HPE ProLiant ML350 G5 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



Front panel LEDs and buttons



Media device blank



Optical device



Diskette drive



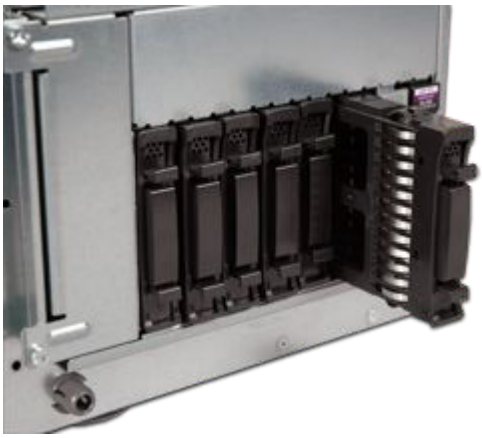
Front panel components



SAS and SATA hard drive



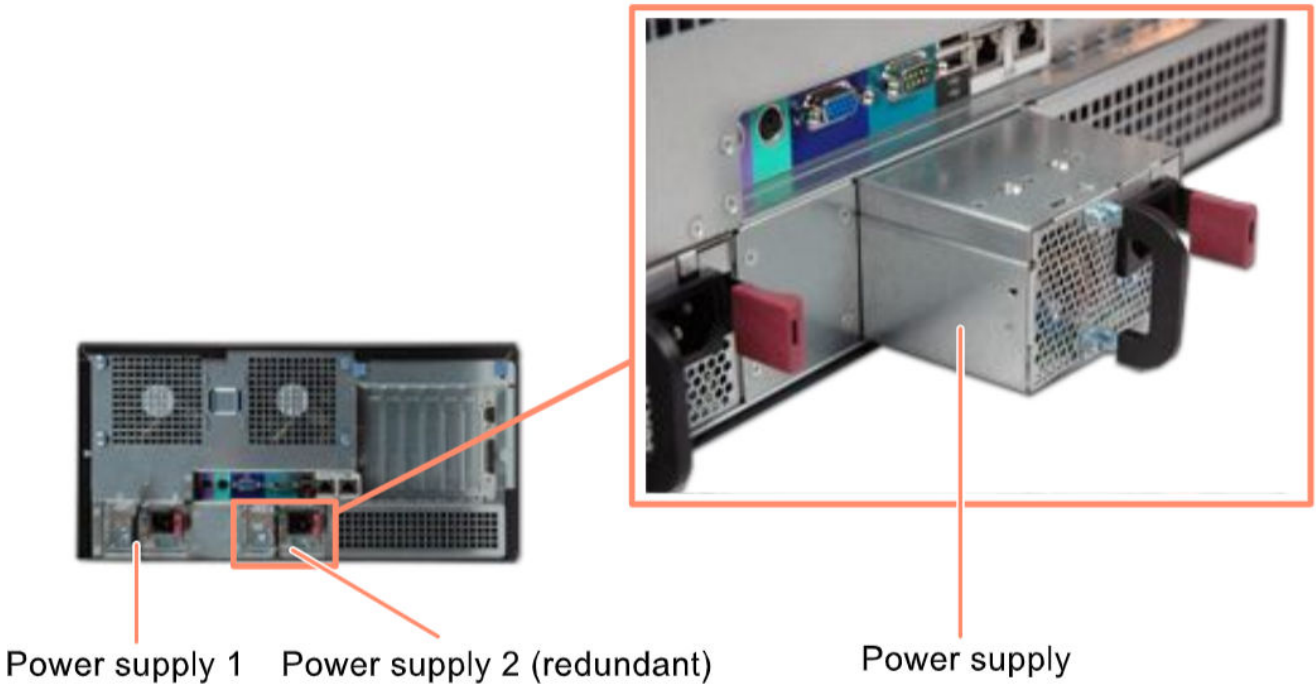
SAS and SATA hard drive blank



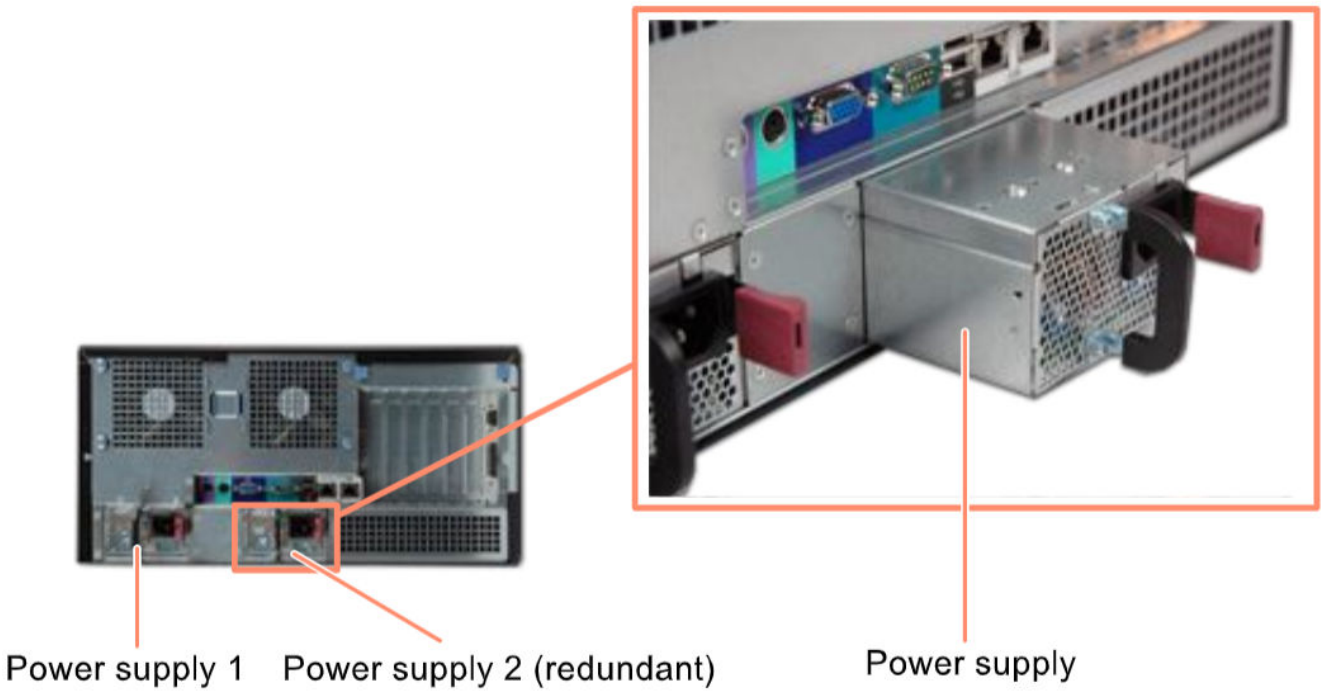
Back view



