HPE ProLiant DL385 Gen10 Server - Parts Support Guide

Part Number: External
Published: 2020
Edition: 1

HPE ProLiant DL385 Gen10 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.

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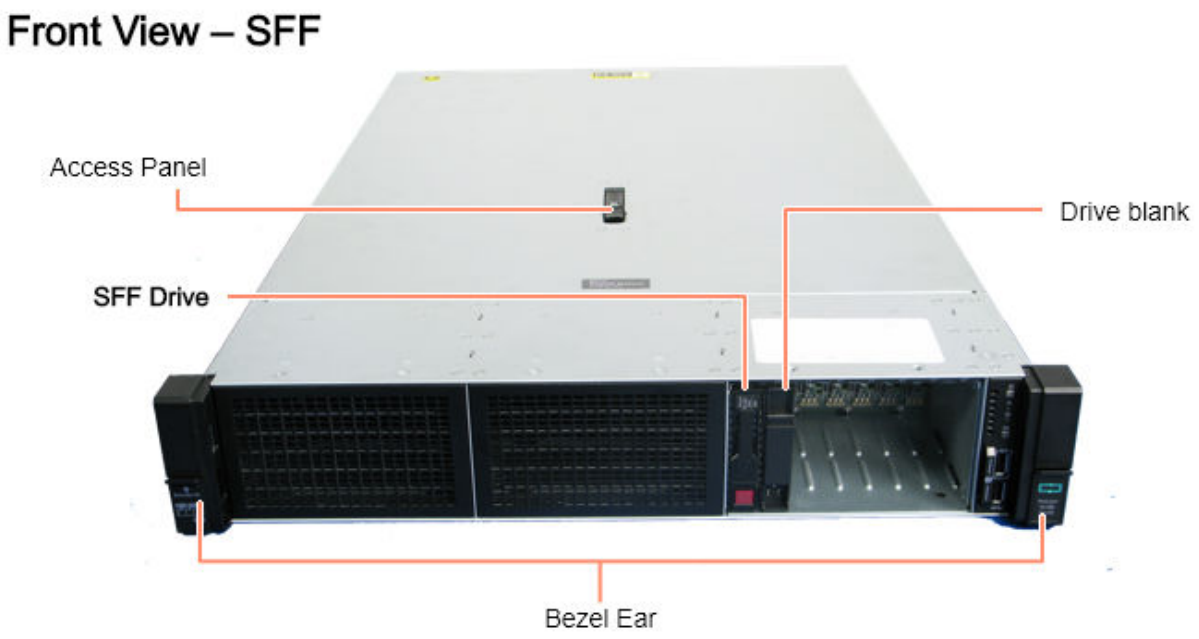
Front View SFF



