel latch with a Torx T-15 screwdriver.

Air Baffle

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Air baffle

Before you begin:

1. Review and follow Precautions .
2. Press the power button to put the server in standby.
3. Disconnect the power cord from the server.
4. Remove the access panel.

Air baffle removal

1. Open the cable clip on the air baffle and remove the SAS cables.
2. Lift the air baffle straight up and out of the chassis.

Air baffle replacement

1. Lower the air baffle into the chassis.
2. Place the SAS cables into the cable clip on the air baffle and close the clip.

Processor Air Baffle

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Processor air baffle

Before you begin:

1. Review and follow Precautions .
2. Press the power button to put the server in standby.
3. Disconnect the power cord from the server.
4. Remove the access panel.
5. Remove the air baffle.

Processor air baffle removal

1. Remove the two Torx T-15 screws that secure the processor air baffle to the heatsink mounting holes.
2. Lift and remove the processor air baffle.

Processor air baffle replacement

1. Position the processor air baffle over the heatsink mounting holes.
2. Replace the two screws.

8-SFF Drive Backplane

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8-SFF drive backplane

Before you begin:

1. Review and follow Precautions .
2. Press the power button to put the server in standby.
3. Disconnect the power cord from the server.
4. Remove the access panel.
5. Remove the drives.

8-SFF drive backplane removal

1. Disconnect the cables from the backplane.
2. Remove the two Torx T-15 screws that secure the backplane to the drive cage.
3. Lift the backplane out of the chassis.

8-SFF drive backplane replacement

1. Place the bottom edge of the backplane into the guide tabs at the bottom of the drive cage.
2. Align the screw holes and replace the two screws.
3. Connect the cables to the backplane.

Power Switch/UID/USB Module

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Power switch/UID/USB module

Before you begin:

1. Review and follow Precautions .
2. Press the power button to put the server in standby.

3. Disconnect the power cord from the server.
4. Remove the access panel.
5. Remove the air baffle.

Power switch/UID/USB module removal

1. Disconnect the power switch/UID/USB cable from the system board.
2. Remove the thermal sensor cable from the clips on the chassis pan.
3. Remove the Torx T-10 screw that secures the power switch/UID/USB module to the top of the chassis.
4. Slide the module and cables out through the front of the chassis.

Power switch/UID/USB replacement

1. Guide the power switch/UID/USB cables into the chassis.
2. Slide the power switch/UID/USB module into the chassis and replace the screw.
3. Replace the thermal sensor cable into the clips on the chassis pan.
4. Connect the power switch/UID/USB cable to the system board.

Hot-Swap Fan

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Hot-swap fan

Before you begin:

1. Review and follow Precautions .
2. Press the power button to put the server in standby.
3. Disconnect the power cord from the server.
4. Remove the access panel.
5. Remove the air baffle.

Hot-swap fan removal

1. Disconnect the fan cable from the system board.
2. Press down firmly on the retaining latch and then lift the fan out of the fan cage.

Hot-swap fan replacement

1. Align the hooks on the fan with the slots and top edge of the fan cage.
2. Lower the fan and press until the latch locks in place.
3. Connect the fan cable to the system board.

Fan Cage

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Fan cage

Before you begin:

1. Review and follow Precautions .
2. Press the power button to put the server in standby.
3. Disconnect the power cord from the server.
4. Remove the access panel.
5. Remove the air baffle.

Fan cage removal

1. Disconnect all fan cables from the system board.
2. Remove the two Torx T-15 screws that secure the fan cage to the mounting brackets on either side of the chassis.
3. Grasp the fan cage and lift it straight up and out of the chassis.

Fan cage replacement

1. Align the fan cage with the mounting brackets and lower it down into place.
2. Replace the two screws that secure the fan cage to the mounting brackets.
3. Connect the fan cables to the system board.

DIMMs

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DIMMs

Before you begin:

1. Review and follow Precautions .
2. Press the power button to put the server in standby.
3. Disconnect the power cord from the server.
4. Remove the access panel.
5. Remove the air baffle.

DIMM removal

1. Push down and out on the DIMM slot latches to release the DIMM.
2. Remove the DIMM from the slot.

DIMM replacement

1. Ensure the DIMM slot latches are open.
2. Align the notch in the DIMM with the DIMM slot key.
3. Push the DIMM down firmly into the slot until the latches snap into place and the DIMM is fully seated.

PCI Riser Cage

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PCI riser cage

Before you begin:

1. Review and follow Precautions .
2. Press the power button to put the server in standby.
3. Disconnect the power cord from the server.
4. Remove the access panel.

PCI riser cage removal

1. Disconnect any cables attached to the expansion boards.
2. Rotate the locking post handle 180° counter-clockwise until the post pops up and disengages from the system board.
3. Grasp the riser cage at the touch points and lift it out of the chassis.

PCI riser cage replacement

1. Align the riser cage with the slots on the back of the chassis.
2. Slide the riser cage down and then press until the riser board is fully seated.
3. Push the locking post down and rotate it 180° clockwise to lock the riser cage.
4. Connect any cables needed to expansion boards in the riser cage.

Expansion Board

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Expansion board

Before you begin:

1. Review and follow Precautions .
2. Press the power button to put the server in standby.
3. Disconnect the power cord from the server.
4. Remove the access panel.
5. Remove the PCI riser cage.

Expansion board removal

1. Open the PCI retention clamp.
2. Pull the expansion board out of the slot on the riser board.

Expansion board replacement

1. Align the connectors on the expansion board with the slot on the riser board.
2. Press the board into the slot until it is fully seated.
3. Close the retention clamp.