Power supply 1



Power supply 2



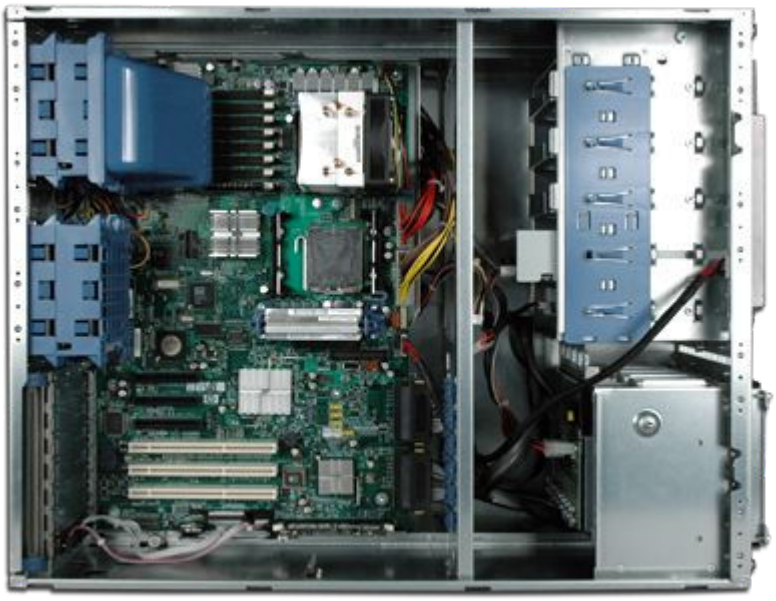
Rear panel LEDs and buttons



Left view



Internal view



System memory



Heat sink



Processor



Media retention bracket