SFF Drive

SFF Drive



Front View LFF

Front View – LFF



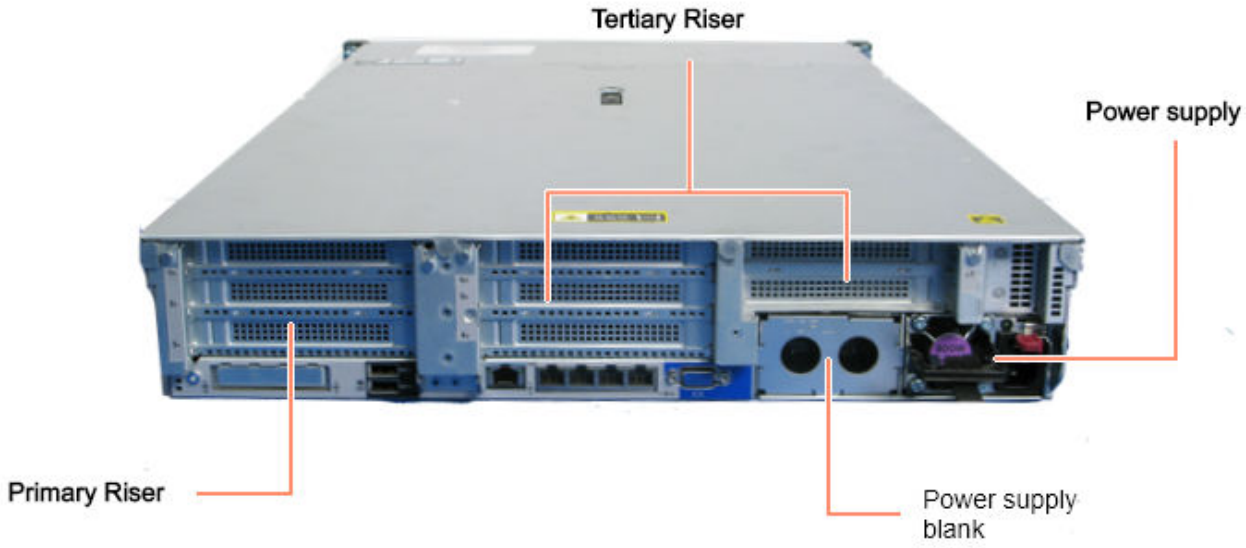
LFF Drive

LFF Drive

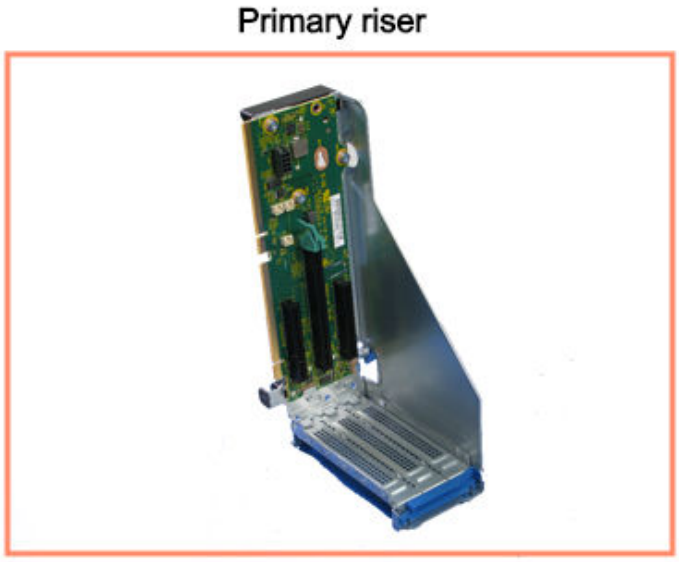


Rear View

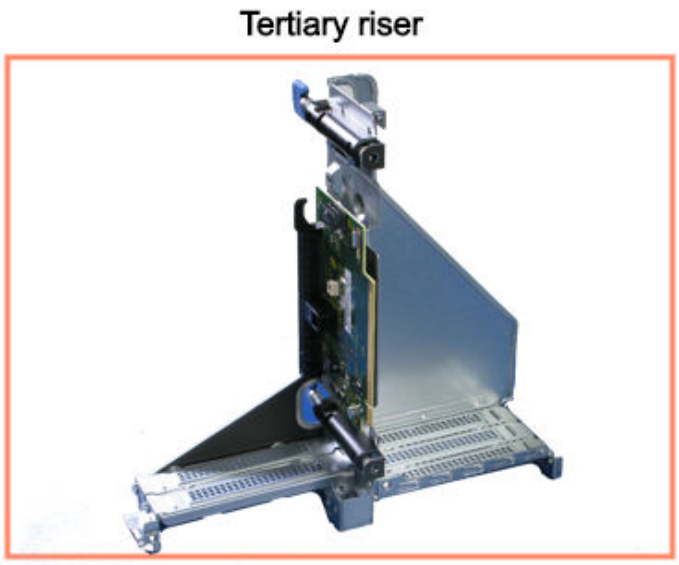
Rear View



Primary riser

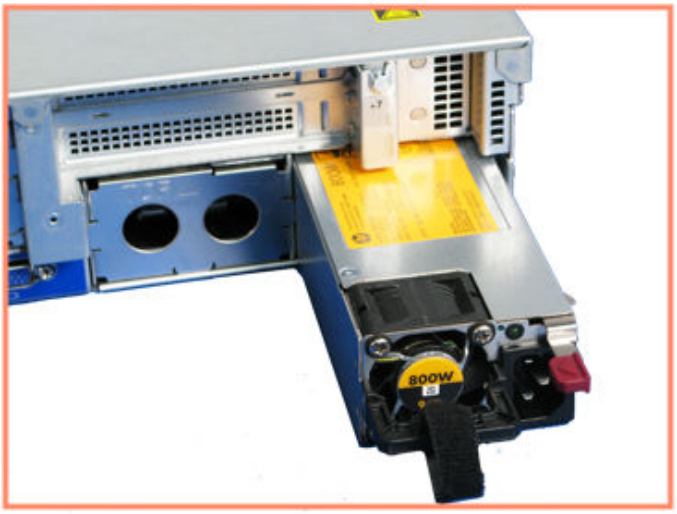


Tertiary riser

