HPE ProLiant DL160 G5 Server - Parts Support Guide

Part Number: External
Published: 2020
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Abstract
This document gives a step-by-step instruction on how to remove and replace the components of the product.

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Precautions

Before you begin

1. Put on your electrostatic discharge (ESD) wrist strap to avoid damaging any circuitry.
2. Remove all devices (such as diskettes and CD-ROMs) from the computer.
3. Power off the computer and any peripheral devices that are connected to it.
4. Disconnect the power cord from the electrical outlet and then from the computer. When the computer is plugged into an AC power source, there is always voltage applied to the system board. You must disconnect the power cord from the power source before opening the computer to prevent system board or component damage.
5. Disconnect all peripheral device cables from the computer.

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 Materials

Tools used in removal and replacement

- T-10 Torx screwdriver
- T-15 Torx screwdriver

Power To The Server

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Power to the server removal

WARNING! For all non hot-plug procedures, you must power down the server.

1. If possible, use the operating system to gracefully shutdown the server.
2. Press the power button to toggle to Standby.

Note: In standby mode the power LED indicator is amber and the main power supply output is disabled. Standby does not completely disable or remove power from the system.

1. Disconnect the power cord from AC outlet and then from the server.
2. Check that the power LED indicator is turned off and that the fan noise has stopped.

Top Cover

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Before you begin

1. Remove power to the server.

Top middle cover removal

1. Loosen the T-15 captive screw on the rear panel.
2. Slide the cover about 1.25 cm (0.5 in) toward the rear of the unit.
3. Lift the top cover away from the chassis.

Top middle cover replacement

1. Align the standoffs on the top cover with the slots in the chassis.
2. Slide the cover toward the front panel to position it in place.
3. Tighten the T-15 captive screw on the rear panel to secure the top cover.

Top Middle Cover

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Before you begin

1. Remove power to the server.
2. Remove the top cover.

Top middle cover removal

1. Remove the four T-10 screws (one on each side of the chassis and two on the top middle cover) that secure the top middle cover to the chassis.
2. Hold the side of the top middle cover facing the back of the server and rotate it up.
3. Lift the top middle cover away from the chassis.

Top middle cover replacement

1. Align the tabs on the top middle cover and slide it into the chassis.
2. Rotate the top middle cover down.
3. Replace the four T-10 screws that secure the top middle cover.

Optical Drive Carrier

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Before you begin

1. Remove power to the server.
2. Remove the top cover.
3. Remove the top middle cover

Optical drive carrier removal

1. Remove the T-15 screw securing the carrier to the chassis.
2. Push the carrier toward the front of the chassis.
3. Pull the carrier out of the chassis.

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

Optical drive carrier replacement

1. Populate the carrier with an optical device or blank.
2. Slide the carrier into the server.
3. Secure the carrier to the chassis with the T-15 screw.
4. If populated with an optical drive, connect the power and data cables to the drive.

Hot-Plug SAS/SATA Hard Drive

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Note : This system supports both non-hot-plug and hot-plug SATA drives, as well as hot-plug SAS drives.

Hot-plug SAS/SATA hard drive removal

1. Press the ejector latch to release the handle.
2. Grasp the handle and pull out.
3. Slide the drive out of the server.

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

Hot-plug SAS/SATA hard drive replacement

1. Position the hard drive with the label facing up.
2. Slide the drive into the bay until it connects to the backplane.
3. Push the handle in until it snaps in place under the ejector latch.

Air Baffle

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Before you begin

1. Remove power to the server.
2. Remove the top cover

Air baffle removal

1. Lift the baffle to disengage the tabs from the slots in the chassis wall.
2. Remove the air baffle from the chassis

Air baffle replacement

1. Align the air baffle with the components in the chassis and the slots in the chassis wall.

2. Press the air baffle down until the tabs click into place.

Heat Sink

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Before you begin

1. Remove power to the server.
2. Remove the top cover.
3. Remove the air baffle.

Heat sink removal

1. Loosen the four T-15 spring-loaded screws.
2. Lift the heat sink away from the system board.

Note: The thermal grease between the processor and heat sink should be replaced every time the heat sink is removed.

If you are reinstalling the original heat sink or processor, remove the old thermal grease from the heat sink and processor by scraping it off with a straight plastic edge and alcohol swab. Then use an alcohol swab to remove any thermal grease residue. Use a thermal grease applicator to apply the proper amount of grease along one edge of the processor. Spread the thermal grease evenly over the top of the processor.

New replacement heat sinks have pre-applied thermal grease, so if you are installing a replacement heat sink, remove the old thermal grease from the processor as described before installing.

Heat sink replacement

1. Align the heat sink screws to the mounting holes in the system board.
2. Tighten the four T-15 spring-loaded screws.

Processor

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Before you begin

1. Remove power to the server.
2. Remove the top cover.
3. Remove the air baffle.
4. Remove the heat sink

Processor removal

1. Push down and out on the processor load plate lever, and then raise the lever until it is fully open.
2. Lift the processor load plate.

Important! Before removing the processor, take special note of the notches on two sides of the processor. The processor must be installed in the same orientation in which it was removed or it may be destroyed .