Battery-backed write cache option



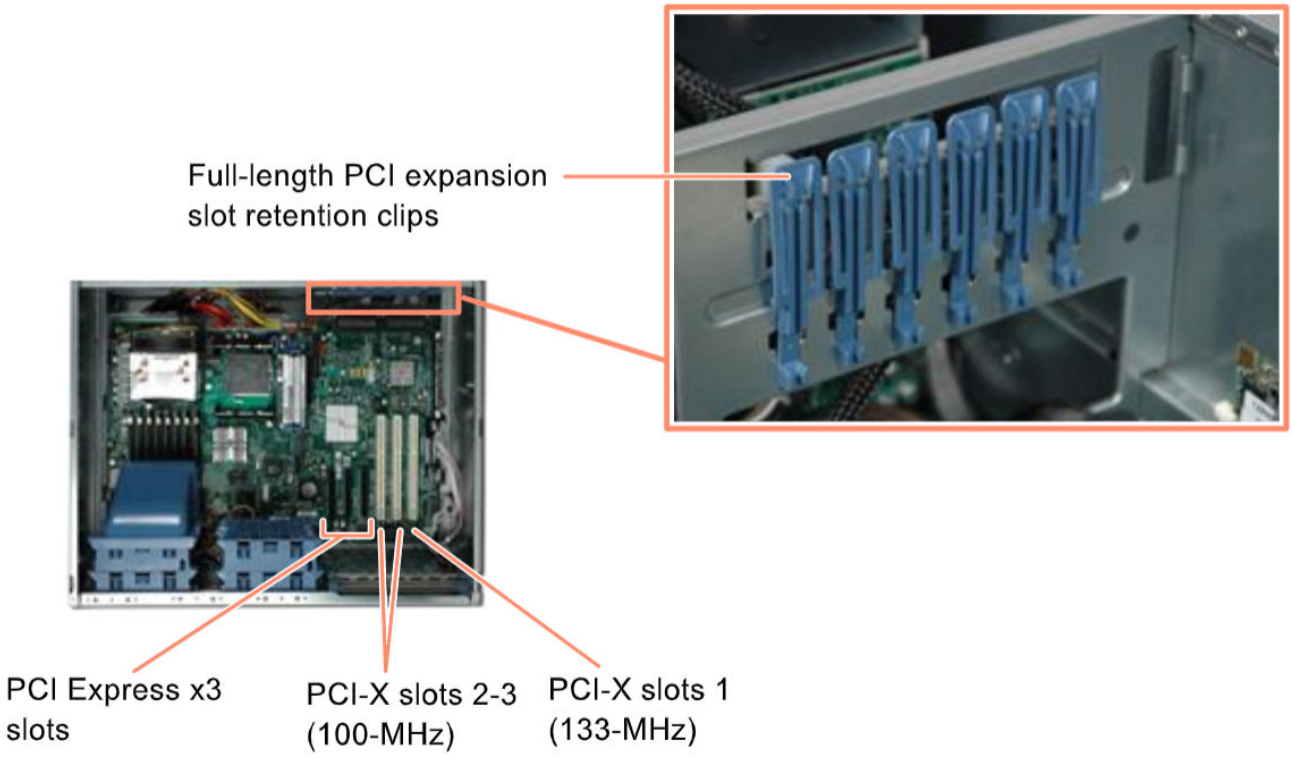
SAS and SATA backplane



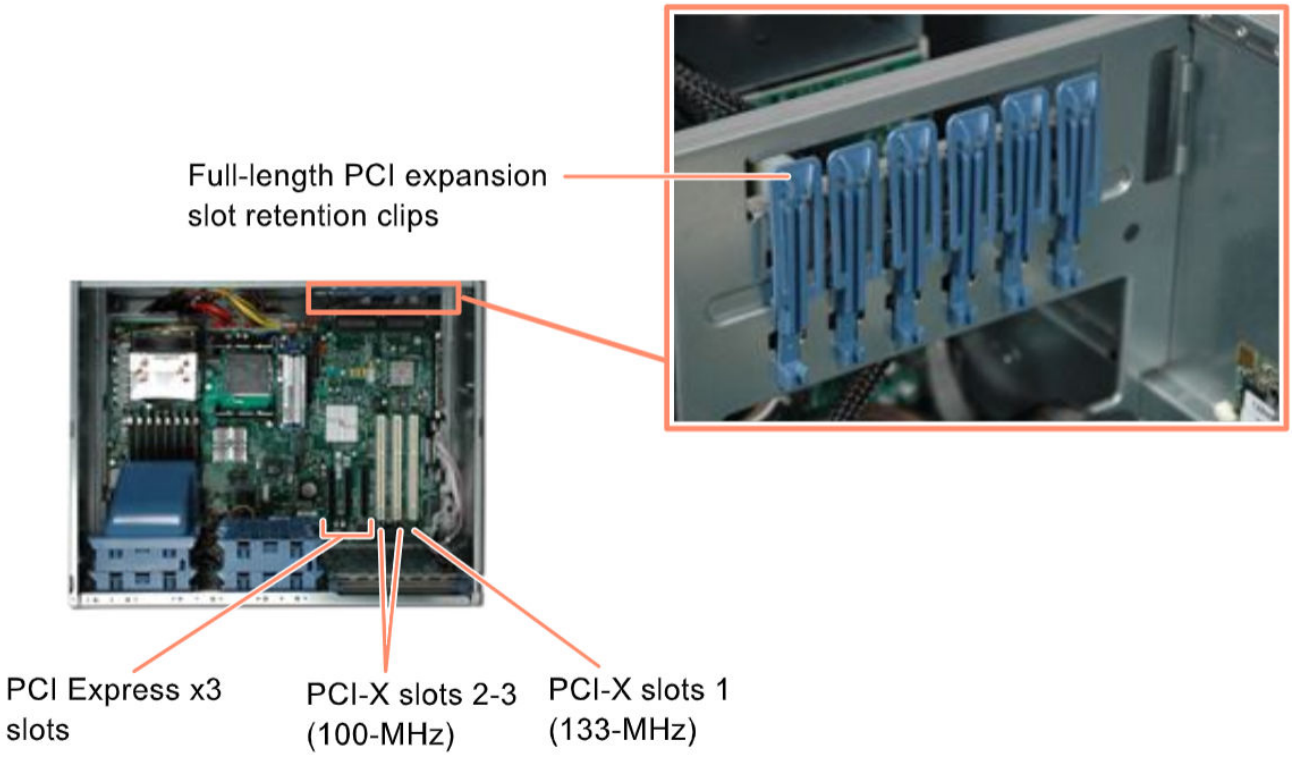
Parallel and second serial connector option