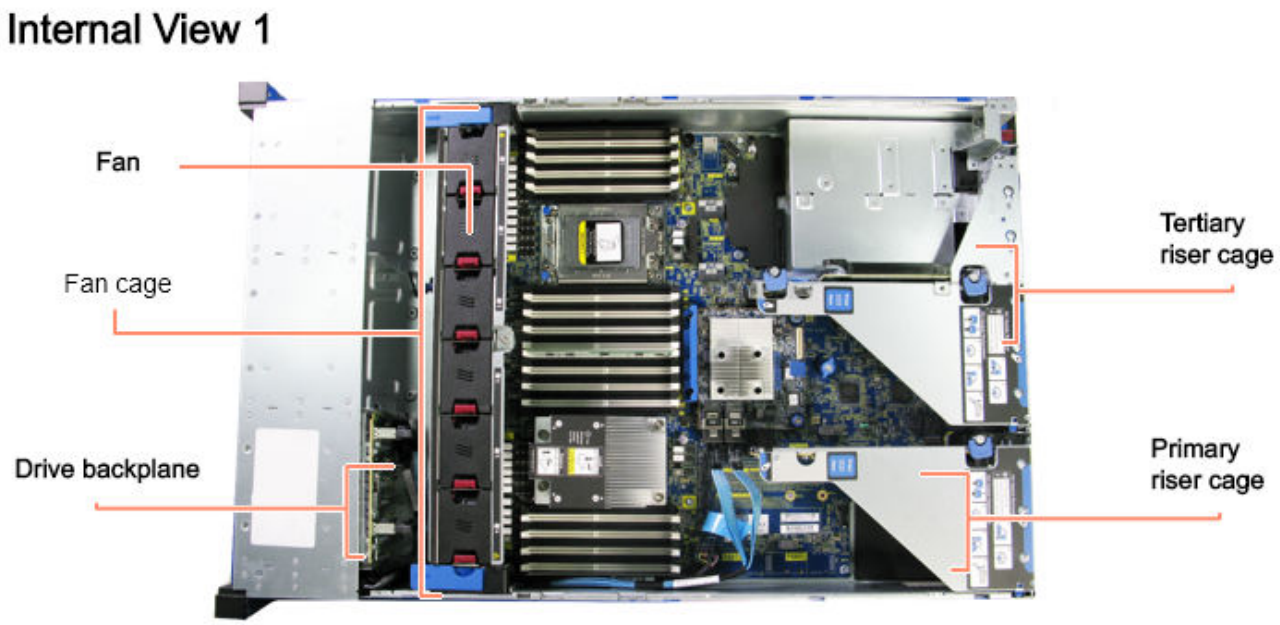


Power Supply

Power Supply



Internal View 1



Fan module

Fan module

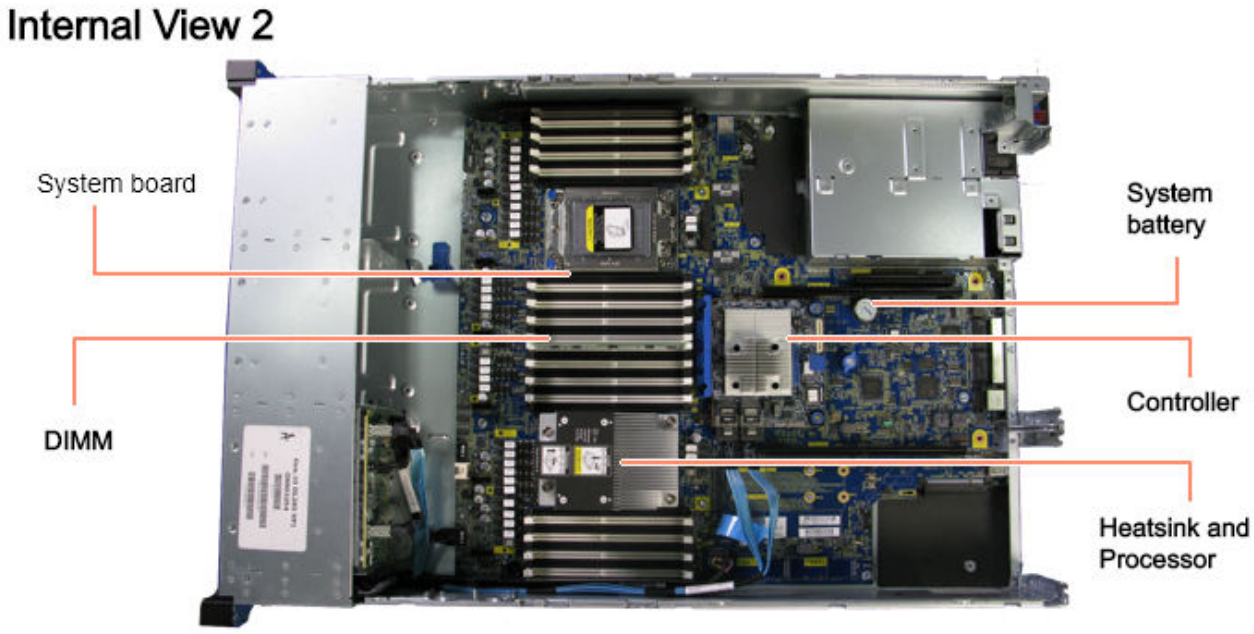


Drive backplane

Drive backplane

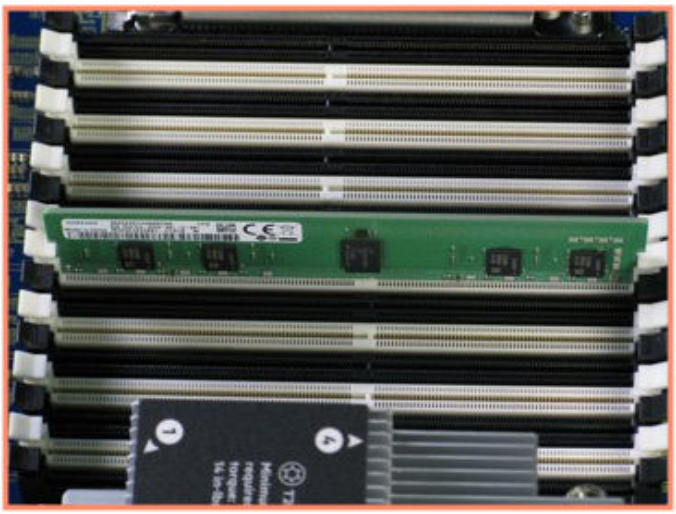


Internal View 2



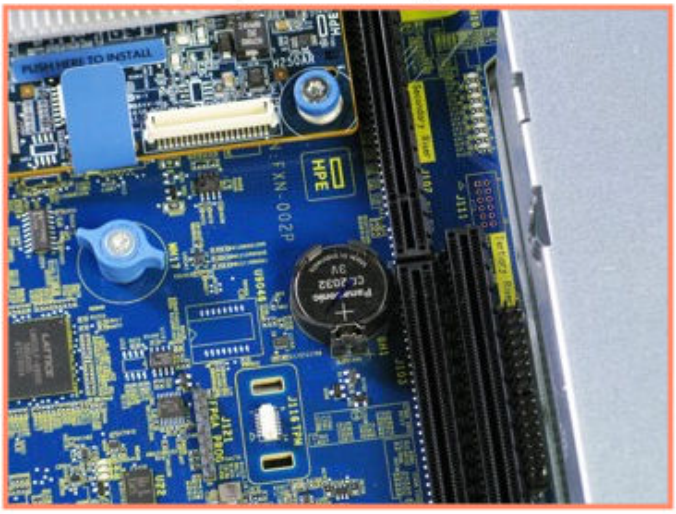
DIMM

DIMM



