HPE ProLiant BL2x220c G7 Server Blade - 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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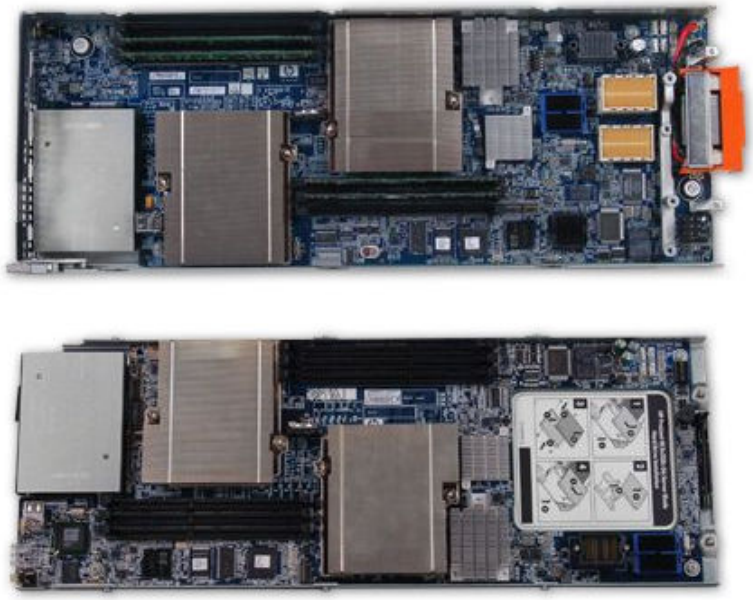
Front view



Back view



Internal view



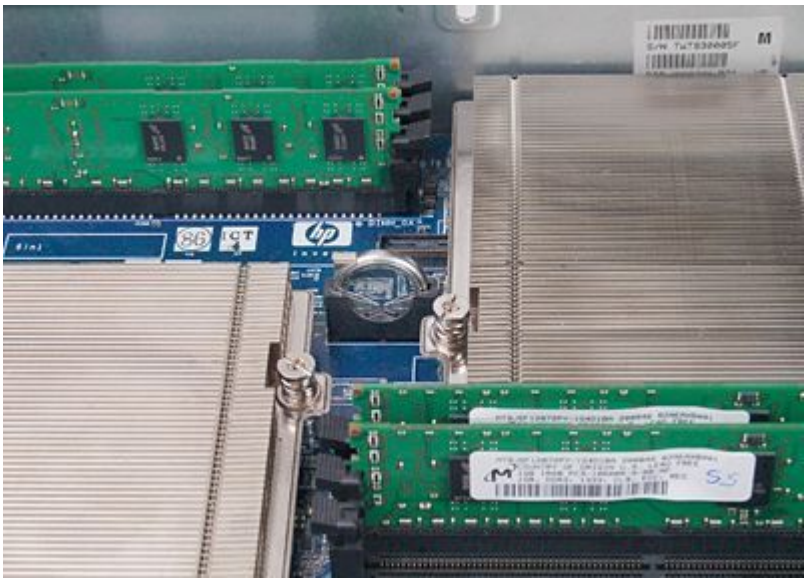
Subtopics

- **DIMMs**
- **Battery**
- **System board**
- **Heatsink and Processor**
- **Hard drive**
- **Server release lever**

