HPE ProLiant BL490c G6 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



Access panel



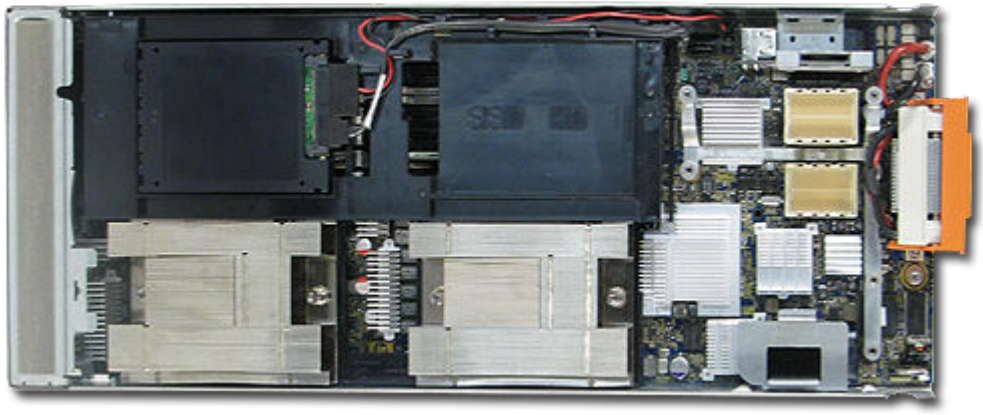
Back view



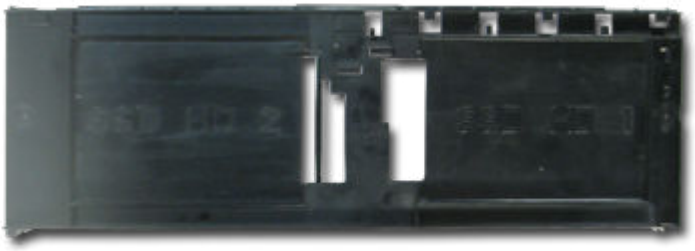
Top view



Internal view 1



DIMM baffle



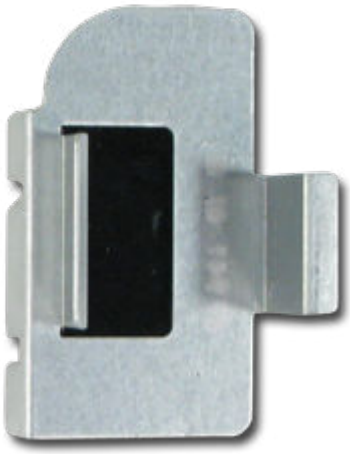
SD card module



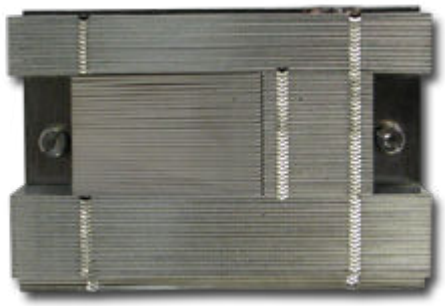
Mezzanine card



Battery tray



Heatsinks



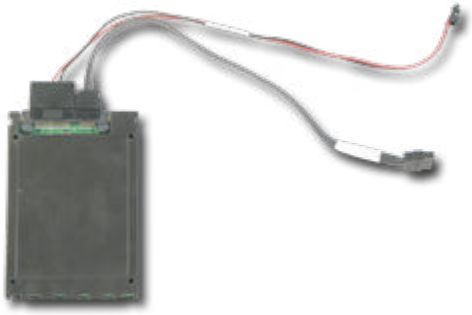
Server blade release lever and release button