System battery

System battery



Controller

Controller



Heatsink and Processor

Heatsink and Processor



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:

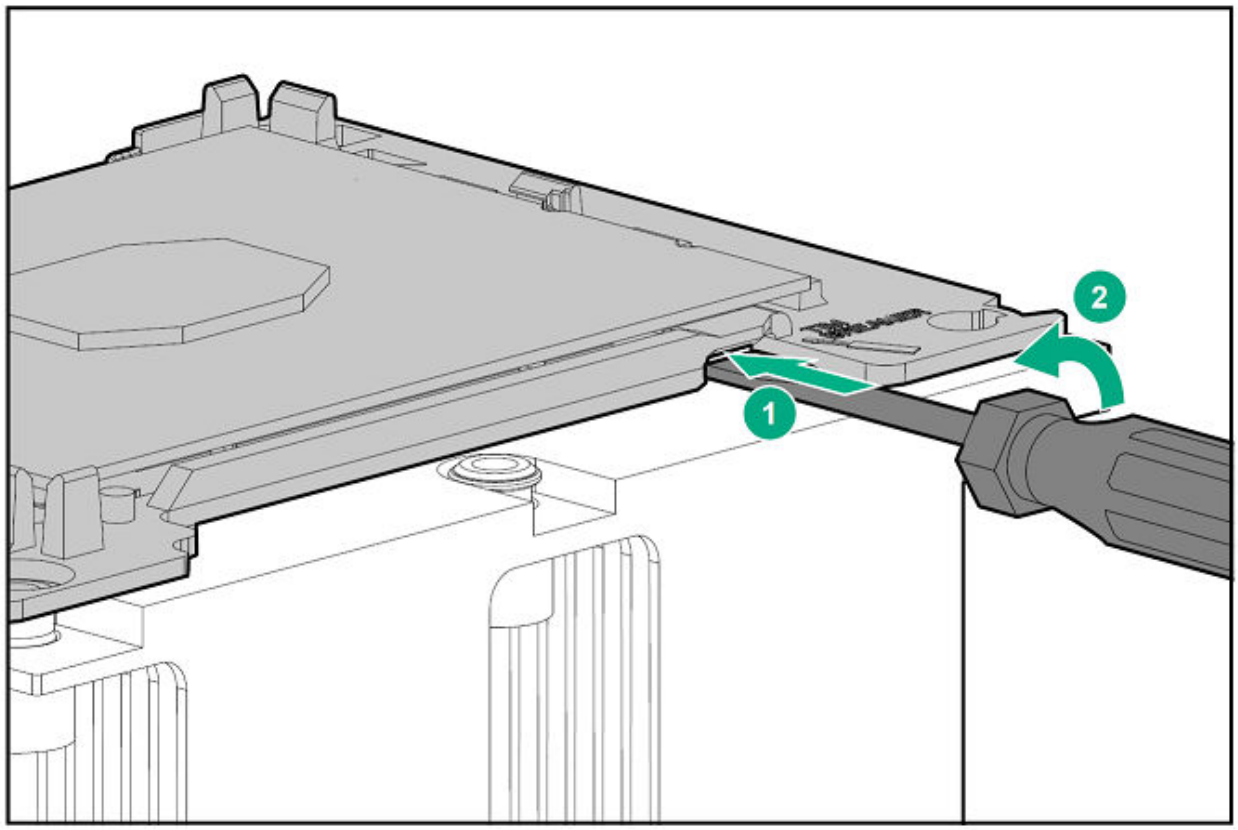
- T-10 Torx screwdriver
- T-15 Torx screwdriver
- T-20 Torx screwdriver
- Insight Diagnostics

