HPE ProLiant BL280c 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



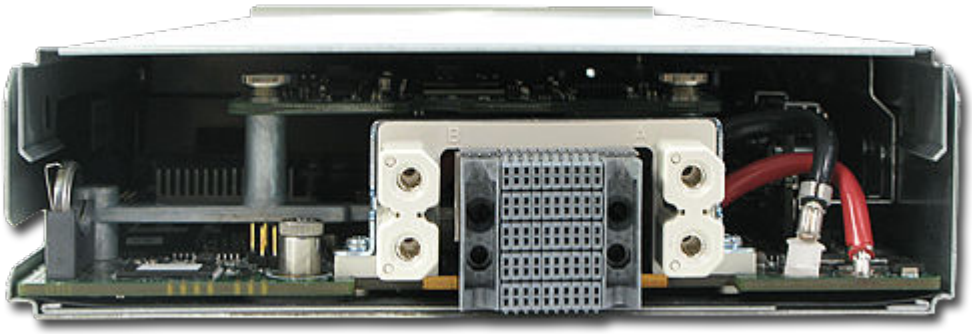
Access Panel



Front Bezel Assembly



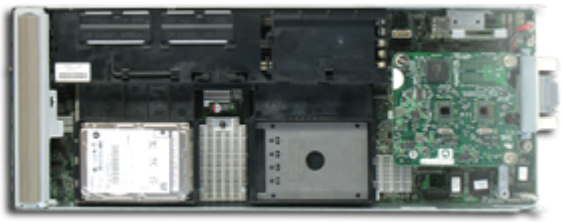
Back View



Top View



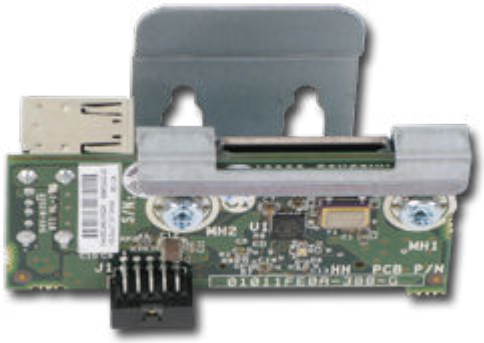
Internal View



Air Baffle



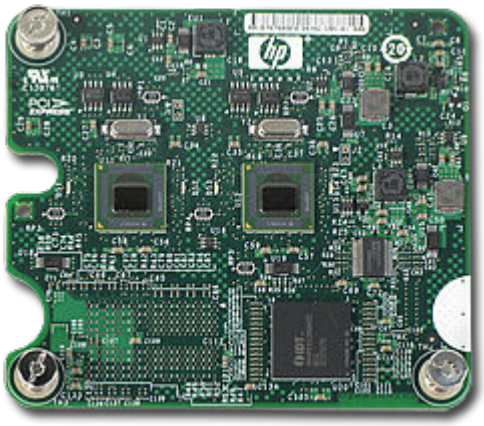
USB SD Card Module



System Battery



Mezzanine Card



Hard drive



DIMMs



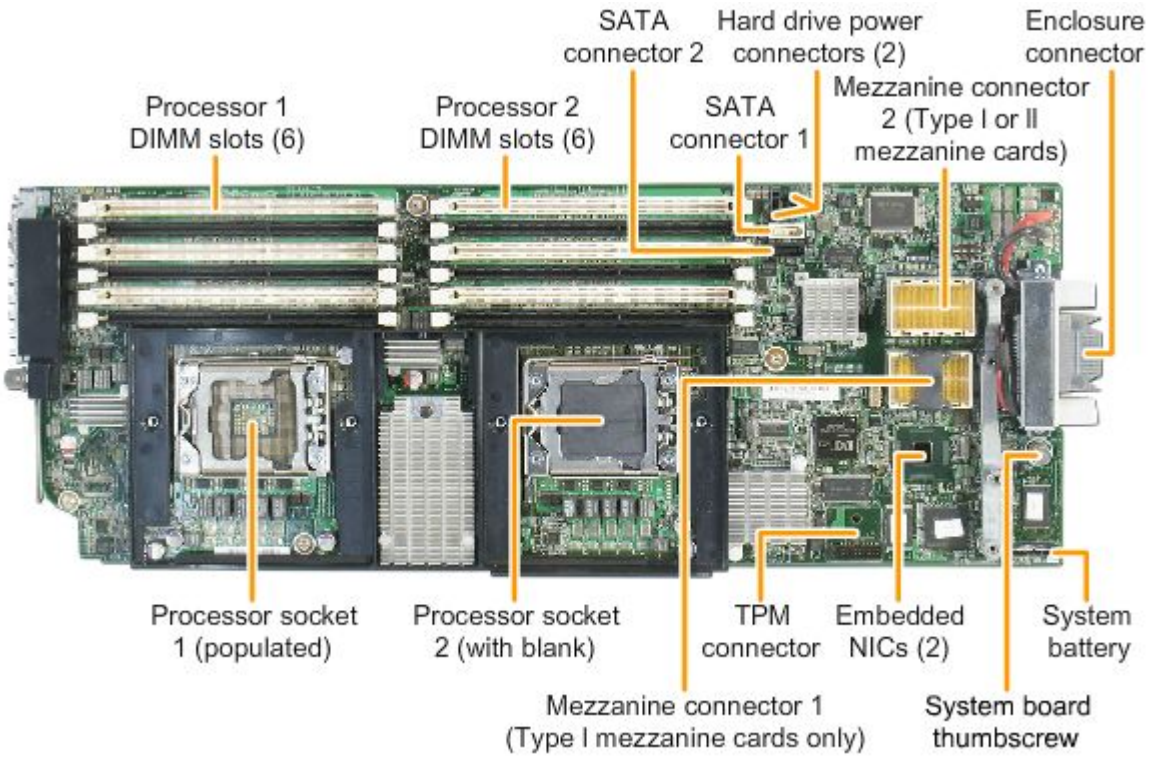
Heatsink Blank



Heatsink



System Board



Processor



Required Tools

You need the following items for some procedures:

- T15 Torx screwdriver (provided inside the server blade)
- No. 1 Phillips screwdriver
- HP Insight Diagnostics software ("HP Insight Diagnostics")
- Alcohol swab
- Thermal grease

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.

Server Blade Preparation

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:

- 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
- Use a virtual power button selection through iLO 2

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.

To remove the component:

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.

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 procedure. Improper grounding can cause ESD.

Access Panel

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00000750en_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.

Air Baffle

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Air baffle removal

To remove the component:

1. Power down the server blade.

2. Remove the server blade.
3. Remove the access panel.
4. If installed, disconnect the hard drive power and data cables from the system board.
5. Remove the air baffle.
6. Remove all hard drives.

Air baffle replacement

To replace the component, reverse the removal procedure.

Front Bezel Assembly

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Front bezel assembly removal

To remove the compnent:

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

Front bezel assembly replacement

To replace the component, reverse the removal procedure.

DIMMs

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DIMMs removal

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

To identify the DIMMs installed in the server blade, see the "DIMM identification" page in the MSG.

To remove the component:

1. Power down the server blade.