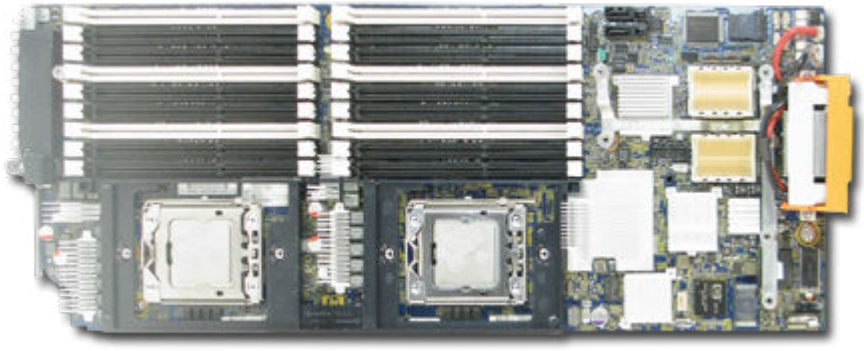
Front bezel



solid state drive



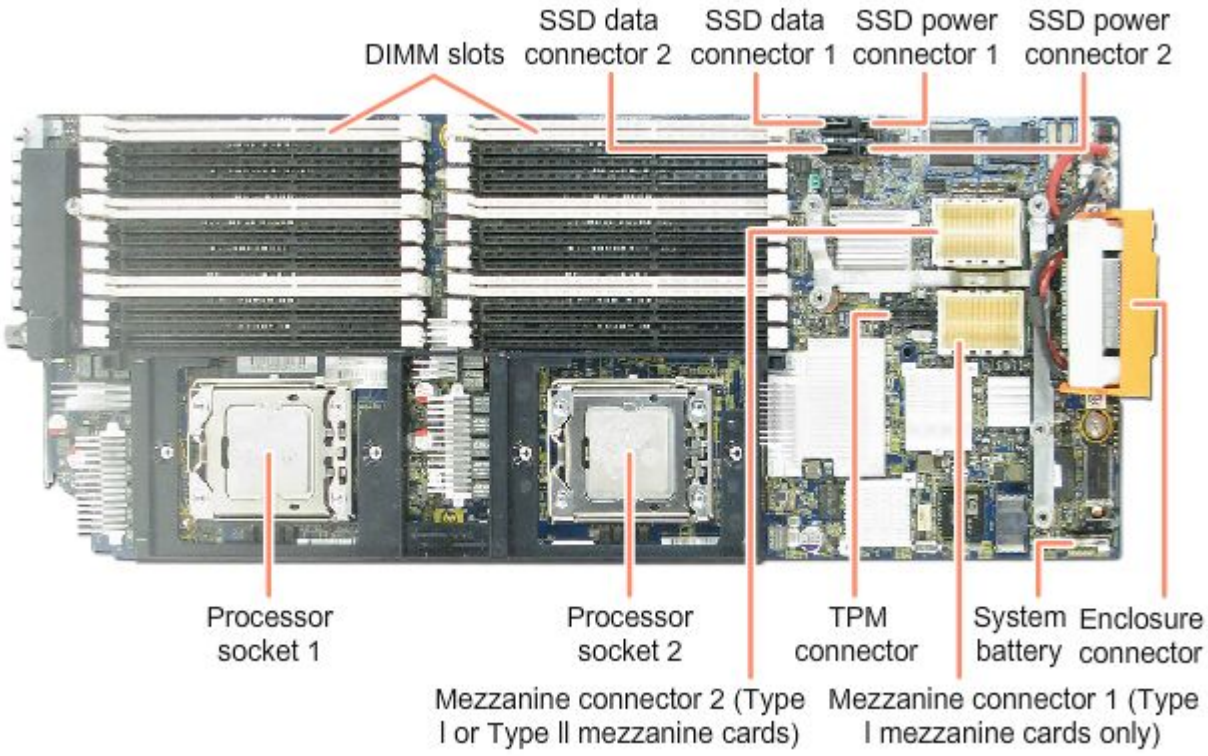
Internal view 2



DIMM



System board



System battery



Processors



Required Tools

You need the following items for certain procedures:

- T15 Torx screwdriver (provided inside the access panel)
- HP Insight Diagnostics software ("HP Insight Diagnostics")
- Alcohol swab
- Thermal grease

Preparation Procedures

To service any internal server blade component, power down the server blade and remove it from the enclosure.

Power down the server blade

Before powering down the server blade for any upgrade or maintenance procedures, perform a backup of critical server data and programs.

