Hewlett Packard
Enterprise

Troubleshooting Guide for HPE ProLiant Gen11 servers

Part Number: 30-0E68E391-001
Published: January 2023
Edition: 1

Troubleshooting Guide for HPE ProLiant Gen11 servers

Abstract

This document describes common procedures and solutions for the many levels of troubleshooting servers. This document is intended for the person who installs, administers, and troubleshoots HPE ProLiant Gen11 servers. Hewlett Packard Enterprise assumes you are qualified to service computer equipment and are trained in recognizing hazards in products with hazardous energy levels.

Part Number: 30-0E68E391-001
Published: January 2023
Edition: 1

Notices

Acknowledgments

Microsoft®, Windows®, and Windows Server® are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

Linux® is the registered trademark of Linus Torvalds in the U.S. and other countries.

Red Hat® is a registered trademark of Red Hat, Inc. in the United States and other countries.

SD and microSD are trademarks or registered trademarks of SD-3C in the United States, other countries or both.

VMware® is a registered trademark or trademark of VMware, Inc. in the United States and/or other jurisdictions.

Table of contents

        - Unknown issue and server powers on
        - New hardware is not functioning properly
        - Third-party device issues
            - Testing the device
    - Drive issues (hard drives and solid-state drives)
        - Drives are failed
        - Drives are not recognized
        - Cannot access data on the drives
        - Server response time is slower than usual
        - HPE SmartDrive icons or LEDs illuminate errors for the wrong drive or an error message is displayed in POST, HPE SSA, or HPE SSADUCLI
        - SSD Smart Wear error
    - Storage controller issues
        - Diagnostic tools for HPE SR and HPE MR controllers
        - Controller does not display or displays errors during POST
        - Controllers are no longer redundant
        - Data located on drives accessed in RAID mode is not compatible with data accessed from non-RAID mode
        - The Smart Array controller does not show logical drives after moving drives to a new server or JBOD
            - Drive roaming
        - Data failure or disk errors on a server with a 10 SFF drive backplane or a 12 LFF drive backplane
    - Fan and thermal issues
        - General fan issues
        - Fans running at a higher than expected speed
        - Excessive fan noise (high speeds)
        - Excessive fan noise (low speeds)
        - Hot-plug fan issues
    - Memory issues
        - DIMM / NVDIMM population information
        - Server is out of memory
        - Server fails to recognize existing memory
        - Server fails to recognize new memory
        - General memory issues
            - Isolating and minimizing the memory configuration
        - DIMM issues
            - DIMM handling guidelines
            - DIMM configuration errors
            - Correctable memory error threshold exceeded
            - Uncorrectable memory error
        - NVDIMM issues
            - NVDIMM population errors
            - NVDIMMs are disabled

- Processor issues
  - Processor troubleshooting guidelines
  - Intel Xeon Scalable Processors
  - AMD EPYC Processors
  - Troubleshooting the processor
  - Uncorrectable machine check exception
- Trusted Platform Module (TPM) fails or is not detected
- System battery is low or lost power
- System board and power backplane issues
- The system does not boot from the microSD card
- System does not boot from the USB drive key
- System requests recovery method during expansion board replacement
- Graphics are not displaying correctly
- Video issues
  - The screen is blank for more than 60 seconds after powering up the server
  - Monitor does not function properly with energy saver features
  - Video colors are wrong
  - Slow-moving horizontal lines are displayed
- Mouse/Keyboard not working
- Network controller or FlexibleLOM issues
  - Network controller or FlexibleLOM is installed but not working
  - Network controller or FlexibleLOM has stopped working
  - Network controller or FlexibleLOM stopped working when an expansion board was added
  - Network interconnect blade issues
  - Network performance or virtual machine performance issues with HPE ProLiant servers with AMD processors
- Energy pack issues
  - Energy pack support
  - Energy pack not working
  - Energy pack configuration error
  - Energy pack failure
- Cable issues
  - Drive errors, retries, timeouts, and unwarranted drive failures occur when using an older Mini SAS cable
  - USB device not recognized, an error message is displayed, or the device does not power on when connected to an SUV cable

- Software issues
  - Operating system issues and resolutions
    - Operating system issues
      - Operating system locks up
      - Errors are displayed in the error log
      - Issues occur after the installation of a service pack
    - Updating the operating system
    - Reconfiguring or reloading software

About this guide

Subtopics

Document overview

This guide provides troubleshooting information for HPE ProLiant Gen11 servers and includes the following:

- Common troubleshooting procedures and issue resolution
- Troubleshooting HPE ProLiant Gen11 servers
- Component and LED identification
- Reports and logs
- Symptom information checklist

Subtopics

Supported servers

This guide focuses on troubleshooting procedures for the following server types:

- HPE ProLiant ML Gen11 servers
- HPE ProLiant DL Gen11 servers
- HPE ProLiant RL Gen11 servers
- HPE ProLiant MicroServers

Troubleshooting overview

Troubleshooting information is provided in multiple documents in the Hewlett Packard Enterprise Support Center:

- Error Message Guide for HPE ProLiant Gen11 Servers and HPE Synergy—Provides information for resolving common problems associated with specific error messages received for HPE ProLiant and HPE Synergy components.
- Integrated Management Log Messages and Troubleshooting Guide for HPE ProLiant Gen11 Servers and HPE Synergy —Provides information about Integrated Management Log messages and troubleshooting for HPE ProLiant Gen11 servers and HPE Synergy.
- Additional troubleshooting content can be found in other associated product documentation.

Troubleshooting preparation

Subtopics

Symptom information checklist

About this task

Before troubleshooting a server issue, collect the following symptom information:

Procedure

- ☐ Does the server power on?
- ☐ Does the server complete POST?
- ☐ If the server does not complete POST, what is the status and behavior of each of the server LEDs?
- ☐ Is video display available?
- ☐ If server completes POST and video is available, are there any POST error messages? Record the text of the POST error message as displayed.
- ☐ Does the server successfully boot an operating system or hypervisor? If not, does the server display any of the following symptoms and at what point did the following symptom occur?
  - ☐ An uncorrectable machine check exception
  - ☐ Stop error or blue screen (Windows)
  - ☐ Purple diagnostic screen (Linux)
  - ☐ Linux kernel panic
  - ☐ A system “hang”
  - ☐ A system “freeze”
- ☐ Does the issue occur after an OS is installed?
- ☐ Does the issue occur when a new application is loading?
- ☐ What symptoms did the server display when the server malfunctioned?

  For example, did the server reboot? Were there LED codes, health logs, or messages displayed on the screen?
- ☐ Are any indications present that show that the malfunction was reported as a memory error, PCI error, or so forth?

  The processor now contains the memory controller and PCI Express controller, so faults in other areas might be attributed to a processor malfunction.
- ☐ When did the issue occur?

  Record exactly when the issue happens (include the date and time). If it happens more than once, keep a list of all symptoms for each occurrence.

- [ ] What events preceded the failure? After which steps does the issue occur?
- [ ] What has been changed since the time the server was working?
- [ ] Has hardware or software been recently added or removed?

  If yes, were the appropriate settings in the server setup utility changed?
- [ ] How long has the server exhibited issue symptoms?
- [ ] If the issue occurs randomly, what is the duration or frequency of the issue?
- [ ] What failed based on the iLO Event Log or the IML?

Prerequisites for server troubleshooting

About this task

> **WARNING:**
> To avoid potential issues, ALWAYS read the warnings and cautionary information in the product documentation before removing, replacing, reseating, or modifying system components.

> **IMPORTANT:**
> This document provides information for multiple server products. Some information might not apply to the server you are troubleshooting. For information on procedures, hardware options, software tools, and operating systems supported by the server, see the server documentation.

Procedure

1. Review the important safety information for your server.
2. Before changing the server components, gather and record symptom information. If the server powers on or auxiliary power is available, download the Active Health System Log and obtain the OS logs.

   > **NOTE:** The OS logs are available only when the system has power. To obtain OS logs, see the OS documentation.

   For more information, see the iLO User Guide on the Hewlett Packard Enterprise website (**https://www.hpe.com/support/ilo-docs**).

   If you choose to not download the Active Health System Log, you must gather the following symptom information:
   - IML messages
   - POST error messages
   - OS logs
   - Physical symptoms (LED behavior, physical state, and so on)

   For more information about gathering symptom information, see the Symptom information checklist.
3. If necessary, submit a support case through Hewlett Packard Enterprise Support Center (**https://www.hpe.com/support/hpesc**).
4. Prepare the server for diagnosis.

More information

Symptom information checklist
Preparing the server for diagnosis
Opening a support case

Important safety information

Important safety information

For important safety, environmental, and regulatory information, see Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products, available at the **Hewlett Packard Enterprise website**.

Subtopics

Symbols on equipment

The following symbols might be found on the equipment to indicate the presence of potentially hazardous conditions.

WARNING:

 This symbol indicates the presence of hazardous energy circuits or electric shock hazards. Refer all servicing to qualified personnel.

To reduce the risk of injury from electric shock hazards, do not open this enclosure. Refer all maintenance, upgrades, and servicing to qualified personnel.

WARNING:

 This symbol indicates the presence of electric shock hazards. The area contains no user or field serviceable parts. Do not open for any reason.

To reduce the risk of injury from electric shock hazards, do not open this enclosure.

WARNING:

This symbol on an RJ-45 receptacle indicates a network interface connection.

To reduce the risk of electric shock, fire, or damage to the equipment, do not plug telephone or telecommunications connectors into this receptacle.

WARNING:

 This symbol indicates the presence of a hot surface or hot component. If this surface is contacted, the potential for injury exists.

To reduce the risk of injury from a hot component, allow the surface to cool before touching.

WARNING:

 This symbol indicates that the component exceeds the recommended weight for one individual to handle safely.

To reduce the risk of personal injury or damage to the equipment, observe local occupational health and safety requirements and guidelines for manual material handling.

WARNING:

These symbols, on power supplies or systems, indicate that the equipment is supplied by multiple sources of power.

To reduce the risk of injury from electric shock, remove all power cords to disconnect power from the system completely.

Warnings and cautions

WARNING: Only authorized technicians trained by Hewlett Packard Enterprise should attempt to repair this equipment. All troubleshooting and repair procedures are detailed to allow only subassembly/module-level repair. Because of the complexity of the individual boards and subassemblies, no one should attempt to make repairs at the component level or to make modifications to any printed wiring board. Improper repairs can create a safety hazard.

WARNING: To reduce the risk of personal injury or damage to the equipment, consult the safety information and user documentation provided with the server before attempting the installation.

Some servers contain high energy circuits, high current circuits, moving parts (such as fan blades), or any combination of these hazards, that may be exposed if covers and access panels are removed while the product is connected to a power source. These products are intended to be serviced only by qualified personnel who have been trained to deal with these hazards. Do not remove enclosures or attempt to bypass any interlocks designed to guard against these hazardous conditions.

WARNING: To reduce the risk of personal injury or damage to the equipment, be sure that:

- The leveling feet are extended to the floor.
- The full weight of the rack rests on the leveling feet.
- The stabilizing feet are attached to the rack if it is a single-rack installation.
- The racks are coupled together in multiple-rack installations.
- Only one component is extended at a time. A rack may become unstable if more than one component is extended for any reason.

WARNING: To reduce the risk of electric shock or damage to the equipment:

- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
- Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.
- Unplug the power cord from the power supply to disconnect power to the equipment.
- Do not route the power cord where it can be walked on or pinched by items placed against it. Pay particular attention to the plug, electrical outlet, and the point where the cord extends from the server.

WARNING: To reduce the risk of personal injury or damage to the equipment:

- Observe local occupation health and safety requirements and guidelines for manual handling.
- Obtain adequate assistance to lift and stabilize the chassis during installation or removal.
- The server is unstable when not fastened to the rails.
- When mounting the server in a rack, remove the power supplies and any other removable module to reduce the overall weight of the product.

CAUTION: To properly ventilate the system, you must provide at least 7.6 cm (3.0 in) of clearance at the front and back of the server.

CAUTION: The server is designed to be electrically grounded (earthed). To ensure proper operation, plug the AC power cord into a properly grounded AC outlet only.

Electrostatic discharge

Be aware of the precautions you must follow when setting up the system or handling components. 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 system or component.

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. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:
  - Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megohm ±10 percent resistance in the ground cords. To provide proper ground, wear the strap snug against the skin.
  - Use heel straps, toe straps, or boot straps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
  - Use conductive field service tools.
  - Use a portable field service kit with a folding static-dissipating work mat.

  If you do not have any of the suggested equipment for proper grounding, have an authorized reseller install the part.

For more information on static electricity or assistance with product installation, contact an authorized reseller.

Collecting symptoms and important information

Before troubleshooting an issue, collect the symptom information by downloading the Active Health System Log, as described in Active Health System Log download methods. The Active Health System log contains both IML and POST error messages.

For more information about collecting symptom information, use the Symptom information checklist.

In addition, you will also need to gather the following information to be used during troubleshooting, or used if the issue requires contacting Hewlett Packard Enterprise support:

- OS logs
- IML (also available in the Active Health System logs)
- POST error messages (also available in the Active Health System logs)

More information

Symptom information checklist
Integrated Management Log

Preparing the server for diagnosis

Procedure

1. Be sure that the server is in the proper operating environment with adequate power, air conditioning, and humidity control.

   For more information, see the server user guide.