Heatsink/Processor Notes

CAUTION:

- To reduce the risk of damage, repair should be done on a smooth flat surface and not over the system board. Take care not to drop anything in the socket pin field.
- To avoid damage to the processor or system board, only authorized personnel should attempt to replace or install the processor in this server.
- When handling the heatsink, always hold it along the top and bottom of the fins. Holding it from the sides can damage the fins.
- To prevent possible server malfunction and damage to the equipment, multiprocessor configurations must contain processors with the same part number.
- If installing a processor with a faster speed, update the system ROM before installing the processor. To download firmware and view installation instructions, see the Hewlett Packard Enterprise Support Center website: www.hpe.com/support/hpesc
- THE CONTACTS ARE VERY FRAGILE AND EASILY DAMAGED. To avoid damage to the socket or processor, do not touch the contacts.
- To avoid damage to the processor, processor socket and the system board, do not overtighten the Torx T-20 captive heatsink nuts. Using a manual screw driver, screw each heatsink nut down until it stops. Do not tighten the heatsink nut any further.

- When removing thermal grease from the processor make sure to hold the processor carrier from the sides. Holding the processor carrier on the ends increases the risk of dropping the processor.
- The thermal grease creates a bond between the CPU and the base of the heatsink, there is a breaker slot on the processor carrier oppostive of pin 1, shown here to break this bond. If using the breaker slot make sure the pry tool is between the processor carrier and the heatsink, To avoid damage to the component be sure to only pry or rotate the flat edge of the tool between the CPU metal cover and the heatsink base.



SATA/SAS Drive

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SATA/SAS Drive

Before you begin:

1. Review and follow Precautions

2. Determine the status of the drive from the drive LED definitions.
3. Back up all data on the drive.

SATA/SAS Drive removal

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

SATA/SAS Drive replacement

1. With the handle extended, slide the drive into the bay until the handle starts to engage.
2. Push the handle in to lock the drive in place.

NVMe Drive

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NVMe Drive

Before you begin:

1. Review and follow Precautions
2. Determine the status of the drive from the drive LED definitions.
3. Back up all data on the drive

NVMe Drive removal

Warning: The NVMe SSD is a PCIe BUS device. A device attached to a PCIe bus cannot be removed without allowing the device and bus to complete and cease the signal/traffic flow.

1. Push the Power button.
2. The Do Not Remove button will illuminate and flash. Do not push the ejector button while it is illuminated.
3. Wait until the flashing stops and the icon on the button is no longer illuminated.

4. Press the ejector button to release the handle.
5. Grasp the handle and slide the NVMe drive out of the bay.

NVMe Drive replacement

1. With the handle extended, slide the NVMe drive into the bay until the handle starts to engage.
2. Push the handle in to lock the NVMe drive in place.

SFF Flash Adapter

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SFF Flash Adapter

Before you begin:

1. Review and follow Precautions.
2. Power down the server.

SFF Flash Adapter removal

1. Push up on the ejection handle release latch to release the handle.
2. Grasp the handle and slide the SFF flash adapter out of the bay.