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
- Press and release the Power on/Standby button
- Press and hold the Power on/Standby button for more than 4 seconds to force the server blade to enter Standby mode
- Execute one of the following commands using the Onboard Administrator CLI:
  - poweroff server all, or
  - poweroff server all force
- Use the Onboard Administrator GUI to initiate a shutdown

After initiating a virtual power down command, be sure that the server blade go into Standby mode by observing that the system power LED is amber.

Remove the server blade

Caution! Do not use the server blade release lever to lift or carry the server blade. Always support the weight of the server blade by handling the chassis directly. Improper use can damage the release lever and the server blade.

1. Identify the proper server blade.
2. Power down the server blade.
3. Remove the server blade.
4. Place the server blade on a flat, level work surface.

Safety Considerations

Before performing service procedures, review all the safety information.

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

Before installing a server, be sure that you understand the following warnings and cautions.

WARNING! To reduce the risk of shock or injury from high-current electrical energy, do not remove the server blade access panel and then install the server blade into the enclosure.

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

WARNING! Do not operate the server blade with the access panel removed. Operating the server blade in this manner results in improper airflow and improper cooling that can lead to thermal damage.

Caution! When performing non-hot-plug operations, you must power down the server blade and/or the system. However, it may be necessary to leave the server blade powered up when performing other operations, such as hot-plug installations or troubleshooting.

Access Panel

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00000949en_us&noframe

Access panel removal

To remove the component:

1. Power down the server blade.
2. Remove the server blade.
3. Press the access panel release button.
4. Slide the access panel towards the rear of the server blade, and then lift to remove the panel.

Access panel replacement

To replace the component:

1. Place the access panel on top of the server blade.
2. Slide the access panel forward until it clicks into place.

Hard Drive

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Hard drive removal

To remove the component:

1. Back up all server data on the hard drive.
2. Power down the server blade.
3. Remove the server blade.
4. Remove the access panel.
5. Disconnect the hard drive cables from the system board connectors.
6. Remove the hard drive.
7. Disconnect the hard drive cables from the hard drive. Retain for future use.

Hard drive replacement

To replace the component, reverse the removal procedures.

DIMM Baffle

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DIMM baffle removal

To remove the component:

1. Power down the server blade.
2. Remove the server blade.
3. Remove the access panel.
4. Disconnect the hard drive cables from the system board connectors.
5. Remove the hard drive.
6. Remove the DIMM baffle.

DIMM baffle replacement

To replace the component, reverse the removal procedures.

DIMMs

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DIMMs removal

To remove the component:

1. Power down the server blade.
2. Remove the server blade.
3. Remove the access panel.

4. Disconnect the hard drive cables from the system board connectors.
5. Remove the DIMM baffle.
6. Remove the DIMM by pressing down on each release latch on both sides of the DIMM, then lifting it straight up.

DIMMs replacement

To replace the component, reverse the removal procedures.

Mezzanine Card

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Mezzanine card removal

To remove the component:

1. Power down the server blade.
2. Remove the server blade.
3. Remove the access panel.
4. Remove the mezzanine card by loosening the three thumbscrews and lifting up with a slight pressure.

Mezzanine card replacement

To replace the component:

1. Install the mezzanine card by pressing above the back side of the connector to seat the card.
2. Install the access panel.
3. Install the server blade.

Front Bezel

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Front bezel removal

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

To remove the component:

1. Power down the server blade.
2. Remove the server blade.
3. Remove the two screws from the front bezel, one on each side of the server blade.

Front bezel replacement

To replace the component, reverse the removal procedures.

Server Blade Release Lever

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Server blade release lever removal

To remove the component:

1. Power down the server blade.
2. Remove the server blade.
3. Remove the access panel.
4. Remove the front bezel.
5. Remove the server blade release lever by removing the screw then unlatching the spring.

Server blade release lever replacement

To replace the component, reverse the removal procedures.

Release Button

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Release button removal

To remove the component:

1. Power down the server blade.
2. Remove the server blade.
3. Remove the access panel.
4. Remove the front bezel.
5. Open the server blade release lever.
6. Remove the release button by depressing the two release levers and slide to the rear.