1. Lift the processor by the edges to remove it from the system board.

Processor replacement

1. Align the processor in the correct orientation and carefully place it straight down into the socket.
2. Lower the load plate over the processor socket.
3. Lower the load plate lever and place it securely into its latch.

Note: The thermal grease between the processor and heat sink should be replaced every time the heat sink is removed.If you are reinstalling the original heat sink or processor, remove the old thermal grease from the heat sink and processor by scraping it off with a straight plastic edge and alcohol swab. Then use an alcohol swab to remove any thermal grease residue. Allow the alcohol to dry completely before proceeding. Use a thermal grease applicator to apply the proper amount of grease along one edge of the processor. Spread the thermal grease evenly over the top of the processor.

Memory

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Before you begin

1. Remove power to the server.
2. Remove the top cover.
3. Remove the baffle if it is blocking access to the memory module.

Memory removal

1. Open the latches fully at both ends of the memory module sockets.
2. Lift the memory module up and out of the server.

Memory replacement

1. Align the notch on the memory module with the key in the module socket.
2. Press it fully into the socket until the latches lock in place.

PCI Cage

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Before you begin

1. Remove power to the server.
2. Remove the top cover

PCI cage removal

1. Loosen the two flat-blade captive screws that secure the ends of the PCI cage to the chassis.
2. Lift the PCI cage up.
3. Disconnect any cables from the installed expansion cards.
4. Remove the PCI cage from the chassis.

PCI cage replacement

1. Connect any cables to the installed expansion cards.
2. Align the PCI cage to the system board expansion slot, and the PCI cage guide pins with the chassis slots.
3. Press the PCI cage down to ensure full connection to the system board.

4. Tighten the two flat-blade captive screws to secure the PCI cage to the chassis.

Expansion Card

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Before you begin

1. Remove power to the server.
2. Remove the top cover.
3. Remove the PCI cage

Expansion card removal

1. Remove the T-15 screw that secures the expansion card to the PCI cage.
2. Pull straight out on the card to remove it from the PCI slot on the riser board.

CAUTION! If the expansion card is removed, a slot cover or another expansion card must be reinstalled to maintain proper cooling.

Expansion card replacement

1. Align the expansion card with the slot on the riser board. Be sure that the bracket on the card is aligned with the open slot in the PCI cage.
2. Press the expansion card straight into the slot on the riser board.
3. Replace the T-15 screw that secures the expansion card to the PCI cage.

Riser Board

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Before you begin

1. Remove power to the server.
2. Remove the top cover.

3. Remove the PCI cage.
4. Remove any expansion cards connected to the riser board being removed

Riser board removal

1. Remove the two T-15 screws that secure the riser board to the PCI cage.
2. Pull the riser board away from the PCI cage

Riser board replacement

1. Align the two riser board screw holes to the standoffs on the PCI cage.
2. Replace the two T-15 screws that secure the riser board to the PCI cage

System Fan

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Before you begin

1. Remove power to the server.
2. Remove the top cover.
3. Remove the baffle if it is blocking access to the fan connector on the system board

System fan removal

1. Disconnect the system fan cable from the system board.
2. Remove the fan cable from the cable clip on the chassis.
3. Grasp the fan and lift it up while threading the fan cable out through the chassis wall.
4. Remove the fan from the chassis.

System fan replacement

1. Thread the fan cable in through the chassis wall while lowering the fan into position.

2. Position the fan with the arrow pointing to the back of the server.
3. Push down on the fan until it clicks into place.
4. Return the fan cable to the cable clip on the chassis.
5. Connect the system fan cable to the system board.

System Board

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Before you begin

1. Remove power to the server.
2. Remove the top cover.
3. Remove the air baffle.
4. Remove the heat sink.
5. Remove the processor.
6. Remove the PCI cage.
7. Remove the memory modules.

System board removal

1. Disconnect all cables from the system board, noting their location for reinstallation.
2. Remove the nine T-15 screws that secure the system board to the chassis.
3. Slide the system board toward the front of the server to release the I/O connectors from the back panel.
4. Lift the system board up and out of the chassis

System board replacement

1. Lower the system board into the chassis.
2. Align the system board I/O connectors to their openings and slide the system board into place. The nine screw holes on the chassis should align with the system board.

3. Replace the nine T-15 screws that secure the system board to the chassis.
4. Connect all cables to the system board.

USB And Front Panel LED

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Before you begin

1. Remove power to the server.
2. Remove the top cover.
3. Remove the top middle cover.
4. Remove the hard drive or blank from the 4 th hard drive bay.
5. Remove the PCI card cage.

USB and front panel LED removal

1. Remove the USB and front panel LED cables from the system board.
2. Remove the three T-10 screws from the top of the hard drive cage.
3. Pull the assembly out through the back of the hard drive cage while threading the USB and front panel LED cables out through the openings in the chassis walls.
4. Remove the assembly from the chassis

USB and front panel LED replacement

1. While threading the USB and front panel LED cables in through the openings in the chassis walls, slide the USB and front panel LED assembly in through the back of the hard drive cage so that the assembly is flush with the front bezel and the screw holes are aligned.
2. Replace the three T-10 screws securing the assembly to the hard drive cage.
3. Connect the USB and front panel LED cables to the system board.