SFF Flash Adapter replacement

1. Slide the SFF flash adapter into the bay until the handle starts to engage.
2. Push the handle in to lock the adapter in place.

UFF Drive

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uFF Drive

Before you begin:

1. Review and follow Precautions.

uFF Drive removal

1. Pull back on the drive ejection latch to release the drive.
2. Grasp the drive and slide it out of the bay.
3. Remove the screw that secures the SSD card to the sled and allow it to rise to the spring tension position.
4. Pull the card out of the socket.

uFF Drive replacement

Note: The following video shows the Smart Carrier M.2 installed in an alternate server that is not the DL360 Gen10. However, the remove and replacement procedures are still accurate.

1. Match the notch on the SSD card with the key in the socket.
2. Push the card firmly into the socket.
3. Press the card down and replace the screw.
4. Slide the drive into the bay until it locks in place.

Drive Blank

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Drive Blank

Before you begin: Review and follow precautions

Drive Blank removal

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

Drive Blank replacement

1. Squeeze the release latch and slide the drive blank into the bay until it is fully seated.

LFF Drive

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LFF Drive

Before you begin:

1. Review and follow Precautions
2. Determine the status of the drive from the drive LED definitions.
3. Back up all data on the drive.

LFF Drive removal

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

LFF Drive replacement

1. With the handle extended, slide the drive into the bay until the handle starts to engage.
2. Push the handle in to lock the drive in place.

AC Power Supply

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AC power supply

Before you begin:

1. Review and follow Precautions.
2. Power down the server.
3. Disconnect each power cord from the power source.
4. Disconnect each power cord from the server.
5. Remove the server from the rack.

AC power supply removal

1. Push and hold the release latch to the left.
2. Grasp the handle and slide the power supply out of the bay.

AC power supply replacement

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

1. Slide the power supply 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. Power down the server.
3. Extend the server from the rack.

Access panel removal

1. If necessary, unlock the access panel latch with a Torx-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 access panel guide pins with the slots in the module sides.
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-15 screwdriver.

Hot-Plug Fan

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Hot-plug fan

Before you begin:

1. Review and follow Precautions.
2. Extend the server from the rack.
3. Remove the access panel

Hot-plug fan removal

CAUTION: Do not operate the server for long periods with the access panel open or removed. Operating the server in this manner results in improper airflow and improper cooling that can lead to thermal damage.

1. Press the release button and to release the hot-plug fan from the system board.
2. Pull the hot-plug fan straight up and out of the fan cage.

Hot-plug fan replacement

1. Lower the fan onto the fan guide pins and press down to pull seat the hot-plug fan.

Fan Cage

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002119en_us&noframe

Fan cage

Before you begin:

1. Review and follow Precautions.
2. Power down the server
3. Disconnect each power cord from the power source.
4. Disconnect each power cord from the server.
5. Extend or remove the server from the rack.
6. Remove the access panel.

Fan cage removal

1. Rotate the fan cage handles up to unlock the fan cage.
2. Lift the fan cage straight up and out of the chassis.

Fan cage replacement

1. Align the fan cage with the metal guides on the sides of the chassis and lower the cage onto the mounting brackets.
2. Rotate the handles down to the locked position.

Drive Cage

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Drive cage

Before you begin:

1. Review and follow Precautions.
2. Power down the server.
3. Disconnect each power cord from the power source.
4. Disconnect each power cord from the server.
5. Remove the drives and drive blanks.
6. Remove the access panel.
7. Remove the fan cage with the fans installed.

Drive cage removal

Note: There are different drive cage configurations available for this unit. This video depicts the 8 SFF drive cage but the procedures are accurate for all drive cage options.

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

Drive cage replacement

1. Slide the drive cage into the chassis.
2. Replace the two Torx-15 screws that secure the drive cage to the chassis pan.
3. Replace the cables to the drive backplane.

Drive Backplane

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002121en_us&noframe

Drive backplane

Before you begin:

1. Review and follow Precautions.
2. Power down the server.
3. Disconnect each power cord from the power source.
4. Disconnect each power cord from the server.
5. Remove the drives and drive blanks.
6. Remove the access panel.
7. Remove the drive cage.

Drive backplane removal

Note: There are different drive backplane configurations available for this unit. This video depicts the 8 SFF drive backplane but the procedures are accurate for all drive cage options.

1. Remove the two Torx T-15 screws that secure the drive backplane to the drive cage.
2. Slide the drive backplane out from under the retaining tabs on the drive cage and remove.

Drive backplane replacement

1. Position the drive backplane under the retaining tabs and align the screw holes.
2. Replace the two Torx-15 screws that secure the drive backplane to the drive cage.