2. Record any error messages displayed by the system.
3. Remove all CDs, DVD-ROMs, USB drive keys, or SD cards that are not bootable devices.
4. Collect all tools and utilities necessary to troubleshoot the issue. Items you might need include a Torx screwdriver, loopback adapters, ESD wriststrap, and software utilities.
   - You must have the appropriate support software installed on the server.
   - Hewlett Packard Enterprise recommends that you have access to the server documentation for server-specific information.
5. Determine if the server will be diagnosed offline or online:
   - To diagnose the server online, complete steps 6 and 8.
   - To diagnose the server offline, complete steps 7 and 8.
6. To diagnose the server online, review and collect the following information:
   a. Obtain a record of all current ROM settings by running CONREP from Scripting Toolkit for Windows and Linux.
   b. Review the IML.
   c. Review the iLO information on both the **Overview** and the **System Information** pages.
   d. Review the **Diagnostics** page.
   e. If the OS is operating and the System Management Homepage is installed, then review the operational status from the System Management Homepage.
   f. Download the Active Health System Log.

      For more information, see Active Health System Log download methods.
   g. Record survey data.
7. To diagnose the server offline, power down the server and peripheral devices. If possible, always perform an orderly shutdown:
   a. Exit any applications.
   b. Exit the operating system.
   c. Power down the server.
8. Disconnect any peripheral devices not required for testing (any devices not necessary to power up the server).

Subtopics

Diagnosing a server remotely

More information

Integrated Management Log

Diagnosing a server remotely

Prerequisites

IMPORTANT:

Before you make changes to your system, always download the Active Health System log. See Active Health System Log download methods.

About this task

For a generic approach to troubleshooting a server from a remote location, use the following procedure:

Procedure

1. Log in to the server iLO.

   Use iLO to view server health information and logs.

   For more information, see the HPE iLO 6 User Guide.

2. If the issue cannot be resolved after troubleshooting with iLO, create and submit a support case.

Common troubleshooting procedures

Subtopics

Breaking down the server to the minimum hardware configuration

Updating the firmware

Using the UID button to view the Server Health Summary

Breaking down the server to the minimum hardware configuration

About this task

During the troubleshooting process, you might be asked to break the server down to the minimum hardware configuration. A minimum configuration consists of only the components required to boot the server and successfully complete POST.

Before removing components, determine the minimum configuration for each component and follow all guidelines in the server user guide. Always use the recommended minimum configuration before removing any DIMMs.

CAUTION:

When reducing the server to a minimum configuration for troubleshooting, do not remove additional processors. Processors and heatsinks are not designated for customer self repair. The processor and heatsink must be removed and replaced by an authorized service provider.

Procedure

1. When requested to break down the server to the minimum configuration, uninstall the following components, if installed:

   - All additional cooling fans

     For the minimum fan configuration, see the server user guide or the chassis setup and installation guide.

   - All additional power supplies (leave one installed)
   - All hard drives and SSDs
   - All optical drives (DVD, CD, and so forth)
   - All optional mezzanine cards
   - All expansion boards

2. If the issue cannot be isolated with the minimum configuration, then remove all but the minimum number of associated DIMMs for each processor as directed by the Hewlett Packard Enterprise Support Center.

Updating the firmware

Many common issues can be resolved by updating the firmware. You can update the firmware and find additional information in the following ways:

- Download the SPP from the **Hewlett Packard Enterprise website**.
- Download the most recent version of a particular server or option firmware from the **Hewlett Packard Enterprise Support Center website**.
- Use HPE subscription services. Hewlett Packard Enterprise offers a subscription service that provides notifications when firmware updates are available.

Subtopics

Updates with HPE Trusted Platform Module (TPM) and BitLocker enabled

More information

Subscription services

Updates with HPE Trusted Platform Module (TPM) and BitLocker enabled

When a TPM is enabled in the UEFI System Utilities and the Microsoft Windows BitLocker Drive Encryption feature is enabled, always disable BitLocker before performing any of the following procedures:

- Restarting the server for maintenance without a PIN or startup key
- Upgrading critical early boot components
- Disabling or clearing the TPM
- Moving a BitLocker-protected drive to another server
- Adding an optional PCI device, such as a storage controller or network adapter

For more information, see the UEFI System Utilities user guide for your product on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/uefi/docs**).

Using the UID button to view the Server Health Summary

Prerequisites

- An external monitor is connected.
- In the iLO web interface, the Show Server Health on External Monitor feature is enabled on the Access Settings page.

About this task

You can use the UID button to display the iLO Server Health Summary screen on an external monitor. This function works both when the server is powered on or off. Use this feature for troubleshooting if the server will not start up.

> **CAUTION:** Press and release the UID button. Holding it down at any time for more than five seconds initiates a graceful iLO reboot or a hardware iLO reboot. Data loss or NVRAM corruption might occur during a hardware iLO reboot.

Procedure

1. Press and release the UID button.

   The Server Health Summary screen is displayed on the external monitor. For more information, see the iLO troubleshooting guide on the Hewlett Packard Enterprise website (**https://www.hpe.com/support/ilo-docs**).

2. Press the UID button again to close the Server Health Summary screen.

Subtopics

Preboot Health Summary details

Preboot Health Summary details

- Server model number
- Server serial number
- Product ID
- iLO IP address (IPv4 and IPv6)—This value is displayed only if Show iLO IP during POST is set to Enabled on the Administration > Access Settings page in iLO.
- iLO Hostname
- iLO firmware version
- ProLiant System ROM version
- ProLiant System ROM – Backup version
- iLO CPLD version
- System CPLD version
- Embedded Smart Array version number—This value is displayed only if server POST has successfully completed since the last auxiliary power cycle.
- Critical events—The most recent Critical events from the IML are displayed, with the most recent event displayed first.

Common issue resolution

Subtopics

Searching for service notifications

Resolving loose connections

Reviewing server and component LEDs

Searching for service notifications

About this task

Service notifications are created to provide solutions for known issues. Check to see if your issue is covered by an existing service notification.

Procedure

1. Go to the Hewlett Packard Enterprise Support Center website (**https://www.hpe.com/support/hpesc**).
2. Enter the product name or number, and then press **Enter**.
3. To show the documents available for your product, select **Documents**.
4. To narrow the results, select from the available options to filter by document type.

   Some of the document types you might include follow:

   - Advisory—Provides a problem and solution to an issue or a workaround.
   - Bulletin or Security Bulletin—Provides information about a potential product safety or security vulnerability.
   - Notice—Provides general information, announcements, or best practices.

Resolving loose connections

Procedure

Complete the following tasks to resolve loose connections:

- Ensure that all power cords are securely connected.
- Ensure that all cables are properly aligned and securely connected for each external and internal component.
- Remove and check all data and power cables for damage. Ensure that no cables have bent pins or damaged connectors.
- If a cable routes through air baffles or other components, ensure that the cords and cables connected to the server are routed correctly through the baffle.
- Ensure that each device is properly seated. Avoid bending or flexing circuit boards when you reseat components.
- If a device has latches, ensure that they are completely closed and locked.
- Check any interlock or interconnect LEDs that might indicate that a component is not connected properly.
- If issues continue to occur, remove and reinstall each device, checking the connectors and sockets for bent pins or other damage.

Subtopics

Controller and energy pack cables

Controller and energy pack cables

When an energy pack and HPE Smart Array controllers are installed in the server, be sure to install and properly seat all required cables.

Energy pack cable

The energy pack cable is connected to each energy pack and can be either 145mm or 260mm in length. When an energy pack is installed, always verify that the energy pack cable is connected properly. For more information about installing and cabling the energy pack, see the server user guide.

Controller backup power cable

The controller backup power cable provides backup power to controllers installed in PCIe slots and DIMM slots on the system board. If an HPE Smart Array controller is installed in a PCIe slot, be sure to install the controller backup power cable. For more information about installing and cabling the controller backup power cable, see the server user guide.

Reviewing server and component LEDs

Many common issues can be identified by reviewing the component and server LEDs. For more information, see the server and component documentation in the **Hewlett Packard Enterprise Support Center**.

Subtopics

Front panel LED definitions

Front panel LED notations

Front panel LED power fault codes

Front panel LED definitions

Standard descriptions for most HPE ProLiant Gen11 servers are provided in this section.

Description	Status
UID LED	Solid blue = Activated Off = UID is deactivated and iLO Service Port is ready for use. Flashing blue: • 1 Hz/cycle per sec = Remote management or firmware upgrade in progress • 4 Hz/cycle per sec = iLO manual reboot sequence initiated • 8 Hz/cycle per sec = iLO manual reboot sequence in progress • 1 fast flash and then off for 3 seconds = iLO Service Port status is Complete. • 4 medium flashes and then off for 1 second = iLO Service Port status is Busy. • 8 fast flashes and then off for 1 second = iLO Service Port status is Error.
Power On/Standby button and system power LED	Solid green = System on Flashing green (1 Hz/cycle per sec) = Performing power on sequence Solid amber = System in standby Off = No power present
Health LED	Solid green = Normal Flashing green (1 Hz/cycle per sec) = iLO is rebooting. Flashing amber = System degraded Flashing red (1 Hz/cycle per sec) = System critical
NIC status LED	Solid green = Link to network Flashing green (1 Hz/cycle per sec) = Network active Off = No network activity

Front panel LED notations

For more information about LED combinations and LED definitions, review the following:

- When all four front panel LEDs flash simultaneously, a power fault has occurred.
- The server UID also flashes to indicate the status of the iLO Service Port.

  For more information, see the iLO documentation on the Hewlett Packard Enterprise website (**https://www.hpe.com/support/ilo-docs**).
- When the system power LED is off, one of the following is true:
  - Facility power is not present.
  - The power cord is not attached.
  - Power supplies are not seated properly.
  - No power supplies are installed.
  - A power supply failure has occurred.
  - The power backplane, if installed, is not seated properly.
  - The PDU has issues.
  - The Power On/Standby Button cable is disconnected.
- If the health LED indicates a degraded or critical state, review the system IML or use iLO to review the system health status.

More information

Front panel LED power fault codes

Front panel LED power fault codes

When a power fault occurs, the following front panel LEDs flash simultaneously:

- System power LED
- Health LED
- NIC LED
- UID LED

For more information about the LED locations on your server, see the server user guide in the **Hewlett Packard Enterprise Information Library**.

The number of flashes in each sequence corresponds to the subsystem impacted by the power fault. The following table provides a list of power fault codes, and the subsystems that are affected. Not all power faults are used by all servers.

Subsystem	LED behavior
System board	1 flash
Processor	2 flashes
Memory	3 flashes
Riser board PCIe slots	4 flashes
FlexibleLOM	5 flashes
Storage controllers	6 flashes
System board PCIe slots	7 flashes
Power backplane or storage backplane	8 flashes
Power supply	9 flashes

Hardware issues

The procedures in this section are comprehensive and include steps about or references to hardware features that might not be supported by the server you are troubleshooting.

> **CAUTION:** Before removing or replacing any processors, be sure to follow the guidelines provided in Processor troubleshooting guidelines. Failure to follow the recommended guidelines can cause damage to the system board, requiring replacement of the system board.

Subtopics

Power issues

Subtopics

Server does not power on

Symptom

The server does not power on.

Cause

- Components or cables might not be properly connected or seated.
- The power supply is not functioning or working properly.
- The power source is not functioning or working properly.

Action

1. Press the Power On/Standby button to verify the server has been turned on.

   If the server has a Power On/Standby button that returns to its original position after being pressed, be sure to press the switch firmly.
2. Verify that no loose connections exist. See Resolving Loose connections.
3. Review the Server Health Summary.
4. Check the power LEDs on the power supplies. See Power supply issues.
5. Plug another device into the grounded power outlet to be sure the outlet works. See Power source issues.

Subtopics

Power supply issues

Power source issues

Power supply issues

Symptom

The power supply is not functioning or not working properly.

Solution 1

Cause

- The power supply might not be fully seated.
- AC power is unavailable.
- The power supply failed.
- The power supply is in standby mode.
- The power supply has exceeded the current limit.
- The power supply is not supported on the server.
- The power is not sufficient for the hardware installed.
- Redundant power supplies are configured, but the power supplies are not compatible.
- The power supply configuration for the server is insufficient to meet the power requirements for the server.

Action

1. Be sure that no loose connections exist.
2. If the power supplies have LEDs, review the LED statuses to see if they indicate an issue:

a. If the LEDs display red, replace the power supply.

b. If the LEDs display amber, then the power supply is in standby mode.

   Press and hold the Power On/Standby button on the server.

c. If the LEDs are off, inspect the power source. Then, power on the server again.

d. If the power source is working properly, and the LEDs remain off, replace the power supply.

   For more information, see the server maintenance and service guide.

Solution 2

Action

1. Verify that the system has enough power. This is especially important if you have recently added hardware, such as drives.

   a. Remove the newly added component. If the issue is no longer present, then additional power supplies are required.

   b. Check the system information from the IML.

   For product-specific information, see the server documentation on the Hewlett Packard Enterprise **website**.

2. Verify that the power supplies support the power requirements for the server configuration.

   For more information, see the HPE Power Advisor on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/poweradvisor**).

Solution 3

Action

If running a redundant configuration, verify that all of the power supplies have the same spare part number and are supported by the server.

For a list of supported options, see the QuickSpecs on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/qs**).

More information

Resolving loose connections
Viewing the IML

Power source issues

Symptom

The server does not power on.

Cause

- Components or cables might not be properly connected or seated.
- The grounded power outlet is not working.
- The power cord is not functional.
- The power strip is not functional.
- The circuit breaker is in the Off position.
- The line voltage is insufficient for the load.
- Sufficient power is not allocated to support the server.

Action

1. Press the Power On/Standby button to verify that the server is on.

   If the server has a Power On/Standby button that returns to its original position after being pressed, be sure that you press the switch firmly.
2. Be sure that no loose connections exist.
3. Verify that the power LEDs on the power supplies are illuminated.
4. Plug another device into the grounded power outlet to be sure the outlet works.

   Be sure that the power source meets applicable standards.
5. Replace the power cord with a known functional power cord to be sure it is not faulty.
6. Replace the power strip with a known functional power strip to be sure it is not faulty.
7. Be sure that the proper circuit breaker is in the On position.
8. Have a qualified electrician verify the line voltage to be sure it meets the required specifications.
9. If Enclosure Dynamic Power Capping or Enclosure Power Limit is enabled on supported servers, be sure that there is sufficient power allocation to support the server.