Release button replacement

To replace the component, reverse the removal procedure.

Heat Sink

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Heat sink removal

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

To remove the component:

1. Power down the server blade.
2. Remove the server blade.
3. Remove the access panel.
4. Remove the screws from the heat sink.

5. Remove the heat sink.

Heat sink replacement

To replace the heat sink:

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.

Caution! To avoid damage to the system board, processor socket, and screws, do not overtighten the heat sink screws. Use the wrench supplied with the system to reduce the possibility of overtightening the screws.

1. Clean the old thermal grease from the processor with the alcohol swab. Allow the alcohol to evaporate before continuing.
2. Apply all the grease to the top of the processor in an S pattern to ensure even distribution.
3. Install the heat sink. Insert both screws, and then alternate tightening until the heat sink is seated properly.
4. Install the access panel.
5. Install the server blade.

Processor

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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.- Your processor installation tool may differ from the one shown here. The general procedures and cautions for removal and replacement still apply.

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 possible server malfunction, do not mix processors of different speeds or cache sizes. Refer to the label on the processor heat sink for a description of the processor.

Caution! To prevent possible server blade overheating, always populate each processor socket with a processor socket cover and a heat sink blank or a processor and a heat sink.

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

To remove the component:

1. Power down the server blade.
2. Remove the server blade.
3. Remove the access panel.
4. Remove the heat sink.
5. Open the processor locking lever and the processor socket retaining bracket.
6. Align the processor installation tool over the processor with the locking lever graphic correctly oriented.
7. Press in on the release tabs on the side of the tool and lower it onto the processor.
8. With the processor in place, release the tabs to firmly grasp the processor into the mouth of the tool.
9. Lift the processor straight up and out of the socket.
10. 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.

Processor replacement

To replace the component:

Caution! To avoid damage to the system board, processor socket, and screws, do not overtighten the heat sink screws. Use the wrench supplied with the system to reduce the possibility of overtightening the screws.

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.**
5. Clean the old thermal grease from the heat sink with the alcohol swab. Allow the alcohol to evaporate before continuing.
6. Apply thermal grease in an pattern of five big dots on the surface of the processor.
7. Install the heat sink. Insert both screws, and then alternate tightening until the heat sink is seated properly.
8. Install the access panel.
9. Install the server blade.

Battery Tray

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Battery tray removal

This component is for use with future options.

To remove the battery tray:

1. Power down the server blade.
2. Remove the server blade.
3. Remove the access panel.
4. Remove the battery tray.

Battery tray replacement

To replace the component, reverse the removal procedure.

SD Card Module

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00000960en_us&noframe

SD card module removal

To remove the SD card module:

1. Power down the server blade.
2. Remove the server blade.
3. Remove the access panel.
4. Locate the SD card module.
5. Remove the SD card module.

SD card module replacement

To replace the SD card module, reverse the removal procedures.

System Board

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System board removal

To remove the component:

1. Power down the server blade.
2. Remove the server blade.
3. Remove the access panel.
4. Remove all hard drives.
5. Remove the DIMM baffle.
6. Remove all DIMMs.
7. Remove all mezzanine cards.
8. Remove the SD card module.

9. Remove the battery tray.
10. Remove the heat sink.
11. Remove the processor.
12. Remove the system board assembly by loosening the two thumbscrews, then slide the system board completely to the rear of the server chassis.

System board replacement

To replace the component:

1. Install the spare system board assembly.
2. Prepare the processor socket on the spare system board:
   a. Open the processor retaining latch and the processor socket retaining bracket.
   b. Remove the processor socket protective cover.
3. Install the processor socket cover onto the processor socket of the failed system board.
4. Install the processor on the spare system board.
5. Install the heat sink.
6. Install all components removed from the failed system board.
7. Install the access panel.
8. Install the server blade.

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

System Battery

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System battery removal

To remove the component:

1. Power down the server blade.

2. Remove the server blade.
3. Remove the access panel.
4. Identify the battery location.
5. Remove the battery.

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

System battery replacement

To replace the component, reverse the removal procedure.