LFF Drive Backplane

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002122en_us&noframe

Drive backplane

COMING SOON

DIMMs

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002123en_us&noframe

DIMM

Before you begin:

1. Review and follow Precautions.
2. Power down the server.
3. Disconnect each power cord from the power source.
4. Disconnect each power cord from the server.
5. Remove the server from the rack.
6. Remove the access panel.
7. Remove the cables from the 4-port NVMe mezzanine card.
8. Remove the processor mezzanine tray.

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

IMPORTANT: This server does not support mixing RDIMMs and UDIMMs. Attempting to mix these two types causes the server to halt during BIOS initialization.

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 module is fully seated.

PCI Riser Cage

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PCI riser cage

Before you begin:

1. Review and follow Precautions.
2. Power down the server.
3. Disconnect each power cord from the power source.
4. Disconnect each power cord from the server.
5. Remove the access panel.

PCI riser cage removal

1. Disconnect any cables attached to the expansion boards.
2. Lift the locking post handle and rotate it 180° counter-clockwise until the posts pop up and disengage 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 flanges on the riser cage with the slots on the back of the chassis.
2. Slide the riser cage down into the slots until the guide pins enter the notches in the chassis.
3. Press down on the riser cage until the board is fully seated.
4. Push the locking post down and rotate it clockwise 180° to lock the riser cage.
5. Connect any cables needed to expansion boards in the riser cage.

Secondary Riser Cage

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002125en_us&noframe

Secondary riser cage

Before you begin:

1. Review and follow Precautions.
2. Power down the server.
3. Disconnect each power cord from the power source.
4. Disconnect each power cord from the server.
5. Remove the access panel.

Secondary riser cage removal

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

Secondary riser cage replacement

1. Align the flanges on the riser cage with the slots on the back of the chassis.
2. Slide the secondary riser cage down into the slots until the guide pins enter the notches in the chassis.
3. Press down on the riser cage until the board is fully seated.
4. Push the locking post down and rotate it clockwise 180° to lock the riser cage.
5. Connect any cables needed to expansion boards in the riser cage.

PCI Riser Card

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002126en_us&noframe

PCI riser board

Before you begin:

1. Review and follow Precautions.
2. Power down the server.
3. Disconnect each power cord from the power source.
4. Disconnect each power cord from the server.
5. Remove the access panel.
6. Remove the PCI riser cage.
7. Remove any expansion boards from the riser cage.

PCI riser board removal

1. Remove the three Torx-15 screws that secure the riser card to the riser cage.
2. Slide the card away from the retaining pins on the cage and remove.

PCI riser board replacement

1. Making sure to align with the retaining pins, lower the riser card onto the riser cage.
2. Replace the three Torx-15 screws that secure the riser card to the riser cage.

PCIe Blank

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002127en_us&noframe

PCIe blank

Before you begin:

1. Review and follow Precautions.
2. Power down the server.
3. Disconnect each power cord from the power source.

4. Disconnect each power cord from the server.
5. Remove the access panel.
6. Remove the PCI riser cage.

PCIe blank removal

1. Rotate the PCI riser cage latch to the open position.
2. Grasp the PCIe blank and pull out to remove it.

PCIe blank replacement

1. Push the PCIe blank into the PCI riser cage.
2. Rotate the PCI riser cage latch to the closed position

Storage Controller

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002128en_us&noframe

Storage Controller

Before you begin:

1. Review and follow Precautions.
2. Power down the server.
3. Disconnect each power cord from the power source.
4. Disconnect each power cord from the server.
5. Remove the access panel.

Storage Controller removal

Note: While not necessary for the removal and replacement, both PCI riser cages have been removed to allow better access to the storage controller.

1. Disconnect the cables from the storage controller.

2. Loosen the two Tor-15 captive thumbscrews that secure the storage controller to the system board.
3. Pull up on the blue tab to disconnect the storage controller from the system board and then lift to remove.

Storage Controller replacement

1. Align the holes in the storage controller with the guide pins on the system board and lower it into place.
2. Press the storage controller down at the touch point until it is fully seated.
3. Tighten the two Torx-15 screws.
4. Re-connect the cables to the storage controller.

System Battery

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002129en_us&noframe

System battery

Before you begin:

1. Review and follow Precautions.
2. Power down the server.
3. Disconnect each power cord from the power source.
4. Disconnect each power cord from the server.
5. Remove the server from the rack.
6. Remove the access panel.

System battery removal

Note: While not necessary for the removal and replacement, the secondary PCI riser cage has been removed to allow better access to the storage controller.

1. Pull the retaining clip away from the battery.
2. Noting the orientation for replacement, lift the battery out of the socket.