   For more information, see the following documents:

   - HPE Power Capping and HPE Dynamic Power Capping for ProLiant servers technology brief on the Hewlett Packard Enterprise website (**https://www.hpe.com/support/hpdpc**).

More information

Resolving loose connections

UPS issues

Subtopics

UPS is not working properly

Low battery warning is displayed

One or more LEDs on the UPS is red

UPS is not working properly

Symptom

The UPS is not working properly.

Cause

- The UPS switch is not in the ON position.
- The UPS batteries are not charged to the proper level.
- The UPS software is not up-to-date.
- The UPS power cord is not connected.
- The UPS power cord is not the correct type for the UPS and the country/region in which the server is located.

Action

1. Be sure that the UPS batteries are charged to the proper level for operation.

   For more information, see the UPS documentation.

2. Be sure that the UPS power switch is in the ON position.

   For the location of the switch, see the UPS documentation.

3. Be sure that the UPS software is updated to the latest version.

   Use the Power Management software on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/rackandpower**).

4. Be sure that the power cord is the correct type for the UPS and the country/region in which the server is located.

   For specifications, see the UPS reference guide.

5. Be sure that the line cord is connected.

6. Be sure that each circuit breaker is in the ON position, or replace the fuse if needed.

   If this occurs repeatedly, contact an authorized service provider.

7. Review the UPS LEDs to be sure that a battery or site wiring issue has not occurred.

   For more information, see the UPS documentation.

8. If the UPS sleep mode is initiated, disable sleep mode for proper operation.

   The UPS sleep mode can be turned off through the configuration mode on the front panel.

9. Change the battery to be sure that damage was not caused by excessive heat, particularly if a recent air conditioning outage has occurred.

   NOTE:

   The optimal operating temperature for UPS batteries is 25°C (77°F). For approximately every 8°C to 10°C (16°F to 18°F) average increase in ambient temperature above the optimal temperature, battery life is reduced by 50 percent.

Low battery warning is displayed

Symptom

A low battery warning is displayed on the UPS.

Cause

- The batteries must be charged.
- The batteries are failing to hold a charge.
- The batteries are faulty.

Action

1. Plug the UPS into an AC grounded outlet for at least 24 hours to charge the batteries.
2. Test the batteries.
3. Replace the batteries if necessary.
4. Be sure that the alarm is set appropriately by changing the amount of time given before a low battery warning.

   For more information, see the UPS documentation.

One or more LEDs on the UPS is red

Symptom

One or more of the UPS LEDs is red.

Action

For product-specific LED information and additional troubleshooting information, see the UPS documentation.

General hardware issues

Subtopics

Unknown issue and server does not power on

Symptom

The server is not functioning, but the specific cause is unknown.

Action

1. Be sure that no loose connections exist.
2. Reseat any components that may have come loose during shipping, and reboot the server.
3. Verify that added options were installed correctly.
4. Following the guidelines and cautionary information in the server documentation, reduce the server to the minimum hardware configuration. Remove all cards or devices that are not necessary to power on the server.

   Before completing this step, review the guidelines for breaking down the server to the minimum hardware configuration. Keep the monitor connected to view the server power-on process.
5. Reconnect power, and then power on the system.
6. Do one of the following:
   - If the system fails in the minimum configuration, one of the primary components has failed. Verify that the processor, power supply, and memory are working. If these components are working, contact Hewlett Packard Enterprise support to request a new system board.

     CAUTION:

     Before removing or replacing any processors, be sure to follow the guidelines in "Processor troubleshooting guidelines" in the troubleshooting guide for your product. Failure to follow the recommended guidelines can cause damage to the system board, requiring replacement of the system board.

CAUTION:

Only authorized technicians trained by Hewlett Packard Enterprise should attempt to remove the system board. If you believe the system board requires replacement, contact Hewlett Packard Enterprise technical support before proceeding. For more information, see Accessing Hewlett Packard Enterprise Support.

- If the system boots and video is working, add each component back to the server one at a time. To determine which component is the cause of the issue, restart the server after adding each component.

  When adding each component back to the server, be sure to disconnect power to the server and follow the guidelines and cautionary information in the server documentation. Troubleshoot or replace any faulty components

7. If the video does not work, see the video issues troubleshooting topics in this document.

Unknown issue and server powers on

Symptom

The server is not functioning properly, but the specific cause is unknown.

Action

1. To see if any statuses indicate the source of the issue, check the server LEDs.
2. Power down and disconnect power to the server. Remove all power sources to the server.
3. Be sure that no loose connections exist.
4. Following the guidelines and cautionary information in the server documentation, reduce the server to the minimum hardware configuration. Remove all cards or devices that are not necessary to power on the server.

   Before completing this step, review the guidelines for breaking down the server to the minimum hardware configuration. Keep the monitor connected to view the server power-on process.
5. Reconnect power, and then power on the system.

   - If the video does not work, see the video issues troubleshooting topics in this document.

CAUTION:

Only authorized technicians trained by Hewlett Packard Enterprise should attempt to remove the system board. If you believe the system board requires replacement, contact Hewlett Packard Enterprise technical support before proceeding. For more information, see Accessing Hewlett Packard Enterprise Support.

CAUTION:

Before removing or replacing any processors, be sure to follow the guidelines in "Processor troubleshooting guidelines" in the troubleshooting guide for your product. Failure to follow the recommended guidelines can cause damage to the system board, requiring replacement of the system board.

- If the system fails in this minimum configuration, one of the primary components has failed. If you have already verified that the processor, power supply, and memory are working before getting to this point, replace the system board. If not, be sure each of those components is working.
- If the system boots and video is working, add each component back to the server one at a time. To determine if that component is the cause of the issue, restart the server after adding each component. When adding each component back to the server, be sure to disconnect power to the server and follow the guidelines and cautionary information in the server documentation.

More information

Resolving loose connections

Processor troubleshooting guidelines
Breaking down the server to the minimum hardware configuration
Video issues

New hardware is not functioning properly

Symptom

The hardware is not functioning normally.

Cause

- Unsupported hardware
- Incomplete population of a memory bank
- Connection of the data cable, but not the power cable, of a new device

Action

1. Be sure the hardware being installed is a supported option on the server. If necessary, remove unsupported hardware.

   For more information, see the QuickSpecs on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/qs**).

2. Be sure that the issue is not caused by a change to the hardware release.

   For more information, see the release notes included with the hardware. If no documentation is available, see the Hewlett Packard Enterprise website (**https://www.hpe.com/support/hpesc**).

3. Be sure that the new hardware is installed properly.

   To be sure that all requirements are met, see the device, server, and OS documentation.

4. Be sure no memory, I/O, or interrupt conflicts exist.
5. Be sure that no loose connections exist.
6. Be sure that all cables are connected to the correct locations and are of the correct lengths.

   For more information, see the server user guide.

7. Be sure that other components were not accidentally unseated during the installation of the new hardware component.
8. Be sure all necessary software updates, such as device drivers, ROM updates, and patches, are installed and current. Be sure that the correct version for the hardware is installed.

   For example, if you are using a Smart Array controller, you need the latest Smart Array Controller device driver. Uninstall any incorrect drivers before installing the correct drivers.

9. After installing or replacing boards or other options, verify that the system recognizes all changes to the hardware in UEFI System Utilities.

   If the new hardware is not configured properly, you might receive a POST error message indicating a configuration error.

   For more information, see the UEFI System Utilities user guide for your product on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/uefi/docs**).

10. Be sure that all switch settings are set correctly.

    For more information, see the server user guide.

11. Be sure that all boards are properly installed in the server.
12. Uninstall the new hardware.

More information

Resolving loose connections

Third-party device issues

Symptom

- A third-party device is not recognized by the server or the OS.
- A third-party device is not operating as expected.

Cause

- The device is not supported on the server or OS.
- The device is not installed properly.

Action

1. Verify that the server and operating system support the device.

   For more information, see the server QuickSpecs and operating system documentation.

2. Verify that the latest device drivers are installed.
3. Verify that the device is installed properly.

   For more information on which PCIe technology is supported and for the slot PCIe bus width, see the server QuickSpecs at https://www.hpe.com/info/qs.

Subtopics

Testing the device

Testing the device

Procedure

1. Uninstall the device.

   If the server works when the device is removed, then one of the following issues exists:

   - An issue exists with the device.
   - The server does not support the device.
   - The device conflicts with another device.

2. If there is only one device on a bus, verify that the bus works by installing a different device on the bus.
3. To determine if the device is working, install the device:

   a. In a PCIe slot on a different bus.

   b. In the same slot in another working server of the same or similar design.

   Restart the server each time the device is reinstalled.

   If the board works in any of these slots, either the original slot is bad or the board was not properly seated. Reinstall the board into the original slot to verify.

4. If you are testing a board (or a device that connects to a board):

   a. Test the board with all other boards removed.

b. Test the server with only that board removed.

5. Clear the NVRAM.
6. Verify that the PCIe device or graphics controller does not need additional power to operate.

   For more information, see the device documentation.

Drive issues (hard drives and solid-state drives)

Subtopics

Drives are failed

Symptom

The drives are failed.

Action

1. Be sure no loose connections exist.
2. Check to see if an update is available for any of the following:
   - Smart Array Controller firmware
   - Dynamic Smart Array driver
   - Host bus adapter firmware
   - Expander backplane SEP firmware
   - System ROM
3. Be sure the drive or backplane is cabled properly.
4. Be sure the drive data cable is working by replacing it with a known functional cable.
5. Be sure drive blanks are installed properly when the server is operating.

   Drives may overheat and cause sluggish response or drive failure.
6. Run HPE SSA and check the status of the failed drive.
7. Be sure the replacement drives within an array are the same size or larger.
8. Be sure the replacement drives within an array are the same drive type, such as SAS, SATA, or SSD.
9. Power cycle the server.

If the drive appears, verify the drive firmware and update, if needed.

Drives are not recognized

Symptom

Drives are not recognized.

Action

1. Verify that no power issues exist.
2. Verify that no loose connections exist.
3. Check for available updates on any of the following components:
   - Smart Array Controller firmware
   - HBA firmware
   - Expander backplane SEP firmware
   - System ROM
4. Verify that the drive or backplane is cabled properly.
5. Review the drive LED statuses to ensure that they indicate normal function.

   For server-specific drive LED information, see the server documentation.
6. Verify that the drive is supported.
7. Power cycle the server.

   If the drive appears, verify the drive firmware and update, if needed.
8. Verify that the drive bay is not defective by installing the hard drive in another bay.
9. If the drive is a replacement drive on an array controller, be sure that the drive is the same type and of the same or larger capacity than the original drive.
10. If using an array controller, be sure that the drive is configured in an array. Run HPE SSA.
11. Be sure that the correct controller drivers are installed and that the controller supports the hard drives being installed.
12. If a storage enclosure is used, be sure that the storage enclosure is powered on.
13. If a SAS switch is used, be sure that disks are zoned to the server using the Virtual SAS Manager.

Cannot access data on the drives

Symptom

The data on the drives is inaccessible.

Cause

- The files are corrupt.
- Viruses exist on the server.
- The TPM is not properly enabled on the server.

Action

1. Run the repair utility for the operating system to verify that the files are not corrupt.
2. Run a current version of a virus scan utility to verify that no viruses exist on the server.
3. Verify that the TPM is enabled in UEFI System Utilities.
4. Verify that the TPM is configured for a mode that is compatible with the OS running on the server.
5. Verify that the server is configured for UEFI boot mode.
6. When migrating encrypted data to a new server, be sure to follow the recovery procedures in the operating system documentation.

Server response time is slower than usual

Symptom

The server response time is slower than usual.

Cause

- The drive is full.
- Operating system encryption technology is causing a decrease in performance.
- A recovery operation is pending on the logical drive.

Action

1. Be sure the drive is not full. If needed, increase the amount of free space on the drive. Hewlett Packard Enterprise recommends that drives have a minimum of 15 percent free space.
2. Review information about the operating system encryption technology, which can cause a decrease in server performance. For more information, see the operating system documentation.
3. Use HPE SSA to verify that a recovery operation is not pending on the logical drive.

HPE SmartDrive icons or LEDs illuminate errors for the wrong drive or an error message is displayed in POST, HPE SSA, or HPE SSADUCLI

Symptom

- HPE SmartDrive icons or LEDs illuminate indicating an error.
- An error message is displayed in POST, HPE SSA, or HPE SADUCLI.

Action

Verify that the cabling from the drive backplane to the system board is correct.

For server-specific cabling information, see the server user guide.

SSD Smart Wear error

Symptom

A POST message or an IML message is received.

Cause

The device is approaching the maximum usage limit for writes to the device.

Action

Replace the device.

For more information, see the server maintenance and service guide.

Storage controller issues

Subtopics

Diagnostic tools for HPE SR and HPE MR controllers

To troubleshoot array problems and generate feedback about arrays, use the diagnostic tools described in this section.

Diagnostic tools for HPE SR controllers

- **Smart Storage Administrator (SSA)**
  SSA can be accessed offline using Intelligent Provisioning or booting from the SPP ISO image. It can also be accessed online by downloading the SSA version 6.10.14.0 or later. For more information on using SSA, see **HPE Smart Storage User Guide**.
- **HPE iLO**

  The iLO firmware continuously monitors the controller independent of the operating system and logs any failure events to the IML, iLO RESTful API, and SNMP. In addition, the iLO web interface allows users to view the status of the controller and its attached devices.
- **UEFI System Utilities**
  The UEFI System Utilities is embedded in the system ROM. The UEFI System Utilities enable you to view controller configuration and settings. For more information, see **UEFI System Utilities User Guide for HPE ProLiant Gen11 Servers and HPE Synergy** .

  .

