HPE ProLiant DL385 Gen10 Plus Server - FRU Parts Support Guide

Part Number: External
Published: 2020
Edition: 1

HPE ProLiant DL385 Gen10 Plus 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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IMPORTANT NOTE:

This Parts Support Guide can be used for the HPE ProLiant DL385 Gen10 Plus server and the HPE ProLiant DL385 Gen10 Plus v2 server. Both servers leverage the same components shown in this Parts Support Guide to include their location in the server chassis and their remove and replace procedures.

Front View



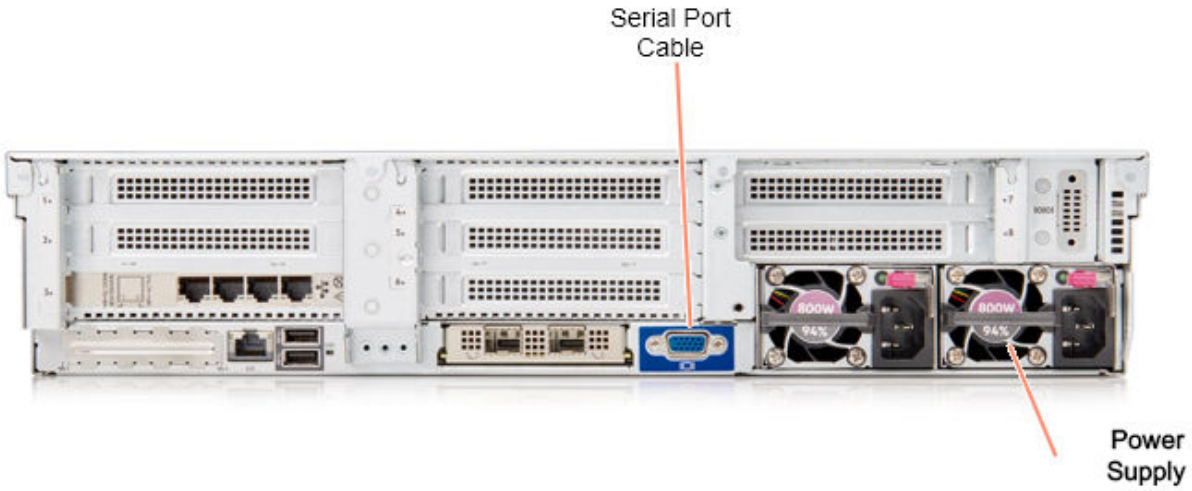
LFF Drive

LFF Drive



Back View

Back View



Power Supply

Power Supply



Internal View

Internal View



Fan

Fan



Riser

Riser



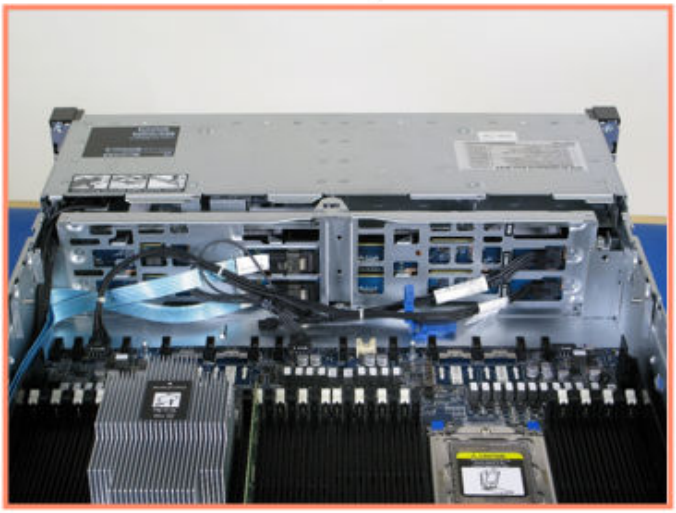
Internal View 2

Internal View 2



Drive Backplane

Drive Backplane



System Battery

System Battery



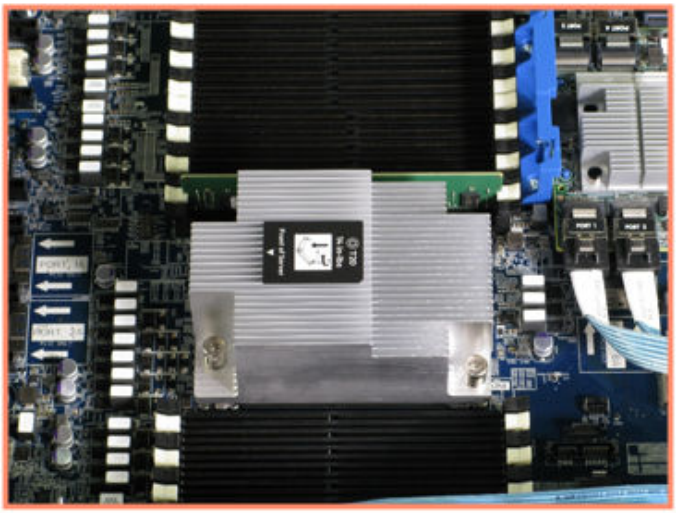
Smart Array Controller

Smart Array Controller



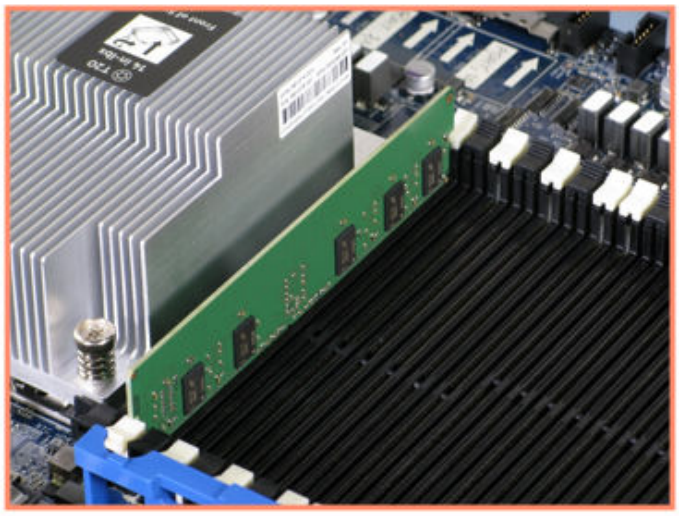
Heatsink and Processor

Heatsink and Processor



DIMMs

DIMMs



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

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.

LFF 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.

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

1. **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.**
2. 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.

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

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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.

LFF Drive Backplane Assembly

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Drive Backplane Assembly

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 air baffle.
8. Remove all drives.
9. Remove the fan cage with fans installed.

LFF Drive backplane assembly removal

1. Disconnect all cables from the backplane assembly.
2. Remove the three Torx-10 screws securing the backplane assembly to the server chassis.
3. Noting the orientation for replacement, lift up to remove the backplane assembly.

LFF Drive backplane assembly replacement

1. Noting the orientation for replacement, lower the backplane assembly into the server chassis.
2. Replace the three Torx-10 screws securing the backplane assembly to the server chassis.
3. Re-connect all cables from the backplane assembly.

LFF Drive Backplane

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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 server from the rack.
6. Remove the access panel.
7. Remove the air baffle.
8. Remove the drives.
9. Remove the fan cage with fans installed.
10. Remove thebackplane assembly.