2. Remove the server blade.
3. Remove the access panel.
4. If installed, disconnect the hard drive power and data cables from the system board.
5. Remove the air baffle.
6. Remove the DIMM by pressing down on each release latch on both sides of the DIMM, then lifting straight up.

DIMMs replacement

To replace the component, reverse the removal procedure.

Hard Drive

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Hard drive removal

This video section shows the procedure for replacing the 9.5 mm hard drive in the server blade. The midline hard drive procedures are different. Refer to the MSG for the midline drive replacement procedure to prevent damage to the disk drive.

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. If installed, disconnect the hard drive power and data cables from the system board.

6. Remove the air baffle.
7. Disconnect all hard drive cables.
8. Remove all SATA hard drives (9.5 mm) with the hard drive spacers.

Caution! Failure to follow the hard drive installation guidelines can cause hardware damage.

Always observe the installation guidelines:

- Always install a spacer when installing a 9.5-mm SATA hard drive.
- Be sure to use the proper screws when installing the hard drive.
- When installing a 9.5-mm SATA hard drive and a hard drive spacer, install the long hard drive screws that are stored on the hard drive spacer.
- When installing a midline SATA hard drive or a SAS hard drive, install the standard hard drive screws that ship with the server blade.

Hard drive replacement

To replace the component.

1. Install the 9.5-mm SATA hard drives and hard drive spacers. Secure the hard drives and spacers to the air baffle with the long hard drive screws. The long hard drive screws are stored on the hard drive spacer.
2. Connect hard drive cable 1 to hard drive 1.
3. If installed, connect hard drive cable 2 to hard drive 2.
4. Route the cables through the air baffle.
5. Install the air baffle.
6. Connect hard drive cable 1 to SATA connector 1 on the system board.
7. If installed, connect hard drive cable 2 to SATA connector 2 on the system board.
8. Connect the hard drive power cables to the hard drive power connectors on the system board. The power cables can connect to either of the hard drive power connectors on the system board.
9. Install the access panel.
.0. Install the server blade.