Diagnostic tools for HPE MR controllers

- **HPE MR Storage Administrator**
  HPE MR Storage Administrator displays event log messages and system messages. To view the event log, in the controller dashboard click View Event Log under the Actions menu. In the Actions menu for the event log, you can download the log file and clear the log file. To view the system messages, click the bell icon, and the messages appear on the top of the window.
- **System Event Log**
  HPE MR Storage Administrator reports array events to the application area inside of the Microsoft Windows system event log, which includes detailed diagnostic information of the most recent events encountered by the controller. On Linux, the system event log is

located at `/var/log/messages`. On VMware, the system event log is located at `/var/log/vmkernel.log`.

Controller does not display or displays errors during POST

Symptom

- The controller is not visible during the POST process.
- The controller shows errors during the POST process.

Cause

- The hardware is physically damaged.
- The controller is not supported on the server.
- The embedded controller is not enabled in UEFI System Utilities.
- The controller is not seated properly.
- The controller is faulty.
- The firmware is outdated.

Action

1. Verify that the controller is supported for the server.

   For a list of supported options, see the QuickSpecs on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/qs**).
2. Verify that the controller is not physically damaged.
3. If the controller is recognized by the system BIOS, then reseat the controller.
4. For issues with the embedded controller, confirm that the embedded controller is enabled in UEFI System Utilities.
5. Run controller diagnostics and follow the steps displayed.
6. Update the firmware.
7. Download the Active Health System log to diagnose and resolve issues. See Active Health System Log download methods.
8. If the issue persists, open a support case using the Hewlett Packard Enterprise Support Center website (**https://www.hpe.com/support/hpesc**).
9. Replace the controller.

   For more information, see the server maintenance and service guide.

More information

Opening a support case

Controllers are no longer redundant

Symptom

- The controller shows errors during the POST process.
- The cache is disabled.

Cause

- The hardware on one or more controllers is physically damaged.
- One or more controllers are not supported on the server.
- The controllers are not compatible for redundant operation.
- One or more controllers are not installed properly.
- The firmware on one or more controllers is outdated or not compatible.
- The energy pack is not installed.
- The energy pack is not connected to the system board properly.
- The controller backup power cable is not connected from the controller to the PCIe riser board.

Action

1. Verify that the controllers are supported for the server.
2. Verify that both controllers are installed or seated properly.
3. Verify that the controllers are compatible controller models.
4. Verify that the controller firmware versions are compatible and current.
5. Verify that the controller cache sizes are compatible.
6. Verify that the energy pack is installed and connected properly.
7. Verify that all controller cabling is connected properly.
8. If the issue persists, download the Active Health System log.
9. Contact Hewlett Packard Enterprise technical support.

More information

Accessing Hewlett Packard Enterprise Support

Data located on drives accessed in RAID mode is not compatible with data accessed from non-RAID mode

Symptom

Data located on drives accessed in RAID mode is not compatible with data accessed from non-RAID mode and data located on drives accessed in non-RAID mode is not compatible with data accessed from RAID mode.

Action

Hewlett Packard Enterprise recommends that you access drive data only when the same RAID or non-RAID mode is enabled. Back up and restore the data on the drives.

The Smart Array controller does not show logical drives after moving drives to a new server or JBOD

Symptom

The Smart Array controller does not show logical drives after moving drives to a new server or JBOD.

Cause

A drive migration issue occurred.

Action

Be sure to follow all drive roaming rules when migrating drives.

Subtopics

Drive roaming

More information

Drive roaming

Drive roaming

Drive roaming lets you move disk drives and arrays while maintaining data availability. You can move one or more disk drives in a configured logical drive to a different bay position as long as the new bay position is accessible by the same controller. In addition, you can move a complete array from one controller to another, even if controllers are in different servers. The logical drive status must be good before you move physical drives to a new bay position.

Drive roaming is an offline feature. There is no method for removing an array while the server is online and then moving it to a new physical location.

Data failure or disk errors on a server with a 10 SFF drive backplane or a 12 LFF drive backplane

Symptom

Data failure or disk errors occur on a server with a 10 SFF or 12 LFF drive backplane.

Cause

The drive backplane is not cabled properly to the controller.

Action

Be sure that the drive backplane ports are connected to only one controller.

Only one cable is required to connect the backplane to the controller. The second port on the backplane is cabled to the controller to provide additional bandwidth.

Fan and thermal issues

Subtopics

General fan issues

Fans running at a higher than expected speed

Excessive fan noise (high speeds)

Excessive fan noise (low speeds)

Hot-plug fan issues

General fan issues

Symptom

Fan not operating as expected.

Cause

- The fans are not seated properly.
- The fan configuration does not meet the functional requirements of the server.
- The server is not ventilated properly.
- One or more required fans are not installed.
- Required fan blanks are not installed.
- Error messages are displayed during POST or in the IML.
- One or more fans are not functioning.

Action

1. Be sure that the fans are properly seated and working:
   a. Follow the procedures and warnings in the server documentation for removing the access panels, and accessing and replacing fans.
   b. Unseat, and then reseat, each fan according to the proper procedures.
   c. Replace the access panels, and then attempt to restart the server.
2. Be sure that the fan configuration meets the functional requirements of the server.
3. Be sure that no ventilation issues exist. If the server is operated for an extended period with the access panel removed, airflow might be impeded, causing thermal damage to components.
4. Be sure that no POST error messages are displayed while booting the server that indicate temperature violation or fan failure information.
5. Use iLO or an optional IML viewer to access the IML to see if any event list error messages relating to fans are listed.
6. In the iLO web interface, click **Power & Thermal** in the navigation tree:
   a. Click the **Fans** tab, and verify the fan status and fan speed.
   b. Click the **Temperatures** tab, and verify the temperature readings for each location on the Temperatures tab. If a hot spot is located, then check the airflow path for blockage by cables and other material.

      A hot spot is not an absolute temperature but is relative to a component specification. Hot spot is defined as temperature on a sensor within 3°C of a Caution threshold listed on the Temperature tab.
7. Replace any required nonfunctioning fans and restart the server.

   For more information, see the server maintenance and service guide.
8. Be sure that all fan slots have fans or blanks installed.
9. Verify that the fan airflow path is not blocked by cables or other material.

Fans running at a higher than expected speed

Symptom

The fans are running at a higher speed than expected.

Cause

- The system temperature sensor is reading within approximately 10°C of the Caution threshold.
- An air baffle or blank is missing or not installed properly and causing a disruption of the airflow.
- The processor heatsink is not installed as indicated in the server documentation.
- A supported fan is not installed in the server.

Action

1. Update the server to the latest firmware versions, such as iLO firmware, system BIOS, option firmware, and so on.
2. Verify the Temperature tab. Fan speeds can be high if a sensor temperature is within approximately 10°C of the Caution threshold.
3. Verify that all air baffles and required blanks, such as drive blanks, processor heatsink blanks, power supply blanks, and so on, are installed.
4. Verify that the correct processor heatsink is installed.
5. Verify that the correct fan is installed, if the system supports both standard fans and performance fans.

More information

Updating the firmware

Excessive fan noise (high speeds)

Symptom

Fans are operating at high speeds with excessive noise.

Cause

Fans can generate noise if running at a high speed (as expected) or when at low speed if there is an issue with the fan.

Action

1. In the iLO web interface, click Power & Thermal in the navigation tree.
2. Click the **Fans** tab.
3. Verify the fan status and fan speed.

   Fan speeds greater than 60% are expected to be loud.
4. If the fan is running at a higher speed than expected, see "Fans running at a higher than expected speed."

More information

Fans running at a higher than expected speed

Excessive fan noise (low speeds)

Symptom

Abnormal/rattling noise observed at low fan speeds.

Action

Replace the fan.

For more information, see the server maintenance and service guide.

Hot-plug fan issues

Symptom

Hot-plug fans are not functioning properly.

Action

1. Check the LEDs to be sure the hot-plug fans are working.

   For LED information, see the server documentation on the **Hewlett Packard Enterprise Support Center website**.

   NOTE:

   For servers with redundant fans, backup fans may spin up periodically to test functionality. This is part of normal redundant fan operation.

2. Verify that there are no POST error messages displayed.

   If a POST error message is displayed, complete the steps required to resolve the error.

3. Verify that the hot-plug fan meets the requirements for the server.

   For more information, see the server documentation on the **Hewlett Packard Enterprise Support Center website**.

Memory issues

Subtopics

DIMM / NVDIMM population information

Server is out of memory

Server fails to recognize existing memory

Server fails to recognize new memory

General memory issues

DIMM issues

NVDIMM issues

DIMM / NVDIMM population information

For specific population and configuration information, see the memory population guidelines on the Hewlett Packard Enterprise website (**http://www.hpe.com/docs/memory-population-rules**). For NVDIMM processor compatibility, see the **Product QuickSpecs** for your environment.

Server is out of memory

Symptom

- The server is out of memory.
- A POST error message or an IML message is displayed.

Cause

- The memory is not configured properly.
- An OS error is indicated.

Action

1. Be sure the memory is configured properly. For more information, see the product documentation to determine the memory configuration requirements.
2. Be sure no operating system errors are indicated.
3. Update the system ROM to the latest version.

More information

Updating the firmware

Server fails to recognize existing memory

Symptom

The server does not recognize existing memory.

Cause

- The server does not support the processor installed in the server.
- The associated processor is not installed for all DIMMs in the server.
- The memory is not configured properly.
- The DIMM is degraded.
- The DIMM is not installed or seated properly.

Action

1. Verify that the server supports associated processor installed for the DIMM.

   For a list of supported options, see the QuickSpecs on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/qs**).
2. Verify that the associated processor is installed for all DIMMs in the server.

   For more information, see the server user guide.
3. Verify that the memory is configured properly.
4. Reseat the memory.

   IMPORTANT:

   Use care when handling DIMMs. For more information, see "DIMM handling guidelines."
5. Replace all degraded DIMMs.

   For more information, see the server maintenance and service guide.
6. Update the system ROM.

More information

DIMM handling guidelines
Updating the firmware

Server fails to recognize new memory

Symptom

The server does not recognize new memory installed on the server.

Cause

- The memory is not supported on this server.
- The memory is not installed according to the server requirements.
- The memory limits are exceeded for the server.
- The processor is not supported on the server.
- The memory is not installed or seated properly.

Action

1. Be sure that the memory is the correct type for the server.

   For a list of supported options, see the QuickSpecs on the Hewlett Packard Enterprise website (https://www.hpe.com/info/qs).
2. Be sure that the memory is installed according to the server requirements.
3. Be sure that you have not exceeded the memory limits of the server or operating system.
4. Be sure the server supports the number of processor cores.

   Some server models support only 32 cores and this might reduce the amount of memory that is visible.
5. Be sure that no Event List error messages are displayed in the IML.
6. Be sure that the memory is seated properly.
7. Be sure that no conflicts are occurring with existing memory. Run the server setup utility.
8. Test the memory by installing the memory into a known working server.

   Be sure that the memory meets the requirements of the new server on which you are testing the memory.
9. Update the system ROM to the latest version.
10. Replace the memory.

    For more information, see the server maintenance and service guide.

More information

Integrated Management Log
DIMM handling guidelines
Updating the firmware

General memory issues

Symptom

A DIMM error occurred or a DIMM failed.

Cause

- The memory does not meet server requirements.
- A DIMM has failed.
- Third-party memory is installed on the server.
- The DIMM is not properly seated.

Action

1. Be sure that the DIMMs meet the server requirements and is installed as required by the server.

   Some servers might require that memory channels are populated fully or that all memory within a memory channel is of the same size, type, and speed.
2. Remove any third-party memory.
3. Check any server LEDs that correspond to memory slots.
4. Update the system ROM to the latest version.
5. Reseat the DIMM.
6. Isolate and minimize the memory configuration. Use care when handling DIMMs.
7. Replace the DIMM.

   For more information, see the server maintenance and service guide.

Subtopics

Isolating and minimizing the memory configuration

More information

DIMM handling guidelines
Isolating and minimizing the memory configuration
Updating the firmware

Isolating and minimizing the memory configuration

Prerequisites

Use care when handling DIMMs.

About this task

When troubleshooting memory issues, sometimes it is necessary to isolate DIMMs in a minimum configuration to determine which DIMM failed.

Procedure

1. If you are unsure which DIMM has failed, test each channel of DIMMs by removing all other DIMMs.
2. Isolate the failed DIMM by switching each DIMM in a channel with a known working DIMM.

More information

DIMM handling guidelines

DIMM issues

Subtopics

DIMM handling guidelines

CAUTION: Failure to properly handle DIMMs can cause damage to DIMM components and the system board connector.

When handling a DIMM, observe the following guidelines:

- Avoid electrostatic discharge.
- Always hold DIMMs by the side edges only.
- Avoid touching the connectors along the bottom of the DIMM.
- Never wrap your fingers around a DIMM.
- Avoid touching the components on the sides of the DIMM.
- Never bend or flex the DIMM.

When installing a DIMM, observe the following guidelines:

- Before seating the DIMM, open the DIMM slot and align the DIMM with the slot.
- To align and seat the DIMM, use two fingers to hold the DIMM along the side edges.
- To seat the DIMM, use two fingers to apply gentle pressure along the top of the DIMM.

For more information, see the **Hewlett Packard Enterprise website**.

DIMM configuration errors

Symptom

A POST error message or an IML message is displayed.

Cause

- The DIMM configuration does not support the Advanced Memory Protection setting configured for the server.
- The memory channel was not populated in the correct order.
- An unsupported DIMM is installed in the server.
- The corresponding processor is not installed.

Action

1. Verify that the DIMMs are installed according to the DIMM population guidelines.
2. Verify that the Advanced Memory Protection settings and DIMMs are installed according to the DIMM population guidelines.
3. Verify that the DIMMs are supported on the server.