LFF Drive backplane removal

1. Remove the two Torx T-10 screws that secure the drive backplane to the backplane assembly.
2. Noting the orientation for replacement, slide the backplane away and remove it.

LFF Drive backplane replacement

1. Noting the orientation for replacement, lower the backplane onto the backplane assembly.
2. Align the screw holes and replace the two Torx-10 screws that secure the drive backplane to the backplane assembly.

DIMMs

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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

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

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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 Board

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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.

Storage Controller

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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

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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.

Heatsink And Processor

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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.
6. Remove the air baffle.

Heatsink and processor removal

CAUTION: Loosen the heatsink nuts in the following order to prevent damage to the system board, connectors and heatsink nuts.

1. Loosen the four Torx-20 screws in a diagonal pattern to release the heatsink from the system board.
2. Carefully lift up to remove the heatsink
3. Using an alcohol wipe, clean the old thermal off of the processor and heatsink.
4. Remove the three Torx-20 screws in the following order :
5. Completely loosen the Torx-20 captive screw labelled ~3
6. Completely loosen the Torx-20 captive screw labelled ~2
7. Completely loosen the Torx-20 captive screw labelled ~1
8. Rotate the process cover into the open position
9. Noting the orientation for replacement, grasp the processor tab and carefully pull up to remove the processor.

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 processor cover on the system board.
2. Rotate the processor cover to the closed position.

3. Completely tighten the Torx-20 captive screw labelled ~1
4. Completely tighten the Torx-20 captive screw labelled ~2
5. Completely tighten the Torx-20 captive screw labelled ~3
6. Apply thermal grease in a pattern of eight big dots on the processor.
7. 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.
8. Tighten the four Torx-20 screws in a diagonal pattern.

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.
.0. Remove the storage controller.
.1. 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.