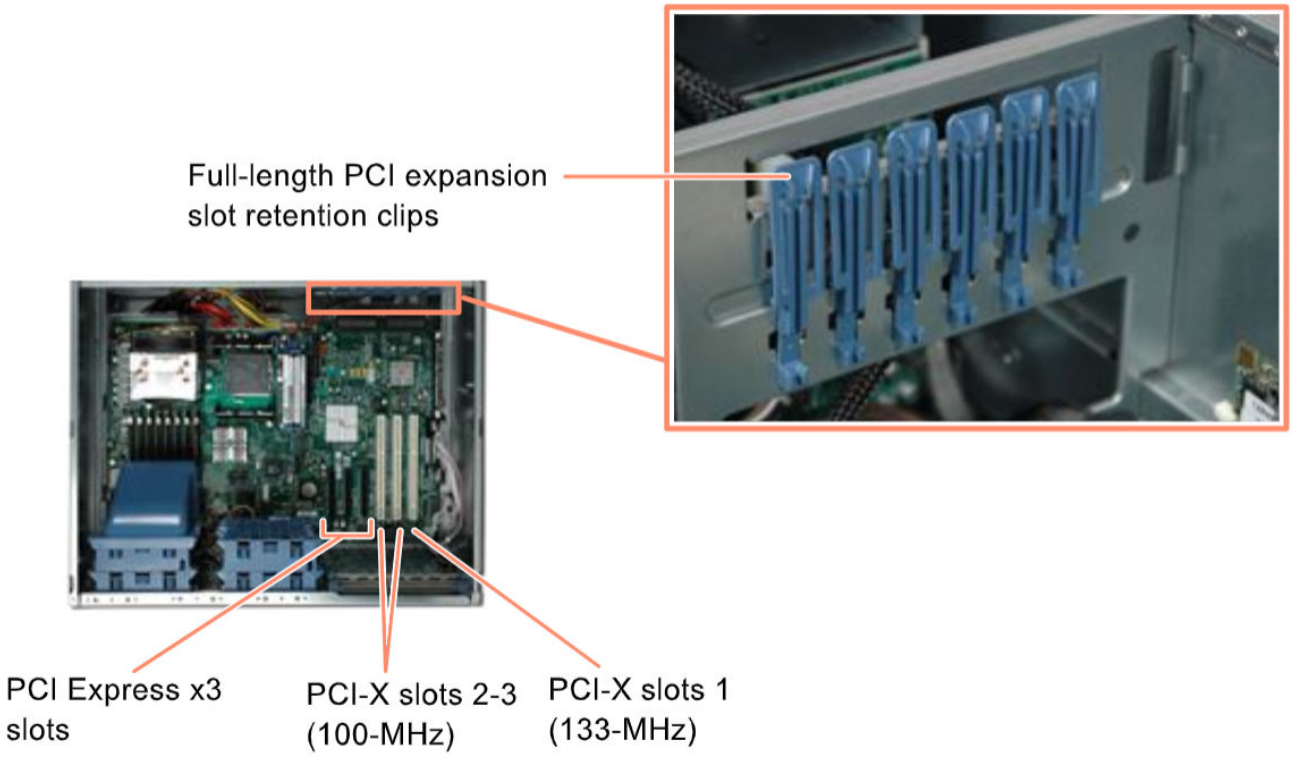
PCI-X slots 2-3 (100-MHz)



PCI-X slots 1 (133-MHz)



PCI Express x3 slots



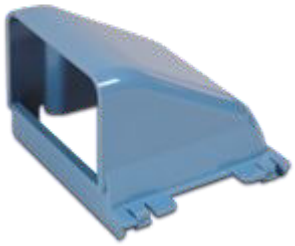
System board



Fans



DIMM baffle



Precautions

Blanking panels and blanks

Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage.

To prevent improper cooling and thermal damage, do not operate the server unless all bays including power supply and hard disk drive bays are populated with either a component or a blank.

Static electricity

Static electricity can damage electrical components. Before removing or replacing a component, touch a grounded metal object to discharge static electricity. Also observe the following precautions to prevent damage to electric components and accessories:

- To avoid hand contact, transport products in static-safe containers such as tubes, bags, or boxes.
- Protect all electrostatic parts and assemblies with conductive or approved containers or packaging.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free stations.
- Place items on a grounded surface before removing them from their container.
- Always be properly grounded when touching a sensitive component or assembly.
- Avoid contact with pins, leads, or circuitry.
- Place reusable electrostatic-sensitive parts from assemblies in protective packaging or conductive foam.

Disassembly

- During disassembly, label each cable as you remove it, noting its position and routing. This will make the replacement of the cables much easier, and will ensure that the cables are rerouted properly to protect the cables.
- Keep all screws with the units removed. The screws used in the computer are of different thread sizes and lengths; using the wrong screw in a component could damage the unit.

Tools And Screws

Tools used in removal and replacement

- A Torx screwdriver
- A flathead screwdriver

Screws

Torx-15 screws

Notes: If worn or damaged screwdriver tips are used, the small screw heads could become stripped.



Power to The Server

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Power to the Server

Note : For all non-hot plug procedures, you must remove power to the server.

1. Press the Power ON/Standby button.
2. Remove the power cord from the power supply.

Access Panel

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Before you begin

1. Remove power to the server.
2. Open the bezel door.

Removing the access panel

1. Using a T-15 screwdriver, turn the lock to the unlocked position.
2. Pull up on the latch to release the access panel.
3. Slide it back.
4. Lift it off of the server.