For a list of supported options, see the QuickSpecs on the Hewlett Packard Enterprise website (https://www.hpe.com/info/qs).

4. Be sure that the associated processor is installed for all DIMMs on the server.
5. Update the system ROM to the latest version.

More information

Updating the firmware

Correctable memory error threshold exceeded

Symptom

- Performance is degraded.
- The memory LED is amber.
- ECC errors occur with no other symptoms.

Cause

- The DIMM is not installed or seated properly.
- The DIMM has failed.

Action

1. Update the system ROM to the latest version.
2. Replace the DIMM.

   For more information, see the server maintenance and service guide.

More information

DIMM handling guidelines
Updating the firmware

Uncorrectable memory error

Symptom

- A POST error message or an IML message is displayed.
- Stop error or blue screen (Windows)
- Purple diagnostic screen (Linux)
- Linux kernel panic
- A system “hang”
- A system “freeze”
- ASR
- Server restarts or powers down unexpectedly
- Parity errors occur

Cause

- The DIMM is not installed or seated properly.

- The DIMM has failed.

Action

1. Reseat the DIMM.
2. Update the system ROM to the latest version.
3. If the issue still exists, then replace the DIMM.

   For more information, see the server maintenance and service guide.

More information

DIMM handling guidelines
Updating the firmware

NVDIMM issues

Subtopics

NVDIMM population errors

NVDIMMs are disabled

NVDIMM population errors

Symptom

- A POST error message or an IML message is displayed.
- System halts.

Cause

- An unsupported number of NVDIMMs are installed on the server.
- An unsupported DIMM is installed on the server.
- The server contains an unsupported mixture of DIMM types.
- NVDIMMs and RDIMMs are not installed in the correct order.
- At least one standard DIMM is not installed on Processor 1 as required by the population guidelines.
- An HPE Smart Storage Hybrid Capacitor is installed in the server.

Action

1. Review the IML for messages that may indicate the reason the NVDIMMs are disabled. Perform steps stated in the error message.

   For more information, see the error message guide for your server.
2. Verify that all DIMMs are installed according to the population guidelines.

   For more information, see the memory population rules on the Hewlett Packard Enterprise website (https://www.hpe.com/docs/intel-population-rules-Gen11).
3. Remove all DIMM types that are not supported in the configuration.

   For more information, see the server maintenance and service guide.
4. Verify that an HPE Smart Storage Battery is installed on the server.

The HPE Smart Storage Hybrid Capacitor does not support NVDIMMs.

More information

DIMM handling guidelines

NVDIMMs are disabled

Symptom

- All NVDIMMs are disabled.
- All NVDIMMs on a processor are disabled.

Cause

- Node interleaving is enabled.
- The current AMP mode is unsupported when NVDIMMs are installed.
- New NVDIMMs were installed on the server.
- The NVDIMM is installed in a slot that does not have backup power available.

Action

1. Review the IML for messages that may indicate the reason the NVDIMMs are disabled. Perform steps stated in the error message.

   For more information, see the Error Message Guide for HPE ProLiant Gen11 Servers and HPE Synergy.

2. Ensure that all UEFI System Utility settings are configured to support NVDIMMs.
   - If Node interleaving is enabled in UEFI System Utilities, change the setting to Disabled.
   - If Advanced Memory Protection is set to any setting other than Advanced ECC Support, then change the setting to Advanced ECC Support.

   For more information, see the UEFI System Utilities user guide for your product on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/uefi/docs**).

3. If new NVDIMMs are installed on the server, sanitize the NVDIMMs to enable the NVDIMMs for use.

   For more information, see the HPE 16GB NVDIMM User Guide on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/NVDIMM-docs**).

4. Verify that your NVDIMM is installed in a slot that supports NVDIMMs. Move the NVDIMM to a slot that supports NVDIMMs.

   For more information, see the server maintenance and service guide.

5. Verify that a supported HPE Smart Storage Battery is properly installed and operating in the server.

   For a list of supported options, see the QuickSpecs on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/qs**).

Processor issues

Subtopics

Processor troubleshooting guidelines

Intel Xeon Scalable Processors

Processor troubleshooting guidelines

CAUTION:

When reducing the server to a minimum configuration for troubleshooting, do not remove additional processors. Processors and heatsinks are not designated for customer self repair. The processor and heatsink must be removed and replaced by an authorized service provider.

Before performing any troubleshooting steps that involve processors, review the following guidelines:

- Be sure that only authorized personnel perform the troubleshooting steps that involve installation, removal, or replacement of a processor.
- Always complete all other troubleshooting procedures before an authorized service provider removes or replaces a processor.

Intel Xeon Scalable Processors

HPE ProLiant Gen11 servers support fourth-generation Intel Xeon Scalable processors.

To determine the generation, look at the four-digit processor model number.

- First-generation Intel Xeon Scalable processors contain a second digit of 1 (X1XX).
- Second-generation Intel Xeon Scalable processors contain a second digit of 2 (X2XX).
- Third-generation Intel Xeon Scalable processors contain a second digit of 3 (X3XX).
- Fourth-generation Intel Xeon Scalable processors contain a second digit of 4 (X4XX).

AMD EPYC Processors

Depending on your model, your Gen11 server may support fourth-generation AMD EPYC processors.

To determine the generation, look at the four-digit processor model number.

- Third-generation AMD EPYC processors contain a first digit of 7 and a fourth digit of 3 (7XX3).
- Fourth-generation AMD EPYC processors contain a first digit of 9 and a fourth digit of 4 (9XX4).

Troubleshooting the processor

Symptom

A POST error message or an IML message is received.

Cause

- One or more processors are not supported by the server.
- The processor configuration is not supported by the server.

- The server ROM is not current.
- A processor is not seated properly.
- A processor has failed.

> **CAUTION:** To avoid damage to the processor or system board, only authorized personnel should attempt to replace or install the processor in this server.

Be sure to review the Processor troubleshooting guidelines before you attempt any steps that involve the processor.
Some steps in this procedure may require an authorized service provider. Be sure to refer to the server user guide for procedures provided in this section.

Action

1. Be sure that each processor is supported by the server. Be sure that each processor is installed as directed in the server documentation.

   The processor socket requires specific installation steps. Only install supported processors.
2. Be sure the server ROM is current.
3. If not supported by the server, be sure that you are not mixing processor stepping, core speeds, or cache sizes.
4. If the server has only one processor installed, reseat the processor.

   For more information, see the server maintenance and service guide.

   If the issue is resolved after you restart the server, the processor was not installed properly.
5. If the server has only one processor installed, replace it with a known functional processor.

   If the issue is resolved after you restart the server, the original processor failed.
6. If the server has multiple processors installed, test each processor:
   a. Remove all but one processor from the server.

      Replace each with a processor terminator board or blank, if applicable to the server.
   b. Replace the remaining processor with a known functional processor.

      If the issue is resolved after you restart the server, a fault exists with one or more of the original processors. To locate the faulty processor or processors, install each processor one by one, restarting each time. At each step, be sure the server supports the processor configurations.

More information

Processor troubleshooting guidelines

Uncorrectable machine check exception

Symptom

A POST error message or an IML message is received indicating an uncorrectable machine check exception.

Cause

There are many possible causes for this error. Review the additional details provided with the error message.

Action

1. Review the error message text for additional details to troubleshoot the specified components.
   a. If the message text directs you to replace an AMD processor, try reseating the processor before replacing the processor.

      Be sure to review the processor information in the maintenance and service guide before servicing the processor.

b. If the issue still exists, continue to the next step.

2. Download the Active Health System log and the OS logs.
3. Update the system firmware.

   Do not attempt to update the firmware more than one time. If the issue still exists after updating the firmware, continue to the next step.
4. If the issue persists, open a support case using the Hewlett Packard Enterprise Support Center website (**https://www.hpe.com/support/hpesc**).

More information

Processor troubleshooting guidelines
Opening a support case
Updating the firmware

Trusted Platform Module (TPM) fails or is not detected

Symptom

The TPM failed or is no longer detected.

Cause

- The TPM failed.
- The TPM is not configured properly in UEFI System Utilities.
- The boot mode is not configured for the TPM on the server.

Action

1. Verify that the TPM is enabled in UEFI System Utilities.

   NOTE:

   The TPM is embedded in the system board.

   See the TPM replacement recovery procedure in the operating system documentation.
2. Verify that the TPM is configured for a mode that is compatible with the OS running on the server.

   Verify that the OS supports the version of TPM installed and configured on the server.
3. Verify that the server is configured for UEFI boot mode.
4. Request a new system board and from a Hewlett Packard Enterprise authorized service provider.

System battery is low or lost power

Symptom

An error message displays, indicating low power or loss of power.

Cause

Real-time clock system battery is running low on power or lost power.

Action

Replace the battery. For more information, see the server maintenance and service guide on the Hewlett Packard Enterprise website.

System board and power backplane issues

Symptom

A POST message or an IML message is received indicating an issue with either the system board or the power backplane.

Action

- Review all error messages for possible issues with other components and troubleshoot components identified.
- Verify that no loose connections exist on the system board or power backplane. It is not necessary to reseat processors.
- Remove any components recently added.

  For more information, see the server maintenance and service guide.
- Power down and remove all power from the server. Remove the system battery for 10 minutes. Reinstall the battery and power on the server.

  To locate the system battery and for server-specific procedures, see the product documentation on the Hewlett Packard Enterprise website (**https://www.hpe.com/support/hpesc**).
- To default using the BIOS utility (F9), reset the NVRAM. If the system will not boot, then use the System Maintenance Switch, SW6, to reset the NVRAM.
- Download the Active Health System logs to diagnose and resolve server issues . See Active Health System Log download methods.
- If the issue persists, open a support case using the Hewlett Packard Enterprise Support Center website (**https://www.hpe.com/support/hpesc**).

More information

Resolving loose connections
Opening a support case

The system does not boot from the microSD card

Symptom

The system is not booting from the drive.

Cause

- The drive boot order is not set to boot from the microSD card.
- The microSD card is not detected by iLO.
- The microSD card is not seated properly.

Action

1. Be sure that the drive boot order in the UEFI System Utilities is set so that the server boots from the microSD card.

   For more information, see the UEFI System Utilities user guide for your product on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/uefi/docs**).
2. Use the iLO web interface to verify that the microSD card is detected by iLO.
3. Remove all power from the server. Reseat the microSD card, and then power on the server.

System does not boot from the USB drive key

Symptom

The system does not boot from the USB drive key.

Cause

- The USB drive key is not enabled in the UEFI System Utilities.
- The drive boot order is not set to boot from the USB drive key.
- The USB drive key is not seated properly.

Action

1. Be sure that USB is enabled in the UEFI System Utilities.

   For more information, see the UEFI System Utilities user guide for your product on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/uefi/docs**).
2. Be sure that the drive boot order in the UEFI System Utilities is set so that the server boots from the USB drive key.
3. Reseat the USB drive key.
4. Move the USB drive key to a different USB port, if available.

System requests recovery method during expansion board replacement

Symptom

The system requests a recovery method during expansion board replacement on a BitLocker-encrypted server.

Action

When replacing an expansion board on a BitLocker-encrypted server, always disable BitLocker before replacing the expansion board. If BitLocker is not disabled, the system requests the recovery method selected when BitLocker was configured. Failure to provide the correct recovery password or passwords results in loss of access to all encrypted data.

Be sure to enable BitLocker after the installation is complete.

For information on BitLocker, see BitLocker for Servers on the **Microsoft website**.

Graphics are not displaying correctly

Symptom

Graphics are not displaying as expected.

Cause

- The graphics or video adapter is not supported on the server.
- Insufficient power to support the graphics or video adapter.
- The graphics or video adapter is not installed or seated properly.

Action

- Use only cards listed as a supported option for the server.

  For a list of supported options, see the QuickSpecs on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/qs**).

- Be sure that the power supplies installed in the server provide adequate power to support the server configuration. Some high-power graphics adapters require specific cabling, fans, or auxiliary power.

  For more information about adapter power requirements, see the documentation that ships with the graphics option or see the vendor website.

  For more information about server power capabilities, see the server documentation on the Hewlett Packard Enterprise website (**https://www.hpe.com/support/hpesc**).

- Be sure that the adapter is seated properly.

Video issues

Subtopics

The screen is blank for more than 60 seconds after powering up the server

Symptom

The screen is blank for more than 60 seconds after the server powered up.

Cause

- The monitor is not receiving power.
- The monitor is not cabled properly.
- The monitor cables are not connected properly.
- The power is not sufficient for a PCIe device or graphics controller installed on the server.
- A video expansion board is installed, but is not powered or configured properly.
- A video expansion board installed on the server is not supported.
- The video drive is not current.

Action

1. Be sure that the monitor power cord is plugged into a working grounded (earthed) AC outlet.
2. Power up the monitor and be sure that the monitor light is on, indicating that the monitor is receiving power.
3. Be sure that the monitor is cabled to the intended server or KVM connection.
4. Be sure that no loose connections exist by verifying the following connections:
   - For rack-mounted servers, check the cables to the KVM switch and be sure that the switch is correctly set for the server. You might need to connect the monitor directly to the server to be sure that the KVM switch has not failed.

- For tower model servers, check the cable connection from the monitor to the server, and then from the server to the power outlet.
- For blades, verify that the SUV cable is connected to the VGA cable on the monitor and to the connector on the front of the blade.

5. Press any key, or enter the password, and wait for a few moments for the screen to activate to be sure that the energy saver feature is not in effect.
6. Verify that a PCIe device or graphics controller does not need additional power to operate. For more information, see the device documentation.
7. Be sure that a video expansion board has not been added to replace onboard video, making it seem like the video is not working. Disconnect the video cable from the onboard video, and then reconnect it to the video jack on the expansion board.

   NOTE: All servers automatically bypass onboard video when a video expansion board is present.