PCI Riser Board

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001406en_us&noframe

PCI riser board

Before you begin:

1. Review and follow Precautions .
2. Press the power button to put the server in standby.
3. Disconnect the power cord from the server.
4. Remove the access panel.

5. Remove the PCI riser cage.
6. Remove the expansion boards.

PCI riser board removal

1. Remove the two Torx T-15 screws that secure the PCI riser board to riser cage.
2. Grasp the board and slide it down and out of the riser cage.

PCI riser board replacement

1. Align the notches on the riser board with the retaining pins and push the board into place.
2. Replace the two Torx T-15 screws that secure the PCI riser board to riser cage.

HP Smart Storage Battery

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HP Smart Storage battery

Before you begin:

1. Review and follow Precautions .
2. Press the power button to put the server in standby.
3. Disconnect the power cord from the server.
4. Remove the access panel.

HP Smart Storage Battery removal

1. Lift the battery holder off of the mounting bracket.
2. Press the retaining clip and pull the battery out of the holder.
3. Disconnect the battery from the system board and remove.

HP Smart Storage Battery replacement

1. Connect the battery to the system board.
2. Place the battery into the holder and press until it locks in place
3. Align the battery holder with the pin on the mounting bracket and lower it into place.

System Battery

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001408en_us&noframe

System Battery

Before you begin:

1. Review and follow Precautions .
2. Press the power button to put the server in standby.
3. Disconnect the power cord from the server.
4. Remove the access panel.

System battery removal

1. Press the retaining clip with a flat-bladed tool to release the battery.
2. Lift the battery out of the socket.

System battery replacement

1. Press the battery into the socket with the plus (+) sign facing up.

HP Dedicated ILO Management Module

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001409en_us&noframe

HP Dedicated iLO Management Module

Before you begin:

1. Review and follow Precautions .
2. Press the power button to put the server in standby.
3. Disconnect the power cord from the server.
4. Remove the access panel.
5. If necessary, remove the PCI riser cage with expansion boards.

HP Dedicated iLO management module removal

1. Remove the Torx T-15 screw that secures the iLO management module to the chassis pan.
2. Pull up on the module strap to remove it from the chassis.

HP Dedicated iLO management module replacement

1. Align the iLO module with the connector and standoff on the system board.
2. Press the module down until it is fully seated and replace the screw.

Power Supply

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001410en_us&noframe

Power supply

Before you begin:

1. Review and follow Precautions .
2. Press the power button to put the server in standby.
3. Disconnect the power cord from the server.
4. Remove the access panel.
5. Remove the HP Smart Storage Battery.

Power supply removal

1. Disconnect the power supply cables from the system board.
2. Remove the three Torx T-10 screws that secure the left side of the power supply to the chassis.
3. Remove the two Torx T-10 screws that secure the right side of the power supply to the chassis.
4. Lift the power supply out of the chassis.

Power supply replacement

1. Lower the power supply into the chassis and align the screw holes.
2. Replace the two Torx T-10 screws that secure the right side of the power supply to the chassis.
3. Replace the three Torx T-10 screws that secure the left side of the power supply to the chassis.
4. Connect the power supply cables to the system board.

Heatsink And Processor

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001411en_us&noframe

Heatsink and processor

Before you begin:

1. Review and follow Precautions .
2. Press the power button to put the server in standby.
3. Disconnect the power cord from the server.
4. Remove the access panel.
5. Remove the air baffle.

Heatsink and processor removal

1. Loosen the four captive Torx T-15 screws in a diagonal pattern to release the heatsink from the system board.
2. Lift and remove the heatsink.

Note: If you are reusing the processor or heatsink, remove the thermal grease with an alcohol swab.

1. Push down and in on the load lever marked "Open lever 1st" and allow it to rise to the spring tension position.
2. Push down and in on the load lever marked "Close lever 1st".
3. Raise the lever and allow the load plate and processor to rise to the spring tension position.
4. Grasp the processor handle and slide the processor out of the load plate.

Heatsink and processor replacement

Caution: THE PINS ON THE SYSTEM BOARD ARE VERY FRAGILE AND EASILY DAMAGED. To avoid damage to the system board, do not touch the processor or the processor socket contacts.

1. Grasp the processor handle and slide the processor into the channels on the load plate.

Important! Ensure that the processor is properly seated on the alignment pins on either side of the processor housing.

1. Press and hold the load plate down over the socket.
2. Lower the load lever marked "Close lever 1st" and place it securely into its latch.
3. Lower the load lever marked "Open lever 1st" and place it securely into its latch.
4. Apply thermal grease in a pattern of five big dots on the processor.
5. Position the heat sink over the processor and align the four retaining screws with the mounting holes.
6. Tighten the four retaining screws in a diagonal pattern.

System Board

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001412en_us&noframe

System board

Before you begin:

1. Review and follow Precautions .
2. Press the power button to put the server in standby.
3. Disconnect the power cord from the server.
4. Remove the access panel.
5. Remove the air baffle.
6. Remove the fan cage.
7. Remove the processor air baffle.
8. Remove the HP Smart Storage Battery.
9. Remove the DIMMs.
10. Remove the PCI riser cage with expansion boards.
11. Remove the HP Dedicated iLO Management Module.
12. Remove the heatsinks and processors.

System board removal

1. Remove all cables connected to the system board noting their location for reinstallation.
2. Remove the eleven Torx T-15 screws that secure the system board to the chassis pan.
3. Slide the system board toward the front of the chassis to disengage it from the rear I/O panel.
4. Lift and remove the system board.

System board replacement

1. Lower the system board into the chassis and align the connectors with the rear I/O panel.
2. Slide the board against the rear I/O panel and align the screw holes.
3. Replace the eleven Torx T-15 screws that secure the system board to the chassis pan.
4. Reconnect all cables to the system board.