Replacing the access panel

1. Set the access panel about a half an inch from the rear so that the standoffs on the bottom of the access panel align with the slots on the chassis.
2. Slide the access panel toward the front of the server.
3. Press down on the locking latch to engage the access panel.
4. Relock the latch.

Bezel Door (Tower)

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Bezel door (Tower)

Removing the bezel dDoor

1. Unlock the bezel.
2. Rotate the bezel door away from the chassis.
3. Lift off the slots and pull it away from the server.

Replacing the bezel door

1. Set the tabs on the side of the bezel in the slots on the server.
2. Slide down.
3. Rotate the door back to the chassis to close.
4. Re-lock the bezel.

Media Blank

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Media blank

Before you begin

1. Remove the bezel.
2. Remove the access panel.

Removing the media blank

1. Lift the tab to unlock the blank from the drive bay.
2. Slide the blank out of the bay and away from the chassis.

Optical Device

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Optical device

Before you begin

1. Remove power to the server.
2. Open the bezel.
3. Remove the access panel.

Removing the optical device

1. Remove the power and data cables from the optical drive.
2. Lift the locking tab to unlock the device from the drive bay.
3. Slide the device out of the bay and away from the chassis.

Replacing the optical device

1. Insert the device into the bay so that the serial number label is on the top.
2. Slide back until the screw on the side of the device is under the locking tab and clicks into place.
3. Replace the power and data cables.

Diskette Drive

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Diskette drive

Before you begin

1. Remove power to the server.
2. Open the bezel.
3. Remove the access panel.

Removing the diskette drive

1. Disconnect the power and data cables.
2. Lift the locking tab to unlock the diskette drive from the bay.
3. Slide the device out of the bay and away from the chassis.

Replacing the diskette drive

1. Insert the drive into the bay so that the serial number label is on the top.
2. Slide back until the screw on the side of the drive is under the locking tab and clicks into place.
3. Reconnect the power and data cables.

System Fan Assembly

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System fan assembly

Before you begin

1. Remove power to the server.
2. Remove the bezel.
3. Remove the access panel.
4. Set server on its side.

Removing the system fan stack

1. Regardless of which fan assembly you need to remove, you must remove the system fan stack with the baffle to access and disconnect the power cables from the system board.
2. Press the single tab to release it from the slot on the chassis and rotate back to disengage two additional tabs from two slots on the chassis.
3. Disconnect the power cables.

4. Lift the stack out of the server.

Separating the fan assemblies

1. Press the single tab on one side to release it from the slot.
2. Lift the two tabs on the other end and release them from the slots.

Removing the fan in the bracket

1. Remove the fan from the bracket using a small flathead screwdriver.
2. Insert the flathead screwdriver under one of the locking tabs of the bracket and gently lift up on the tab to release the fan.

Replacing the fan in the bracket

1. Each fan bracket has (2) slots for routing the power cables. Route the cables on each fan and bracket that comprise an assembly so that cables route to one side of the bracket on one assembly and to the opposing side on the other assembly.
2. In this way, when you stack the two assemblies for installation in the server, the cables will both be oriented in the same direction.

Connecting the fan assemblies

1. Stack the brackets so that when you install the two assemblies in the server the cables on both will be oriented toward the system board.
2. Insert the two tabs of one assembly bracket into the slots on the other bracket.
3. Rotate to close.
4. Press and insert the single tab into the slot at the opposite end.

Replacing the system fan stack

1. Connect the power cables to the system board.
2. Insert the two tabs into the corresponding slots on the chassis.
3. Slide the assembly over to engage the tabs.
4. Insert the single tab into the slot and press to snap in place.
5. Connect the power cables to the system board of the system fan assembly with the baffle.
6. Insert the two tabs into the corresponding slots on the chassis.
7. Slide the assembly to engage the tabs.
8. Insert the single tab into the slot, and press to snap in place.

Caution : Take care in installing this assembly to ensure that the baffle doesn't catch on the DIMM.

Baffle

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Baffle

Before you begin

1. Remove power to the server.
2. Remove the bezel.
3. Remove the access panel.
4. Remove the system fan assembly with the baffle from the server.