8. Press any key, or enter the password, and wait for a few moments for the screen to activate to be sure that the power-on password feature is not in effect.

   You can also tell if the power-on password is enabled if a key symbol is displayed on the screen when POST completes. If you do not have access to the password, you must disable the power-on password by using the Password Disable switch on the system board.

   For more information, see the server documentation on the Hewlett Packard Enterprise website (https://www.hpe.com/support/hpesc).
9. If the video expansion board is installed in a PCI hot-plug slot, be sure that the slot has power by checking the power LED on the slot, if applicable.

   For more information, see the server documentation on the Hewlett Packard Enterprise website (https://www.hpe.com/support/hpesc).
10. Be sure the server and the OS support the video expansion board.
11. Be sure that the video driver is current.

    For driver requirements, see the third-party video adapter documentation.

More information

Opening a support case
Resolving loose connections

Monitor does not function properly with energy saver features

Symptom

The monitor does not function properly with energy saver features.

Cause

The monitor does not support energy saver features.

Action

Verify that the monitor supports energy saver features. If the monitor does not support energy saver features, disable the features.

Video colors are wrong

Symptom

The video colors are displayed wrong on the monitor.

Cause

- The video cable is not connected securely to the correct port.
- The monitor and KVM switch are not compatible with the video output of the server.
- The video cable is damaged.

Action

- Be sure that the 15 pin VGA cable is securely connected to the correct VGA port on the server and to the monitor.
- Be sure the monitor and any KVM switch are compatible with the VGA output of the server.
- Be sure that the VGA cable is not damaged.

  Replace the cable with a known working cable.

Slow-moving horizontal lines are displayed

Symptom

Slow-moving horizontal lines are displayed on the monitor.

Cause

Magnetic field interference is occurring.

Action

Move the monitor away from other monitors or power transformers.

Mouse/Keyboard not working

Symptom

The mouse and/or keyboard are not operating normally.

Action

1. Verify that all cables and cords are securely and properly connected. Check the following:
   - If you are using a KVM switching device, verify that the server is properly connected to the switch.
   - If you have rack-mounted servers, check the cables to the switch box to verify that the switch is correctly set for the server.
   - If you have tower model servers, check the cable connection from the input device to the server.
2. If you are using a KVM switching device, verify that all cables and connectors are the proper length and are supported by the switch.

   For more information, see the switch documentation.
3. Be sure the current drivers for the operating system are installed.
4. Replace the driver with a known functioning driver to verify that the device driver is not corrupted.
5. Restart the system. Check whether the input device functions correctly after the server restarts.
6. Replace the device with a known working equivalent device (a similar mouse or keyboard):
   - If the issue still occurs with the new mouse or keyboard, the connector port on the system I/O board is defective. Replace the board.

- If the issue no longer occurs, the original input device is defective. Replace the device.

7. Be sure the keyboard or mouse is connected to the correct port. Determine whether the keyboard lights flash at POST or the NumLock LED illuminates. If not, change port connections.
8. Clean the keyboard or mouse.

More information

Resolving loose connections

Network controller or FlexibleLOM issues

Subtopics

Network controller or FlexibleLOM is installed but not working

Network controller or FlexibleLOM has stopped working

Network controller or FlexibleLOM stopped working when an expansion board was added

Network interconnect blade issues

Network performance or virtual machine performance issues with HPE ProLiant servers with AMD processors

Network controller or FlexibleLOM is installed but not working

Symptom

The network controller or the FlexibleLOM is not working.

Action

1. Check the network controller or FlexibleLOM LEDs to see if any statuses indicate the source of the issue. For LED information, see the network controller documentation or server documentation.
2. Review the IML for error messages that could indicate the issue.
3. Be sure no loose connections exist.
4. Be sure the correct cable type is used for the network speed or that the correct SFP or DAC cable is used. For dual-port 10 GB networking devices, both SFP ports should have the same media (for example, DAC cable or equivalent SFP+ module). Mixing different types of SFP (SR/LR) on a single device is not supported.
5. Be sure the network cable is working by replacing it with a known functional cable.
6. Be sure a software issue has not caused the failure. For more information, see the operating system documentation.
7. Be sure the server and operating system support the controller. For more information, see the operating system documentation or server documentation.
8. Be sure the controller is enabled in the UEFI System Utilities.
9. Be sure the server ROM is up to date.
10. Be sure the controller drivers are up to date.
11. Be sure a valid IP address is assigned to the controller and that the configuration settings are correct.

More information

Resolving loose connections

Network controller or FlexibleLOM has stopped working

Symptom

The network controller or FlexibleLOM stopped working.

Action

1. Check the network controller or FlexibleLOM LEDs to see if any statuses indicate the source of the issue. For LED information, see the network controller documentation or server documentation.
2. Be sure the correct network driver is installed for the controller and that the driver file is not corrupted. Reinstall the driver.
3. Be sure no loose connections exist.
4. Be sure the network cable is working by replacing it with a known functional cable.
5. Be sure the network controller or FlexibleLOM is not damaged.

More information

Resolving loose connections

Network controller or FlexibleLOM stopped working when an expansion board was added

Symptom

The network controller or FlexibleLOM stopped working when an expansion board was added to the server.

Cause

- The network controller or FlexibleLOM is not seated or connected properly.
- The network controller or FlexibleLOM is not supported by the OS or the server.
- Installation of the network controller or FlexibleLOM changes the server configuration.
- The network controller or FlexibleLOM drivers are out of date.
- The driver parameters do not match the configuration of the network controller.

Action

1. Be sure no loose connections exist.
2. Be sure the server and operating system support the controller. For more information, see the operating system documentation or server documentation.
3. Be sure the new expansion board has not changed the server configuration, requiring reinstallation of the network driver:
   a. Uninstall the network controller driver for the malfunctioning controller in the operating system.
   b. Restart the server and run the appropriate option in the UEFI System Utilities. Be sure the server recognizes the controller and that resources are available for the controller.
   c. Restart the server, and then reinstall the network driver.
4. Be sure the correct drivers are installed. For more information, see the operating system documentation.
5. Be sure that the driver parameters match the configuration of the network controller. For more information, see the operating system documentation.

More information

Resolving loose connections

Network interconnect blade issues

Symptom

The network interconnect blade has issues.

Cause

The network interconnect blade is not properly seated or connected.

Action

Be sure the network interconnect blades are properly seated and connected.

Network performance or virtual machine performance issues with HPE ProLiant servers with AMD processors

Symptom

Network performance or virtual machine performance is not optimal with HPE ProLiant servers with AMD processors.

Cause

Various system component configurations might impact network performance:

- Network tuning
- Adapter parameters
- Operating system settings

Action

Review networking tuning information.

For more information, see the following:

- Service notices on the **Hewlett Packard Enterprise Support Center website**.
- Network tuning guides on the **AMD website**.

Energy pack issues

If you are required to replace an energy pack as part of the troubleshooting process, be sure to dispose of the energy pack properly.

WARNING:
To reduce the risk of fire or burns after removing the energy pack:

- Do not disassemble, crush, or puncture the energy pack.
- Do not short external contacts.
- Do not dispose of the energy pack in fire or water.
- Do not expose the energy pack to low air pressure as it might lead to explosion or leakage of flammable liquid or gas.
- Do not expose the energy pack to temperatures higher than 60°C (140°F).

After power is disconnected, battery voltage might still be present for 1s to 160s.

Subtopics

Energy pack support

Hewlett Packard Enterprise offers two centralized backup power source options to back up write cache content on HPE Smart Array controllers in case of an unplanned server power outage. In documentation and system messaging, "energy pack" is used to refer to both the HPE Smart Storage Battery and the HPE Smart Storage Hybrid Capacitor.

Energy pack not working

Symptom

Any server configured with an energy pack for HPE Smart Array Controllers might display a POST error message stating that the energy pack failed.

Cause

The energy pack discharged to a threshold where it is permanently disabled and must be replaced. If shelved for a long period of time, the energy pack might lose charge.

Action

1. Verify the energy pack status in iLO.

   For more information, see the iLO User Guide on the Hewlett Packard Enterprise website (**https://www.hpe.com/support/ilo-docs**).
2. Download the Active Health System Log, as described in Active Health System Log download methods.
3. If the issue persists, open a support case using the Hewlett Packard Enterprise Support Center website (**https://www.hpe.com/support/hpesc**).
4. Install an energy pack with a future recharge date.

More information

Accessing Hewlett Packard Enterprise Support

Energy pack configuration error

Symptom

Any HPE server configured with an energy pack that receives a POST error message or an IML message indicating a configuration error or that the load capacity is exceeded for the energy pack.

Cause

The number of battery-backed devices exceeds the installed energy pack capacity.

Action

Do one of the following:

- Ensure that the energy pack is fully charged. An HPE Smart Storage Battery might take up to 120 minutes in a powered server or chassis to charge enough to support the number of battery-backed devices installed. An HPE Smart Storage Hybrid Capacitor takes only 5 minutes to charge.
- If the charge level is insufficient to support the battery-backed devices installed in the server or chassis, the energy pack output might not be enabled while the energy pack is charging. It might take up to 120 minutes in a powered server or chassis for the battery to charge fully. An HPE Smart Storage Hybrid Capacitor takes only 5 minutes to charge.
- Verify the energy pack status in iLO.

  For more information, see the iLO User Guide on the Hewlett Packard Enterprise website (**https://www.hpe.com/support/ilo-docs**).
- Remove some of the battery-backed devices using the energy pack. HPE Smart Array Controllers and NVDIMMs use the HPE Smart Storage Battery. NVDIMMs are not supported with the HPE Smart Storage Hybrid Capacitor.

  For more information, see the server maintenance and service guide.
- Verify that the BIOS version supports the energy pack and controllers installed on the server.

Energy pack failure

Symptom

Any server configured with an energy pack for HPE Smart Array Controllers receives a POST error message or an IML message indicating an energy pack failure.

Cause

- Communication with the energy pack failed.
- The energy pack output is not enabled.

Action

- Verify that the energy pack is installed and cabled properly.

  For more information, see the **HPE SR Gen11 Controller User Guide**.
- Verify the energy pack status in iLO.

  For more information, see the iLO User Guide on the Hewlett Packard Enterprise website (**https://www.hpe.com/support/ilo-docs**).
- Update the system ROM.
- If the issue persists, open a support case using the Hewlett Packard Enterprise Support Center website (**https://www.hpe.com/support/hpesc**).

More information

Updating the firmware

Cable issues

Subtopics

Drive errors, retries, timeouts, and unwarranted drive failures occur when using an older Mini SAS cable

USB device not recognized, an error message is displayed, or the device does not power on when connected to an SUV cable

Drive errors, retries, timeouts, and unwarranted drive failures occur when using an older Mini SAS cable

Symptom

Errors, retries, timeouts, and unwarranted drive failures occur when using an older Mini SAS cable.

Cause

The Mini SAS cable might be reaching its life expectancy.

Action

The Mini SAS connector life expectancy is 250 connect/disconnect cycles (for external, internal, and cable Mini SAS connectors).

If using an older cable that could be near the life expectancy, replace the Mini SAS cable.

USB device not recognized, an error message is displayed, or the device does not power on when connected to an SUV cable

Symptom

- The USB device is not recognized when connected to an SUV cable.
- An error message is displayed.
- The device does not power on when connected to an SUV cable.

Cause

The USB connectors on the SUV cable do not support devices that require a power source greater than 500mA.

Action

Remove the USB device and do one of the following:

- Attach a USB device that requires a power source less than 500mA.
- Attach an externally powered USB hub to the SUV cable and connect the USB device to the hub.

Software issues

Subtopics

Operating system issues and resolutions

Subtopics

Operating system issues

Subtopics

Operating system locks up

Symptom

The operating system locks up.

Action

- Scan for viruses with an updated virus scan utility.
- Review the iLO Event Log.
- Review the IML.
- Gather the NMI Crash Dump information for review, if needed.
- Download the Active Health System Log, as described in Active Health System Log download methods.
- If the issue persists, open a support case using the Hewlett Packard Enterprise Support Center website (https://www.hpe.com/support/hpesc).

Errors are displayed in the error log

Symptom

Error messages are displayed in the error log.

Action

Follow the information provided in the error log.

For more information, see the operating system documentation.

Issues occur after the installation of a service pack

Symptom

Issues occur after the installation of a service pack

Action

Update the operating system.

More information

Updating the operating system

Updating the operating system

Prerequisites

Before updating the operating system, read the release notes for each update.

Use care when applying operating system updates (Service Packs, hotfixes, and patches). If you do not require specific fixes from the update, Hewlett Packard Enterprise recommends that you do **not** apply the updates. Some updates overwrite files specific to Hewlett Packard Enterprise.

Procedure

1. Perform a full system backup.
2. Apply the operating system update, using the instructions provided.
3. Install the current drivers.

Results

If you apply the update and have issues, locate files to correct the issues on the Hewlett Packard Enterprise Support Center (**https://www.hpe.com/support/hpesc**).

Reconfiguring or reloading software

Subtopics

Prerequisites for reconfiguring or reloading software

Restoring a backup version

Prerequisites for reconfiguring or reloading software

About this task

If all other options have not resolved the issue, consider reconfiguring the system. Before reconfiguring the system, do the following:

Procedure

1. Weigh the projected downtime of a software reload against the time spent troubleshooting intermittent issues. It might be advantageous to start over by removing and reinstalling the software with issues, or, in some cases, by using the Erase Utility and reinstalling all system software.

   > **CAUTION:** Perform a backup before running the System Erase Utility. The utility sets the system to its original factory state, deletes the current hardware configuration information, including array setup and disk partitioning, and erases all connected hard drives completely. Refer to the instructions for using this utility.