System battery replacement

1. Noting the orientation from removal, insert the battery into the socket.

Smart Storage Battery

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002130en_us&noframe

Smart Storage Battery

Before you begin:

1. Review and follow Precautions.
2. Power down the server.
3. Disconnect each power cord from the power source.
4. Disconnect each power cord from the server.
5. Remove the server from the rack.
6. Remove the access panel.
7. Remove the fan cage with fans installed.

Smart Storage Battery removal

1. Remove Smart Storage battery cable from the system board.
2. Open the bracket securing the smart storage battery to the server chassis.
3. Noting the orientation for replacement, rotate the smart storage battery away from the latch and remove it.

Smart Storage Battery replacement

1. Noting the orientation from removal, toe the Smart Storage battery into the notch on the server chassis.
2. Press down to secure the smart storage battery into the bracket.

3. Replace the Smart Storage battery cable to the system board.

FlexLOM

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002131en_us&noframe

FlexLOM

Before you begin:

1. Review and follow Precautions.
2. Power down the server and remove it from the enclosure.
3. Remove the access panel
4. Remove the primary riser cage.

FlexLOM removal

1. Unscrew the Torx-15 captive screw securing the FlexibleLOM to the server chassis.
2. Using the touchpoints, push the FlexibleLOM away from the system board.
3. Remove the FlexibleLOM

FlexLOM replacement

1. Align the FlexibleLOM board with the connectors on the system board.
2. Using the touchpoints, push the FlexibleLOM towards the system board.
3. Tighten the Torx-15 captive screw securing the FlexibleLOM to the server chassis.

Heatsink And Processor

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002132en_us&noframe

Heatsink and Processor

Before you begin:

1. Review and follow Precautions.
2. Back up all data on the server.
3. Power down the server.
4. Remove the server from the frame.
5. Remove the access panel.

Heatsink and processor removal

Note: Before starting any removal or replacement, review the Heatsink/Processor notes
CAUTION: Loosen the heatsink nuts in the following order to prevent damage to the system board, connectors and heatsink nuts.

1. Completely loosen the Torx-20 captive heatsink nut labelled 4.
2. Completely loosen the Torx-20 captive heatsink nut labelled 3.
3. Completely loosen the Torx-20 captive heatsink nut labelled 2.
4. Completely loosen the Torx-20 captive heatsink nut labelled 1.
5. Carefully lift up to remove the heatsink from the system board.
6. Using an alcohol wipe, clean the old thermal grease from the processor and heatsink.
7. Remove the three Torx-20 screws securing the rail frame to the system board.
8. Rotate the rail frame to the open position.
9. Noting the orientation for replacement, grasp the processor tab and lift up to remove the processor from the system board.

Heatsink and processor replacement

Caution: THE PINS ON THE SYSTEM BOARD ARE VERY FRAGILE AND EASILY DAMAGED. To avoid damage to the processor or system board, do not touch the processor or processor socket contacts and perform any work on the new processor away from the unit.

1. Noting the orientation from removal, grasp the processor tab and lower the processor into the rail frame on the system board.
2. Rotate the rail frame to the closed position.

3. Replace the three Torx-20 screws securing the rail frame to the system board.
4. Apply thermal grease in a pattern of five big dots on the processor.
5. Noting the orientation from removal, position the heat sink over the processor. Make sure to align the heatsink nuts with the mounting holes on the system board.
   WARNING: The heatsink and processor replacement procedure has changed. To ensure optimal processor performance, you must fully screw down the heatsink nuts. Using a manual screwdriver, screw each heatsink nut down until it stops.
6. Completely tighten the Torx-20 captive heatsink nut labelled 1.
7. Completely tighten the Torx-20 captive heatsink nut labelled 2.
8. Completely tighten the Torx-20 captive heatsink nut labelled 3.
9. Completely tighten the Torx-20 captive heatsink nut labelled 4.

System Board

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System board

Before you begin:

1. Review and follow Precautions.
2. Power down the server.
3. Disconnect each power cord from the power source.
4. Disconnect each power cord from the server.
5. Remove the server from the rack.
6. Remove the power supplies
7. Remove the access panel.
8. Remove all riser cages.
9. Remove the Flex LOM.
10. Remove the storage controller.
11. Remove the DIMMs

2. Remove the system battery.
3. Remove the heatsinks and processors.
4. Remove all cables from the system board.

System board removal

1. Unscrew the Torx-15 captive screw securing the system board to the bottom of the chassis.
2. Slide the system board back until it stops.
3. Rotate the rear of the system board up and remove it from the chassis.

System board replacement

Note: After you replace the system board, you must re-enter the server serial number and the product ID.

1. Lower the front of the system board into the chassis.
2. Rotate the rear of the system board down into the chassis.
3. Slide the system board toward the rear of the chassis until the board is seated.
4. Tighten the Torx-15 captive screw securing the system board to the bottom of the chassis.