DIMMs



Battery



System board

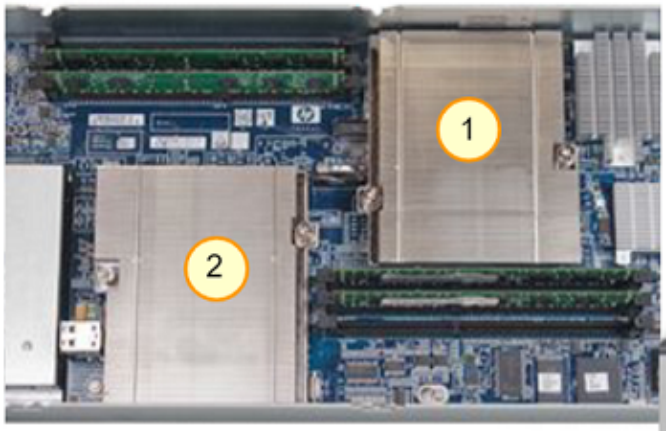
Server A



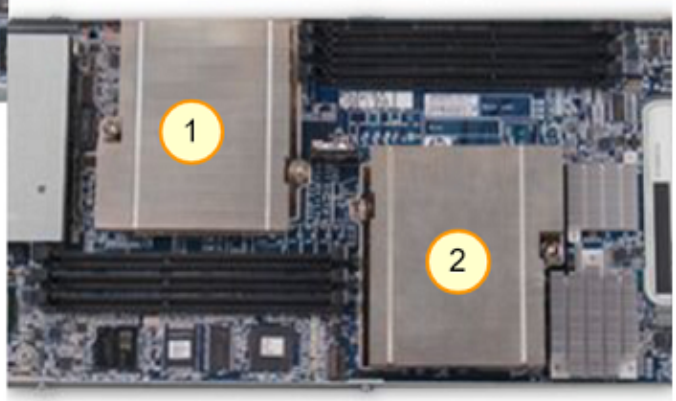
Server B



Heatsink and Processor



Server A Heat sinks and processors

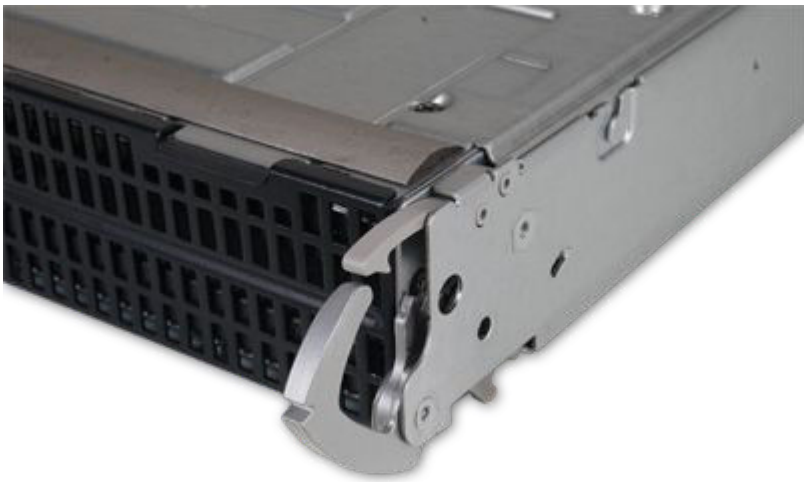


Server B Heat sinks and processors

Hard drive



Server release lever



Precautions

Before you begin

1. Review static electricity, disassembly, and safety considerations.
2. Power down the server blade using one of the three methods detailed below.
3. Put on your electrostatic discharge (ESD) wrist strap to avoid damaging any circuitry.
4. Remove the server blade from its enclosure and place on a flat, level surface.

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

- Torx T-10 & T-15 screwdriver (included with the server)
- P1 Philips-head screwdriver
- Large flat-head screwdriver

Safety Considerations

Preventing electrostatic discharge

To prevent damaging the system, be aware of the precautions you need to follow when setting up the system or handling parts. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.To prevent electrostatic damage:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

Server blade warnings and cautions

WARNING! To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

System Battery Replacement Considerations

System battery replacement considerations

- Replace the battery with the same type as the battery recommended by HP. Use of another battery may present a risk of fire or explosion.
- A risk of fire and chemical burn exists if the battery is not handled properly. Do not disassemble, crush, puncture, or short external contacts, or expose the battery to temperatures higher than 60°C (140°F).
- Do not dispose of used battery in water or fire. Dispose of used batteries according to manufacturer's instructions.
- Loss of BIOS settings occurs when the battery is removed. BIOS settings must be reconfigured whenever the battery is replaced.