2. Be sure the server has adequate resources (processor speed, hard drive space, and memory) for the software.
3. Be sure the server ROM is current and the configuration is correct.
4. Be sure that you have printed records of all troubleshooting information you have collected to this point.
5. Be sure that you have two good backups before you start. Test the backups using a backup utility.
6. Check the operating system and application software resources to be sure that you have the latest information.
7. If the last-known functioning configuration does not work, try to recover the system with operating system recovery software.

   For more information, see the operating system documentation.

Restoring a backup version

If you recently upgraded the operating system or software and cannot resolve the issue, try restoring a previously saved version of the system. Before restoring the backup, make a backup of the current system. If restoring the previous system does not correct the issue, you can restore the current set to be sure you do not lose additional functionality.

For more information, see the documentation provided with the backup software.

Linux resources

For troubleshooting information specific to Linux operating systems, see the Linux for ProLiant website at **https://www.hpe.com/info/proliantlinux**.

To assist in possible Linux installation issues on HPE ProLiant servers, capture either the sosreport or supportconfig before contacting Hewlett Packard Enterprise technical support.

More information

Accessing Hewlett Packard Enterprise Support
Linux reports

Application software issues

Subtopics

Software freezes

Errors occur after a software setting is changed

Errors occur after the system software is changed

Errors occur after an application is installed

Software freezes

Symptom

The software freezes.

Cause

- The software might be incompatible with other software on the server.
- Known issues might exist with the software.
- The server configuration might have changed.
- The server might be infected by a virus.

Action

1. Verify the application log and operating system log for entries indicating why the software locked up.
2. Verify for compatibility and incompatibility with other software on the server.
3. Verify the support website of the software vendor for known issues.
4. Review log files for changes made to the server that might have caused the issue.
5. Scan the server for viruses with an updated virus scan utility.

Errors occur after a software setting is changed

Symptom

The system locks up after settings were changed.

Cause

The new system settings are not supported.

Action

Check the system logs to determine what changes were made, and then change the settings back to the original configuration.

Errors occur after the system software is changed

Symptom

Errors occur after the system software is changed.

Action

Change the settings back to the original configuration. If more than one setting was changed, change the settings one at a time to isolate the cause of the issue.

Errors occur after an application is installed

Symptom

Errors occur after an application is installed on a server.

Action

- Verify the application log and operating system log for entries indicating why the software failed.
- Verify the system settings to determine if they are the cause of the error.

  You might need to obtain the settings from the server setup utility and manually set the software switches.

  For more information, see the application documentation, the vendor website, or both.
- Check for overwritten files.

  To determine which files are added by the application, see the application documentation.
- Reinstall the application.
- Be sure you have the most current drivers.

ROM issues

Subtopics

Remote ROM flash issues

Subtopics

Command-line syntax error

Symptom

If the correct command-line syntax is not used, an error message describing the incorrect syntax is displayed and the program exits.

Cause

Incorrect command-line is used.

Action

1. Correct the command-line syntax.
2. Restart the process.

Access denied on target computer

Symptom

When attempting to access a networked target computer for which administrative privileges are not authorized, an error message is displayed describing the issue, and then the program exits.

Cause

Administrative privileges are not available for the user requesting access.

Action

1. Obtain administrative privileges for the target computer or server.
2. Restart the process.

   Be sure the remote registry service is running on a Windows-based system.

Invalid or incorrect command-line parameters

Symptom

If incorrect parameters are passed into command-line options, an error message describing the invalid or incorrect parameter is displayed and the program exits.

Cause

Invalid or incorrect command-line parameters are used.

Action

1. Correct the invalid parameter.
2. Restart the process.

Network connection fails on remote communication

Symptom

An error message describing the broken connection displays and the program exits.

Cause

Because network connectivity cannot be guaranteed, it is possible for the administrative client to become disconnected from the target server during the ROM flash preparation. If any remote connectivity procedure fails during the ROM flash online preparation, the ROM flash does not occur for the target system.

Action

1. Attempt to ascertain and correct the cause of connection failure.
2. Restart the process.

Failure occurs during ROM flash

Symptom

The server will not start.

Cause

The flash cannot be interrupted during a ROM flash, or the ROM image is corrupted and the server does not start. The most likely reason for failure is a loss of power to the system during the flash process.

Action

Initiate ROMPaq disaster recovery procedures.

Target system is not supported

Symptom

If the target system is not listed in the supported servers list, an error message appears and the program exits.

Cause

Only supported systems can be upgraded using the Remote ROM Flash utility.

Action

To determine if the server is supported, see the Hewlett Packard Enterprise website (**https://www.hpe.com/support/hpesc**).

System requests recovery method during a firmware update

Symptom

System requests recovery method during a firmware update.

Action

1. Always disable BitLocker before updating the firmware.

   If BitLocker is not disabled, the system requests the recovery method selected when BitLocker was configured. Failure to provide the correct recovery password or passwords results in loss of access to all encrypted data.

2. Update the firmware.

   If BitLocker is configured to measure option ROMs, follow the firmware upgrade steps in "Keeping the system current."

   BitLocker can be configured to measure the following option ROMs:
   - NIC
   - Smart Array storage
   - Standup HBAs

3. Enable BitLocker after the firmware updates are complete.

For information on BitLocker, see BitLocker for servers on the Microsoft website at http://technet.microsoft.com/en-us/library/cc732774.aspx.

Boot issues

Subtopics

Server does not boot

PXE boot guidelines for UEFI servers

Server does not boot

Symptom

The server does not boot.

Cause

- The system ROMPaq flash fails.
- The system ROM is corrupt.
- The server fails to boot after a SYSROM update using ROMPaq.
- A logical drive is not configured on the Smart Array RAID controller.
- The controller boot order is not set properly.
- Smart Arrays containing multiple logical drives might require the boot logical drive to be selected within HPE SSA (F5).
- Invalid or corrupted firmware is detected.

Action

- Verify the controller boot order.

  For more information, see the UEFI System Utilities user guide for your product on the Hewlett Packard Enterprise website (https://www.hpe.com/info/uefi/docs).

- Access the redundant ROM.

Subtopics

Accessing the redundant ROM (non-blade servers)

More information

Accessing the redundant ROM (non-blade servers)

Accessing the redundant ROM (non-blade servers)

About this task

If the system ROM is corrupted, the system automatically switches to the redundant ROM in most cases. If the system does not automatically switch to the redundant ROM, perform the following steps.

Procedure

1. Power down the server.
2. Remove the server from the rack, if necessary.
3. Remove the access panel.
4. Change positions 1, 5, and 6 of the system maintenance switch to on.
5. Install the access panel.
6. Install the server into the rack.
7. Power up the server.
8. After the system beeps, repeat steps 1 through 3.
9. Change positions 1, 5, and 6 of system maintenance switch to off.
10. Repeat steps 5 and 6.

Results

If both the current and backup versions of the ROM are corrupt, return the system board for a service replacement.

To switch to the backup ROM when the System ROM is not corrupt, use the UEFI System Utilities.

PXE boot guidelines for UEFI servers

- When the server is configured for UEFI Boot Mode, PXE servers must be configured with a UEFI boot image. For x64 EFI machines, the DHCP server also needs to be configured to support x64 EFI DHCP boot requests.
  For more information, see the UEFI System Utilities user guide for your product on the Hewlett Packard Enterprise website (**https://www.hpe.com/info/uefi/docs**).
- When booting VMware ESX in UEFI Boot Mode, UEFI Optimized Boot must be enabled.
- When the server boots in UEFI Boot Mode, it does not boot media with a legacy OS installation. This includes DOS targets and Windows or Linux systems installed in Legacy BIOS Boot Mode. The reverse is also true for servers that boot in Legacy BIOS Boot Mode.

Reports and logs

Subtopics

Overview

Active Health System log

Integrated Management Log

Performing a Diagnostics task using HPE Smart Storage Administrator

HPE Smart Storage Administrator Diagnostics Utility CLI

HPS report

Linux reports

Opening a support case

More information

Overview

You might be asked to gather some of the following reports or logs when you contact Hewlett Packard Enterprise:

- Active Health System Log
- Integrated Management Log
- HPE SSA diagnostic tasks
- HPE Smart Storage Administrator Diagnostic Utility CLI reports
- HPS report
- `sosreport` and `supportconfig`

To download the Active Health System Log, see Active Health System Log download methods.

Active Health System log

The Active Health System log is a single file that contains basic information required by Hewlett Packard Enterprise support to analyze the system.

You can download the Active Health System log manually and send it to Hewlett Packard Enterprise using the following tools:

- HPE iLO
- iLO RESTful API
- `curl` command-line tool

The Active Health System log can be captured using either offline or online methods.

Subtopics

Active Health System Log download methods

You can use the following methods to download the Active Health System Log:

- **iLO web interface**—Download the log for a range of days or download the entire log from the Active Health System Log page.
- **iLO Service Port**—Download the log by connecting a USB flash drive to the iLO Service Port on the front of the server.
- **cURL utility**—Download the log by using the cURL command-line tool.
- **Intelligent Provisioning**—For instructions, see the Intelligent Provisioning user guide.
- **iLO RESTful API and RESTful Interface Tool**—For more information, see **https://www.hpe.com/support/restfulinterface/docs**.

Subtopics

Downloading the Active Health System Log for a date range

Procedure

1. In the iLO UI, click Information in the navigation tree, and then click the Active Health System Log tab.

   The Active Health System Log is inaccessible when a download of the log is in progress.

2. Enter the range of days to include in the log. The default value is seven days.

   a. Click the From box.

      A calendar is displayed.

   b. Select the range start date on the calendar.

   c. Click the To box.

      A calendar is displayed.

   d. Select the range end date on the calendar.

   To reset the range to the default values, click ↩.

3. (Optional) Enter the following information to include in the downloaded file:

   - Support case number (up to 14 characters)
   - Contact name
   - Phone number (up to 39 characters)
   - Email address
   - Company name

   The contact information you provide will be treated in accordance with the Hewlett Packard Enterprise privacy statement. This information is not written to the log data stored on the server.

4. Click Download.

5. Save the file.

6. If you have an open support case, you can email the log file to your service technician.

   Use the following convention for the email subject: CASE: <case number>.

   Files that are larger than 25 MB must be compressed and uploaded to an FTP site. If needed, contact Hewlett Packard Enterprise for FTP site information.

7. (Optional) Upload the file to HPE InfoSight for Servers.

   You can access the Analyze Logs page in HPE InfoSight for Servers by selecting Infrastructure > Analyze Logs under the Compute heading.

   For more information, see the HPE InfoSight for Servers User Guide at the following website: **https://www.hpe.com/support/infosight-servers-docs**.

Downloading the entire Active Health System Log

About this task

It might take a long time to download the entire Active Health System Log. If you must upload the Active Health System Log for a technical issue, Hewlett Packard Enterprise recommends downloading the log for the specific range of dates in which the problem occurred.

Procedure

1. Click Information in the navigation tree, and then click the Active Health System Log tab.

   The Active Health System Log is inaccessible when a download of the log is in progress.

2. Click Show Advanced Settings.
3. (Optional) Enter the following information to include in the downloaded file:
   - Support case number (up to 14 characters)
   - Contact name
   - Phone number (up to 39 characters)
   - Email address
   - Company name

   The contact information that you provide will be treated in accordance with the Hewlett Packard Enterprise privacy statement. This information is not written to the log data stored on the server.
4. Click Download Entire Log.
5. Save the file.
6. If you have an open support case, you can email the log file to your service technician.

   Use the following convention for the email subject: CASE: <case number>.

   Files that are larger than 25 MB must be compressed and uploaded to an FTP site. If needed, contact Hewlett Packard Enterprise for FTP site information.
7. (Optional) Upload the file to HPE InfoSight for Servers.

   You can access the Analyze Logs page in HPE InfoSight for Servers by selecting Infrastructure > Analyze Logs under the Compute heading.

   For more information, see the HPE InfoSight for Servers User Guide at the following website: **https://www.hpe.com/support/infosight-servers-docs**.

Downloading the Active Health System Log by using cURL

About this task

Procedure

1. Install cURL.
2. You can download cURL from the following website: **http://curl.haxx.se/**.
3. Open a command window.
4. Change to the `curl` directory.

5. Enter a command similar to the following examples.

   IMPORTANT:

   When you enter these commands, ensure that you do not use spaces or other unsupported characters.

   If required by your command-line environment, special characters such as the ampersand must be preceded by the escape character. See the command-line environment documentation for more information.

   - To download the Active Health System Log for a range of dates:

     ```
     curl "https://<iLO_IP_address>/ahsdata/ahs.ahs?from=<yyyy-mm-dd>&to=
     <yyyy-mm-dd>" -k -v -u <username>:<password> -o <filename>.ahs
     ```

   - To download the Active Health System Log for the last seven days, and add a Hewlett Packard Enterprise support case number to the log header:

     ```
     curl "https://<iLO_IP_address>/ahsdata/ahs.ahs?days=<number_of_days>
     &case_no=<number>" -k -v -u <username>:<password> -o <filename>.ahs
     ```

   - To download the Active Health System Log for the last seven days, and include a case number and contact information:

     ```
     curl "https://<iLO_IP_address>/ahsdata/ahs.ahs?days=<number_of_days>
     &case_no=<number>&contact_name=<name>&phone=<phone_number>&email=
     <email_address>&co_name=<company>" -k -v -u <username>:<password>
     -o <filename>.ahs
     ```

   - To download the entire Active Health System Log:

     ```
     curl "https://<iLO_IP_address>/ahsdata/ahs.ahs?downloadAll=1" -k -v
     -u <username>:<password> -o <filename>.ahs
     ```

6. The file is saved to the specified path.
7. Close the command window.
8. (Optional) If you have an open support case, email the log file to your service technician.

   Use the following convention for the email subject: CASE: <case number>.

   Files that are larger than 25 MB must be compressed and uploaded to an FTP site. If needed, contact Hewlett Packard Enterprise for FTP site information.
9. (Optional) Upload the log file to HPE InfoSight for Servers to view the log data or create a support case for servers under a valid warranty or support contract.