Removing the baffle

1. Apply pressure on tab to disengage one tab and then the other from one side of the baffle.
2. Lift the baffle up and disengage the other tabs from the slot on the fan assembly.
3. Pull the baffle off of the assembly

Replacing the baffle

1. Set the baffle on the fan assembly so that the opening in the baffle is oriented in the same direction as the power cable.
2. Insert the tabs of the baffle into one set of slots.
3. Push together and engage the tabs in the second set of slots.

Hard Drive Blank

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Hard drive blank

Before you begin

1. Open the bezel.

Removing the hard drive blank

1. With index finger and thumb, grasp the blank and pull out of the rear of the server.

SATA Hard Drive

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SATA hard drive

Before you begin

1. Open the bezel door.

Removing the SATA hard drive

1. Press the ejector latch to release the handle.
2. Grasp the handle.
3. Slide the drive from the server.

Replacing the SATA hard drive

1. Slide the drive into the bay until it connects to the backplane.
2. Press the handle so that it snaps in place under the ejector latch.

Hard Drive Cage

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Hard drive cage

Before you begin

1. Remove power to the server.
2. Remove the bezel.
3. Remove the access panel.

4. Remove hard drives and blanks.

Removing the hard drive cage

1. Disconnect the power cable.
2. Disconnect the data cables from the system board.
3. Remove the (4) T-15 screws from the front of the server.
4. Slide the drive cage out of the server.

Replacing the hard drive cage

1. Slide the drive cage into the server so that the screw holes line up.
2. Replace the screws.
3. Reconnect the power cable.
4. Reconnect the data cables.

SATA Backplane

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SATA backplane

Before you begin

1. Remove power to the server.
2. Remove the bezel.
3. Remove the access panel.
4. Remove hard drives and blanks.
5. Remove the hard drive cage.

Removing the SATA backplane

1. Remove the two SATA cables from the backplane.
2. Remove (3) T-15 screws.
3. Slide the backplane to disengage it from the hard drive cage.
4. Lift it off of the drive cage.

Replacing the SATA backplane

1. Align the backplane on the drive cage tabs until it lines up with the (3) screw holes on the cage.
2. Replace the (3) screws.
3. Replace the SATA cables.

Serial And Parallel Connector

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Serial and parallel connector option

Before you begin

1. Remove power to the server.
2. Remove the bezel.
3. Remove the access panel.
4. Lay the server on its side.

Removing the serial and parallel connector option

1. Disconnect the serial and parallel connector cables from the system board.
2. Press locking tabs to unlock retaining bracket.
3. Rotate the bracket back.
4. Slide the serial connector up and out of the server.

Replacing the serial and parallel connector option

1. Insert in slot.
2. Slide down to seat.
3. Push the locking tabs from the rear of the server until they lock.
4. Reconnect the cables to the system board.

DIMM

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002866en_us&noframe

DIMM

Before you begin

1. Remove power to the server.
2. Remove the bezel.
3. Remove the access panel.
4. Lay the server on its side.
5. Remove system fan with baffle.

Removing a DIMM

1. Press down on the latches on either side of the DIMM.
2. Pull the DIMM up and out of server.

Replacing a DIMM

1. Align the DIMM with the slot and insert the DIMM firmly.
2. When fully seated, the DIMM slot latches lock into place.

Smart Array Module

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002867en_us&noframe

Smart Array Module

Before you begin

1. Remove power to the server.
2. Remove the bezel.
3. Remove the access panel.
4. Lay the server on its side.

Removing the Smart Array Module

1. Press down on the latches on either side of the Battery-Backed Write Cache.
2. Pull the Battery-Backed Write Cache up and out of server.

Replacing the Smart Array Module

1. Align the Battery-Backed Write Cache with the slot and press into place.
2. When fully seated, the BBWC slot latches lock into place.

Full-Length Expansion Board Bracket

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Full-length expansion board bracket

Before you begin

1. Remove power to the server.
2. Remove the bezel.
3. Remove the access panel.
4. Lay the server on its side.

Removing the full-length expansion board bracket

1. On one side of the center wall, lift tab to release it from the chassis.
2. Slide it down and lift it up and out of the chassis.