Preparation

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Preparation

Before you begin: Review Safety considerations .

Power down the servers

1. Before powering down the server blade for any upgrade or maintenance procedures, perform a backup of critical server data and programs on each server.
2. Depending on the Onboard Administrator configuration, use one of the following methods to power down the server blade:
   - Use a virtual power button selection through iLO 2 for both server A and server B.This method initiates a controlled remote shutdown of applications and the OS before the server blade enters standby mode.
   - Press and release the server A and server B Power On/Standby buttons.This method initiates a controlled shutdown of applications and the OS before the server blade enters standby mode.
   - Press and hold the server A and server B Power On/Standby buttons for more than 4 seconds to force the server blade to shut down.This method forces the server blade to enter standby mode without properly exiting applications and the OS. It provides an emergency shutdown method in the event of a hung application.

Caution! To prevent damage to the operating system, always power down both server A and server B before removing the server blade from the enclosure.

IMPORTANT! When the server blade is in standby mode, auxiliary power is still being provided. To remove all power from the server blade, remove the server blade from the enclosure.After initiating a virtual power down command, be sure that both server A and server B are in standby mode by observing that the system power LEDs are amber.

Remove the server blade from the enclosure

1. Press the release lever away from the server blade to release the server blade handle.
2. Use the server blade handle to slide the server blade out of the enclosure and place it on a flat, level work surface.

Separating Server A And B

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Separating server A and B

Before you begin: Review Safety considerations . Power down the servers and remove the server blade from the enclosure.

Separate Servers

WARNING! To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

Caution! To prevent damage to electrical components, properly ground the server blade before beginning any installation procedures. Improper grounding can cause ESD.

Caution! The jackscrews control the unseating and seating of critical system connectors. Failure to use the jackscrews to remove and replace the server B assembly can cause the system boards to fail.

1. Loosen one of the captive Torx T15 jackscrews with approximately six turns.
2. Loosen the other captive Torx T15 jackscrew completely.
3. Finish loosening the first captive Torx T15 jackscrew completely.
   Caution! To prevent damage to the server blade, do not apply pressure to the enclosure connector.
4. From the rear of the server blade, while holding down server A assembly, lift server B assembly to separate the two server assemblies and unseat the connectors between the server system boards.
5. Gently rotate up, pull out, and lift server B assembly away from server A assembly. Place server B assembly on a flat work surface with the system board facing up.

Combine servers

IMPORTANT! To avoid possible damage to the serial label pull tab, extend the serial label pull tab approximately 1 cm or half an inch before installing the server B assembly on the server A assembly.

1. Toe in the front tabs of the server B assembly and interleave them with the front tabs of server A assembly.
2. Carefully rotate server B assembly down, aligning the side guide pins, and seating the power and signal connectors between the two server system boards.
   Caution! The jackscrews control the unseating and seating of critical system connectors. Failure to use the jackscrews to remove and replace the server B assembly can cause the system boards to fail.
3. Tighten one of the captive Torx T15 jackscrews with approximately six turns.
4. Tighten the other captive Torx T15 jackscrew completely.
5. Finish tightening the first captive Torx T15 jackscrew completely.
6. Insert the server B serial label pull tab completely.

Hard Drive

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Hard drive removal

Before you begin: Review Safety considerations . Power down the servers and remove the server blade from the enclosure. Separate servers A and B.

NOTE: The removal/replacement procedures are the same for the hard drives in both servers A and B.

1. Rotate the server up on its side to access the screw that secures the hard drive assembly to the server chassis.
2. Remove the 4mm Torx T15 screw that secures the hard drive assembly to the server chassis.
3. Carefully rotate the server back flat.
4. Pull the hard drive assembly away from the hard drive connector to disconnect the hard drive from the system board.
5. Carefully lift the hard drive assembly up and out of the chassis.
6. Remove the four 3mm P1 Philips-head screws that secure the hard drive to the hard drive carrier.
7. Lift off the top half of the carrier.