   For more information, see the HPE InfoSight for Servers documentation at the following website: **https://www.hpe.com/support/infosight-servers-docs**.

Subtopics

cURL command usage with iLO

cURL command usage with iLO

When you use cURL to extract the Active Health System log, the command components include the following:

Options

`<iLO IP address>`

Specifies the iLO IP address.

`from=<yyyy-mm-dd>&to=<yyyy-mm-dd>`

Represents the start and end date of the range of dates to include in the log. Enter dates in the format `year-month-day`, for example, 2017-07-29 for July 29, 2017.

`days=<number of days>`

Specifies that you want to download the log file for the last `<number of days>` from today's date.

`downloadAll=1`

Specifies that you want to download the entire log.

`-k`

Specifies that HTTPS warnings will be ignored, which could make the connection insecure.

`-v`

Specifies verbose output.

`-u <username>:<password>`

Specifies your iLO user account credentials.

`-o <filename>.ahs`

Specifies the output file name and path.

`case_no=<HPE support case number>`

Specifies a Hewlett Packard Enterprise support case number to add to the log header.

Options for adding contact information to the downloaded log

`phone=<phone number>`

Specifies a phone number to add to the log header.

`email=<email address>`

Specifies an email address to add to the log header.

`contact_name=<contact name>`

Specifies a contact name to add to the log header.

`co_name=<company name>`

Insert your company name in the log header.

Clearing the Active Health System Log

Prerequisites

- Configure iLO Settings privilege
- Enable Active Health System Logging is enabled in the Show Advanced Settings section of the Active Health System Log page.

About this task

If the log file is corrupted, or if you want to clear and restart logging, clear the Active Health System Log.

Procedure

1. Click Information in the navigation tree, and then click the Active Health System Log tab.

   The Active Health System Log is inaccessible when a download of the log is in progress.
2. Click Show Advanced Settings.
3. Scroll to the Clear Log section, and then click Clear.

4. When prompted to confirm the request, click Yes, clear.

   iLO notifies you that the log is being cleared.

5. Reset iLO.

   Resetting iLO is required because some Active Health System data is recorded to the log only during iLO startup. Performing this step ensures that a complete set of data is available in the log.

6. Reboot the server.

   Rebooting the server is required because some information, such as the operating system name and version, is logged at server startup. Performing this step ensures that a complete set of data is available in the log.

Integrated Management Log

The IML records hundreds of events and stores them in an easy-to-view form. The IML timestamps each event with one-minute granularity.

You can view recorded events in the IML in several ways, including the following:

- From within HPE SIM
- From within the UEFI System Utilities
- From within the Embedded UEFI shell
- From within the iLO web interface

Subtopics

Viewing the IML

Viewing the IML

Procedure

1. Click Information in the navigation tree, and then click the Integrated Management Log tab.
2. (Optional) Use the sort, search, and filter features to customize the log view.
3. (Optional) To refresh the event list, click  .
4. (Optional) To view the event details pane, click an event.

Performing a Diagnostics task using HPE Smart Storage Administrator

Procedure

1. Open HPE Smart Storage Administrator.
2. Open the **Diagnostics** panel by doing one of the following:
   - Select a device and click **Diagnose** in the quick navigation menu.
   - Select an available device from the **Home** screen, and then click **Diagnose** under the available options.
3. Select a report type.

For this example, use the Array Diagnostic Report selection.

4. Select **Array Diagnostic Report**.

   The **Actions** panel for Array Diagnostic Report appears.

5. Click one of the task buttons:

   - If you click **View Diagnostic Report**, the report appears. When you are finished viewing the current report, click **Close** or **Save**.
   - If you click **Save Diagnostic Report**, wait for the report to generate, and then click **Close Report** or **Save Report**.

HPE Smart Storage Administrator Diagnostics Utility CLI

Subtopics

Installing the utility

Procedure

1. Go to the HPE Smart Storage Administrator page.
2. Click **View Download Files**.
3. Click the zip file to download the file.
4. Save, and then run the executable file.

   By default, the software installs at `C:\Program Files\Smart Storage Administrator\`.

Launching the utility in CLI mode

About this task

Procedure

1. Click **Start>All Programs>Windows System>Smart Storage Administrator Diagnostics Utility>Read Me**
2. Open a command prompt as administrator.
3. Change directory (`cd`) to the location where `ssaducli.exe` is installed.

   This directory is commonly C:\Program Files\Smart Storage Administrator\ssaducli\bin.

4. Do one of the following:

   - Generate a diagnostic report with the following command: `ssaducli -f adu-report.zip`
   - Generate a SmartSSD Wear Gauge report with the following command: `ssaducli -ssd -f ssd-report.zip`

Results

For more options, use the following command:

`ssaducli -help`

Diagnostic report procedures

Subtopics

Viewing the diagnostic report

Identifying and viewing diagnostic report files

Viewing the diagnostic report

Procedure

1. Launch the utility.
2. Browse to the .zip file you created using the utility.
3. Open the HTML file to view the report.

Identifying and viewing diagnostic report files

About this task

The diagnostic report output archive contains the following files:

- `ADUReport.txt` —Diagnostic report in text format
- `ADUReport.xml` —Diagnostic report in XML format
- `ADUReportViewer.htm` —HTML viewer for XML diagnostic report
- `SlotX.txt (SlotX.old)` —Controller serial output log
  The serial output log file(s) are only available if the Smart Array SAS/SATA Event Notification Service is installed and running.

Procedure

1. Extract `ADUReportViewer.htm` to a directory.
2. Open `ADUReportViewer.htm` in the browser.

SmartSSD Wear Gauge report procedures

Subtopics

Viewing the SmartSSD Wear Gauge report

Identifying and viewing SmartSSD Wear Gauge report files

Viewing the SmartSSD Wear Gauge report

Procedure

1. Launch the utility.
2. Browse to the .zip file you created using the utility.
3. Open the HTML file to view the report.

Identifying and viewing SmartSSD Wear Gauge report files

About this task

The SmartSSD Wear Gauge report output archive contains the following files:

- `SmartSSDWearGaugeReport.txt` —SmartSSD wear gauge report in text format
- `SmartSSDWearGaugeReport.json` —SmartSSD wear gauge report in JSON format
- `SmartSSDWearGaugeReport.htm` —HTML viewer for the JSON wear gauge report

Procedure

1. Extract the following files to a single directory:
   - `SmartSSDWearGaugeReport.json`
   - `SmartSSDWearGaugeReport.htm`
2. Open `SmartSSDWearGaugeReport.htm` in the browser.

HPS report

The HPS reports are used to capture critical operation and configuration information from Windows server environments. The HPS report utility can be downloaded from the Hewlett Packard Enterprise website (**https://www.hpe.com/support/hpsreports**). To start the report, run the executable file and the utility will save a cab file in the `C:\WINDOWS\HPSReports\Enhanced\Report` directory.

Run this report before contacting Hewlett Packard Enterprise technical support and be prepared to send the cab file.

Linux reports

To assist in possible Linux installation issues on HPE servers, capture either the `sosreport` or `supportconfig` before contacting Hewlett Packard Enterprise Support.

More information

Accessing Hewlett Packard Enterprise Support

Opening a support case

Prerequisites

Review the information needed to open a support case .

About this task

If the issue persists after following the recommended troubleshooting actions, open a support case using the Hewlett Packard Enterprise Support Center website (**https://www.hpe.com/support/hpesc**).

Procedure

1. Access the Hewlett Packard Enterprise Support Center website (**https://www.hpe.com/support/hpesc**).
2. Select Access Cases.
3. Sign in with your HPE Passport.
4. Do one of the following:
   - Enter your contract or warranty ID.
   - To select from a list of your products, click Browse your contract & warranty products .
5. Click Submit a case.
6. Enter the requested information, and then click Submit.

   A Hewlett Packard Enterprise Support Center support agent will contact you.

Additional troubleshooting resources

Subtopics

Server documentation

Product QuickSpecs

Technical papers

Service notifications, advisories, and notices

Subscription services

HPE Pointnext Portfolio

Spare part numbers

Server documentation

Each server has a number of product-specific documents that include setup, installation, maintenance, service, and cabling information. The server documentation can be accessed from the Hewlett Packard Enterprise Support Center website (**https://www.hpe.com/support/hpesc**).

Product QuickSpecs

For more information about product features, specifications, options, configurations, and compatibility, see the product QuickSpecs on the Hewlett Packard Enterprise website .

Technical papers

Technical papers provide documentation about complex technical topics. Some technical papers contain in-depth details and procedures. Topics include Hewlett Packard Enterprise products, Hewlett Packard Enterprise technology, OS, networking products, and performance. For more information, see the following website: **https://www.hpe.com/support/hpesc**.

Service notifications, advisories, and notices

Service notifications, advisories, and notices are available to provide more information about any known issues with an HPE server. To locate service notifications, advisories or notices, search for your product on the Hewlett Packard Enterprise website (**https://www.hpe.com/support/hpesc**). Use the filters to narrow down the list of by documents type.

Subscription services

Receive support alerts, product support communications, driver updates, software releases, firmware updates, and customer replaceable component information in your email by signing up on the **Hewlett Packard Enterprise website**.

To change options for support alerts you already receive, click the link to sign in on the right.

HPE Pointnext Portfolio

HPE Pointnext delivers confidence, reduces risk, and helps customers realize agility and stability. Hewlett Packard Enterprise helps customers succeed through Hybrid IT by simplifying and enriching the on-premise experience, informed by public cloud qualities and attributes.

Operational Support Services enable you to choose the right service level, length of coverage, and response time to fit your business needs. For more information, see the Hewlett Packard Enterprise website:

https://www.hpe.com/us/en/services/operational.html

Utilize the Advisory and Transformation Services in the following areas:

- Private or hybrid cloud computing
- Big data and mobility requirements
- Improving data center infrastructure
- Better use of server, storage, and networking technology

For more information, see the Hewlett Packard Enterprise website:

https://www.hpe.com/services/consulting

Spare part numbers

Hewlett Packard Enterprise continually improves and changes product parts. For complete and current supported spare parts information, see the Hewlett Packard Enterprise PartSurfer website:

- Desktop: **https://www.hpe.com/info/partssurfer**
- Mobile: **https://partsurfermobile.ext.hpe.com**

Support and other resources

Subtopics

Accessing Hewlett Packard Enterprise Support

Accessing updates

Remote support

Warranty information

Regulatory information

Documentation feedback

Accessing Hewlett Packard Enterprise Support

- For live assistance, go to the Contact Hewlett Packard Enterprise Worldwide website:

  https://www.hpe.com/info/assistance
- To access documentation and support services, go to the Hewlett Packard Enterprise Support Center website:

  https://www.hpe.com/support/hpesc

Information to collect

- Technical support registration number (if applicable)
- Product name, model or version, and serial number
- Operating system name and version
- Firmware version
- Error messages
- Product-specific reports and logs
- Add-on products or components
- Third-party products or components

Accessing updates

- Some software products provide a mechanism for accessing software updates through the product interface. Review your product documentation to identify the recommended software update method.
- To download product updates:

  Hewlett Packard Enterprise Support Center

https://www.hpe.com/support/hpesc

My HPE Software Center

https://www.hpe.com/software/hpesoftwarecenter

- To subscribe to eNewsletters and alerts:

  https://www.hpe.com/support/e-updates

- To view and update your entitlements, and to link your contracts and warranties with your profile, go to the Hewlett Packard Enterprise Support Center More Information on Access to Support Materials page:

  https://www.hpe.com/support/AccessToSupportMaterials

IMPORTANT:

Access to some updates might require product entitlement when accessed through the Hewlett Packard Enterprise Support Center. You must have an HPE Account set up with relevant entitlements.

Remote support

Remote support is available with supported devices as part of your warranty or contractual support agreement. It provides intelligent event diagnosis, and automatic, secure submission of hardware event notifications to Hewlett Packard Enterprise, which initiates a fast and accurate resolution based on the service level of your product. Hewlett Packard Enterprise strongly recommends that you register your device for remote support.

If your product includes additional remote support details, use search to locate that information.

HPE Get Connected

https://www.hpe.com/services/getconnected

HPE Pointnext Tech Care

https://www.hpe.com/services/techcare

HPE Complete Care

https://www.hpe.com/services/completecare

Warranty information

To view the warranty information for your product, see the links provided below:

HPE ProLiant and IA-32 Servers and Options

https://www.hpe.com/support/ProLiantServers-Warranties

HPE Enterprise and Cloudline Servers

https://www.hpe.com/support/EnterpriseServers-Warranties

HPE Storage Products

https://www.hpe.com/support/Storage-Warranties

HPE Networking Products

https://www.hpe.com/support/Networking-Warranties

Regulatory information

To view the regulatory information for your product, view the Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products, available at the Hewlett Packard Enterprise Support Center:

https://www.hpe.com/support/Safety-Compliance-EnterpriseProducts

Additional regulatory information

Hewlett Packard Enterprise is committed to providing our customers with information about the chemical substances in our products as needed to comply with legal requirements such as REACH (Regulation EC No 1907/2006 of the European Parliament and the Council). A chemical information report for this product can be found at:

https://www.hpe.com/info/reach

For Hewlett Packard Enterprise product environmental and safety information and compliance data, including RoHS and REACH, see:

https://www.hpe.com/info/ecodata

For Hewlett Packard Enterprise environmental information, including company programs, product recycling, and energy efficiency, see:

https://www.hpe.com/info/environment

Documentation feedback

Hewlett Packard Enterprise is committed to providing documentation that meets your needs. To help us improve the documentation, use the Feedback button and icons (at the bottom of an opened document) on the Hewlett Packard Enterprise Support Center portal (**https://www.hpe.com/support/hpesc**) to send any errors, suggestions, or comments. This process captures all document information.