Replacing the full-length expansion board bracket

1. Set the tabs in the slot and lift up to lock the bracket in place.

Power Button And LED Board

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002869en_us&noframe

Power button and LED board

Before you begin

1. Remove power to the server.
2. Open the bezel.
3. Remove the access panel.

Removing the power button and LED board

1. Disconnect the power cable from the system board.
2. Remove the single T-15 screw that secures the board to the chassis.
3. Lift it away from the chassis and out of the server.

Removing the power button and LED board cover

1. Press to release tab on one side of the cover.
2. Squeeze the cover in the middle to release those tabs.
3. Rotate back and slide up to release the bottom tab.
4. Lift off of the front of the server.

Replacing the power button and LED board

1. Tilt the cover to insert the tab into the slot.
2. Rotate back and press down to connect the second tab and slide down to engage the tab in the slot.
3. Set the board on the inside of the chassis so that the USB connectors line up with the slots on the cover and the screw hole on the board lines up with the hole on the chassis.
4. Replace the screw.
5. Reconnect the power cable to the system board.

Heatsink Fan And Processor

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Heatsink fan and processor

Before you begin

1. Remove power to the server.
2. Remove the bezel.
3. Remove the access panel.
4. Lay the server on its side.

Removing the heatsink fan and processor

1. Disconnect the power cable from the system board.
2. Press to release and rotate the heatsink locking levers up and over about 160 degrees.
3. Lift the heatsink fan out of the server.
4. Press to release the processor locking lever and rotate it up.
5. Lift the processor locking cover.
6. Lift the processor up and out of the server.

Replacing or installing heatsink fan and processor

1. Install the processor on the socket so that the triangle on the processor lines up with the notch on the socket.
2. Close the processor locking cover.
3. Rotate and press down the processor locking lever to secure the cover and processor.
4. Set the heatsink fan on the processor so the fan faces the rear of the server.
5. Rotate down and press to secure each heatsink fan locking lever.

Processor Power Module

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Processor Power Module (PPM)

Before you begin

1. Remove power to the server.
2. Remove the bezel.
3. Remove the access panel.

4. Lay the server on its side.

Removing the processor power module

1. Press the latches back on either side of the Processor Power Module.
2. Pull the Processor Power Module up and out of server.

Replacing a processor power module

1. Align the Processor Power Module.
2. Press the Processor Power Module into the slot until the latches lock in place.

System Board

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002872en_us&noframe

System board

Before you begin

1. Remove power to the server.
2. Remove the bezel.
3. Remove the access panel.
4. Set the server on its side.
5. Remove the fans and baffle.
6. Remove the DIMMs.
7. Remove the processor and heatsink.
8. Remove the PPM.
9. Disconnect all cables.

Removing the system board

1. Loosen thumbscrew in the back and on the side of the system board.
2. Grasp handles.
3. Tilt the system board so that the thumbscrew on the side of the system is down.
4. Using the handles lift out of the server.

Replacing the system board

1. Insert the system board in the chassis so that the thumbscrew on the side of the board is tilted down.
2. Set on the channel so that the thumbscrew is about a half an inch from the screw hole and the rear connectors slide under the shelf on the rear of the chassis.
3. Slide it toward the rear of the server so that it clicks in place.
4. Tighten the thumbscrews.

Power Supply

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Power supply

Note : This is a hot plug procedure if more than one power supply is installed.

Before you begin

1. Remove power to the server.

Removing the power supply

1. Pull the power supply ejector latch to one side.
2. Grasp the handle and pull the power supply out of the server.

Replacing the power supply

1. Insert the power supply into the bay label side up.
2. Slide the power supply in until it is flush with the rear of the server.

DC Converter Power Backplane

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002874en_us&noframe

DC converter power backplane

Before you begin

1. Remove power to the server.
2. Remove the bezel.
3. Remove the access panel.
4. Lay the server on its side.
5. Disconnect the power cable from the optical and diskette drives.

Removing the DC converter power backplane

1. Loosen the thumbscrew.
2. Slide the board to the left.
3. Lift up and out of the server.

Replacing the DC converter power backplane

1. Set the backplane so the two slots on the board sit on the standoffs on the chassis.
2. Tuck the cables through the center wall.
3. Slide to the right.
4. Tighten the thumbscrew.