8. Lift the hard drive out of the bottom half of the carrier.

Caution! To avoid damaging the hard drive, handle the hard drive only by its sides.

Hard drive replacement

1. Orient the hard drive with its label facing up and its connector facing as written on the drive carrier.
2. Lower the hard drive into the bottom half of the drive carrier.
3. Place the top half of the carrier over the hard drive and aligned with the side screw holes.
4. Replace the four 3mm P1 Philips-head screws that secure the hard drive to the hard drive carrier.
5. Lower the hard drive assembly into the chassis.
6. Align the hard drive connector on the system board with the connector of the hard drive.
7. Push the hard drive assembly into the connector until the hard drive is fully seated.
8. While holding the hard drive assembly in place, rotate the server up on its side.
9. Insert and tighten the 4mm Torx T15 screw to secure the hard drive assembly to the server chassis.

DIMMs

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DIMMs removal

Before you begin: Review Safety considerations . Power down the servers and remove the server blade from the enclosure. Separate servers A and B.

NOTE: Both servers A and B contain DIMMs. The removal/replacement procedures are the same on all DIMMs.

1. Open the DIMM slot latches.
2. Lift the DIMM up and out of the DIMM slot.

DIMMs replacement

1. Ensure that the DIMM slot latches are open.
2. Locate the alignment notch on the DIMM and align it with the key in the DIMM slot.
3. Push the DIMM down firmly into the slot until the DIMM slot latches snap into place.
4. Ensure that the DIMM is fully inserted and properly seated in the slot.

Heat Sink And Processor

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Heat sink and processor removal

Caution! To avoid damage to the processor: Handle the processor only by the edges. Do not touch the bottom of the processor, especially the contact area.

Caution! THE PINS ON THE SYSTEM BOARD ARE VERY FRAGILE AND EASILY DAMAGED. To avoid damage to the system board:- Never install or remove a processor without using the processor installation tool.- Do not touch the processor socket contacts.- Do not tilt or slide the processor when lowering the processor into the socket.

Before you begin: Review Safety considerations . Power down the servers and remove the server blade from the enclosure. Separate servers A and B.

WARNING! To reduce the risk of personal injury from hot surfaces, allow the drives and the

Caution! To avoid possible thermal damage, install replacement heat sinks as indicated on the heat sink labels. The heat sinks are not interchangeable between server A and server B or between processor 1 and processor 2 within a server.

NOTE: Both servers A and B contain up to two heat sinks and processors. The removal/replacement procedures are the same on all heat sinks and processors.

1. Partially loosen both Torx T15 retaining screws with two turns each.
2. Fully loosen each screw to free the heat sink from the system board.
3. Lift the heat sink straight up and out of the chassis, being careful not to touch or spread the remaining thermal grease on the bottom.
   Caution! The heatsink thermal interface media is not reusable and must be replaced if the heatsink is removed from the processor after it has been installed.

   Caution! To prevent possible server blade malfunction and damage to the equipment, multiprocessor configurations must contain processors with the same part number.
4. If you are replacing the processor, open the processor locking lever and the processor socket retaining bracket.
5. Align the processor installation tool over the processor with the locking lever graphic correctly oriented.
6. Press in on the release tabs on the side of the tool and lower it onto the processor.
7. With the processor in place, release the tabs to firmly grasp the processor into the mouth of the tool.
8. Lift the processor straight up and out of the socket.

9. To help ensure that the processor remains in the tool, carefully rotate the tool, and then push in and release the tabs to secure the processor in the tool.

Heat sink and processor replacement

Caution! To prevent possible server blade overheating, always populate processor socket 2 with a processor and a heatsink or a processor socket cover.

Important! Processor socket 1 must always be populated. If processor socket 1 is empty, the server blade does not power up.

Caution! Failure to completely open the processor locking lever prevents the processor from seating during installation, leading to hardware damage.

1. Insert the processor into the processor installation tool. Handle the processor by the edges only, and do not touch the bottom of the processor, especially the contact area.
   Caution! Ensure that the alignment pins on the tool are aligned with the cutouts on the processor. If the processor is not inserted correctly, it may be destroyed.