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. If installed, disconnect the hard drive power and data cables from the system board.
5. Remove the air baffle.
6. Remove the front bezel assembly.
7. 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 procedure.

Release Button

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00000756en_us&noframe

Release button removal

To remove the component:

1. Power down the server blade.
2. Remove the server blade.
3. Remove the access panel.
4. If installed, disconnect the hard drive power and data cables from the system board.
5. Remove the air baffle.

6. Remove the front bezel assembly.
7. Remove the USB/SD card module.
8. Remove the system board.
9. Remove the release button.

Release button replacement

To replace the component, reverse the removal procedure.

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 thumbscrews and lifting up with a slight pressure.

Mezzanine card replacement

To replace the component:

1. Install the mezzanine card. Press down on the connector to seat the board.
2. Install the access panel.
3. Install the server blade.

USB/SD Card Module

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00000758en_us&noframe

USB/SD card module removal

To remove the component:

1. Power down the server blade.
2. Remove the server blade.
3. Remove the access panel.
4. Remove the USB drive key from the USB connector, if installed.
5. Remove the SD card from the SD card slot, if installed.
6. Remove the USB/SD card module from the system board.

USB/SD card module replacement

To replace the component:

1. Align and install the USB/SD card module.
2. Press down on the metal tabs to seat the connector.
3. Install the SD card, if removed.
4. Install the USB key, if removed.
5. Install the access panel.
6. Install the server blade.

Heat Sink Blank

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00000759en_us&noframe

Heat sink blank removal

To remove the component:

1. Power down the server blade.

2. Remove the server blade.
3. Remove the access panel.
4. If installed, disconnect the hard drive power and data cables from the system board.
5. Remove the air baffle.
6. Remove the heat sink blank.

Heat sink blank replacement

To replace the component, reverse the removal procedure.

Heat Sink

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00000760en_us&noframe

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. If installed, disconnect the hard drive power and data cables from the system board.
5. Remove the air baffle.
6. Remove the heat sink by loosening the two screws with the supplied wrench.

Heat sink replacement

To replace the heat sink:

1. Clean the old thermal grease from the processor with the alcohol swab. Allow the alcohol to evaporate before continuing.

2. Remove the thermal interface protective cover from the heat sink.
3. Apply the grease to the top of the processor in either pattern outlined in the MSG to ensure even distribution.
4. Align and install the heat sink. Alternate tightening the screws until the heat sink is seated properly.
5. Install the air baffle.
6. Connect the hard drive power and data cables to the system board.
7. Install the access panel.
8. Install the server blade.

Processor

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00000761en_us&noframe

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. Update the system ROM.
2. Power down the server blade.

3. Remove the server blade.
4. Remove the access panel.
5. If installed, disconnect the hard drive power and data cables from the system board.
6. Remove the air baffle.
7. Remove the heat sink.
8. Open the processor locking lever and the processor socket retaining bracket.
9. Align the processor installation tool over the processor with the locking lever graphic correctly oriented.
10. Press in on the release tabs on the side of the tool and lower it onto the processor.
11. With the processor in place, release the tabs to firmly grasp the processor into the mouth of the tool.
12. Lift the processor straight up and out of the socket.
13. 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 a processor:

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. Align and install the heat sink. Alternate tightening the screws until the heat sink is seated properly.
8. Install the air baffle.
9. Connect the hard drive power and data cables to the system board.
10. Install the access panel.
11. Install the server blade.

System Battery

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00000762en_us&noframe

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.

System battery replacement

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

To replace the component, reverse the removal procedure.

System Board

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00000763en_us&noframe

System board removal

To remove the component:

1. Power down the server blade.
2. Remove the server blade.
3. Remove the access panel.
4. If installed, disconnect the hard drive power and data cables from the system board.
5. Remove the air baffle.
6. Remove all mezzanine cards.
7. Remove the USB/SD card module.
8. Remove all DIMMs.
9. Remove the heat sink.
10. Remove the processor.
11. Loosen the thumbscrew at the rear of the system board.
12. Remove the system board assembly by sliding completely to the rear.

System board replacement

To replace the component:

1. Install the spare system board.
2. Tighten the thumbscrew at the rear of the system board.
3. Prepare the processor socket on the spare system board:
    - Open the processor retaining latch and the processor socket retaining bracket.
    - Remove the processor socket protective cover.
4. Install the processor socket cover onto the processor socket of the failed system board.
5. Install the processor on the spare system board.
6. Install the heat sink.
7. Install all components removed from the failed system board.
8. Install the air baffle.

9. Connect the hard drive power and data cables to the system board.
10. Install the access panel.
11. Install the server blade.

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