   Important! Be sure the processor remains inside the processor installation tool.

2. Align the processor installation tool with the socket, and then install the processor.

3. Press the tabs on the processor installation tool to separate it from the processor, and then remove the tool.

4. Close the processor socket retaining bracket and the processor locking lever.
   Caution! Be sure to close the processor socket retaining bracket before closing the processor locking lever. The lever should close without resistance. Forcing the lever closed can damage the processor and socket, requiring system board replacement.

   Caution! The heat sink thermal interface media is not reusable and must be replaced if the heat sink is removed from the processor after it has been installed.

5. If you are reinstalling the old heatsink, use an alcohol wipe to clean off the old thermal grease from the heatsink and processor. Allow the alcohol to evaporate before you continue.

6. Apply thermal grease in an 'S' pattern on the processor.
   NOTE : A thermal grease pattern of five big dots is also acceptable.

7. Align the heat sink over the processor and the two screw holes on the system board.
   Caution! The heat sink retaining screws should be tightened partially one after the other, then fully, one after the other, to help even the pressure. Do not overtighten the screws as this can damage the board, connectors, or screws. Use the Torx T15 tool supplied with the system to reduce the possibility of over tightening the screws.

8. While firmly holding the heatsink in place, use a cross-torque technique to tighten the four Torx T15 retaining screws to secure the heatsink to the heatsink bracket on the system board.

System Battery

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System battery removal

Before you begin: Review Safety considerations and System battery replacement considerations . Power down the servers and remove the server blade from the enclosure. Separate servers A and B.

NOTE: Both servers A and B contain system batteries. The removal/replacement procedures are the same on both system batteries. HP recommends replacing both batteries at the same time.

1. Pull the release lever back just enough to allow the system battery to be removed.
2. Lift the system battery up and out of its holder.

System battery Replacement

1. With the plus (+) side of the system battery facing the inside of the server blade chassis, press the system battery into its holder.
2. Confirm that the system battery is firmly seated and the release latch is securing the system battery.

Important! Replacing the system battery resets the system ROM to its default configuration. After replacing the battery, reconfigure the system through RBSU.

Server Blade Release Lever

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Server blade release lever removal

Before you begin: Review Safety considerations . Power down the servers and remove the server blade from the enclosure. Separate servers A and B.

WARNING! To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

1. Confirm that the server blade release lever and handle are open.
2. Remove the 5mm Torx T-10 screw that secures the server blade release lever assembly to the inside of the server A chassis.
3. Carefully separate the chassis wall from the front bezel enough to pull out the server blade release lever.

Server blade release lever replacement

1. Carefully separate the chassis wall from the front bezel.
2. Insert and align the server blade release lever into position in its guide holes.
3. Replace the 5mm Torx T-10 screw to secure the server blade release lever assembly to the inside of the server A chassis.

System Boards

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System board removal

Before you begin: Review Safety considerations . Power down the servers and remove the server blade from the enclosure. Separate servers A and B. If installed remove the USB key or SD card adapter. Remove the hard drive, all DIMMs, heat sinks and processors.

1. Loosen the two captive Torx T15 thumbscrews that secure the system board to the chassis.
2. Slide the server A system board back just enough to clear the two chassis guide spools and carefully lift the server A system board up and out of the chassis.

NOTE: Server B system board does not need to be dissembled further once the hard drive, DIMMs, heat sinks and processors are removed.

System board replacement

1. Carefully lower the server A system board into the chassis and align the server A system board assembly with the two chassis guide spools.
2. Slide the server A system board assembly forward to fit under the front chassis guide spool and fully engage the additional two chassis guide spools.
3. Tighten the two captive Torx T15 thumbscrews to secure the system board to the chassis.

IMPORTANT! After replacing all of the components removed during the process, power up the server and run the procedure to re-enter the server serial number and product ID. Refer the service manual for this procedure.