Hewlett Packard Enterprise

EAC Getting Started Guide for HPE ProLiant ML110 Gen10 Server

Abstract

This document contains user information and procedures to assist users with first-time installations.

Contents

Product overview

The HPE ProLiant ML110 Gen10 Server delivers a performance that meets the growing needs of the SMB. The server is a single processor, 4.5U Tower Server that is designed to provide enterprise class features such as redundancy, reliability, and manageability. The server delivers the right size Tower with performance and expandability that covers a wide range of applications and workloads and addresses our customers from SMB to enterprise class server ROBO environments. Accelerate your business with this right-sized compute.

Setting up and installing

Optional service

Delivered by experienced, certified engineers, Hewlett Packard Enterprise support services help you keep your servers up and running with support packages tailored specifically for HPE ProLiant systems. Hewlett Packard Enterprise support services let you integrate both hardware and software support into a single package. A number of service level options are available to meet your business and IT needs.

Hewlett Packard Enterprise support services offer upgraded service levels to expand the standard product warranty with easy-to-buy, easy-to-use support packages that will help you make the most of your server investments. Some of the Hewlett Packard Enterprise support services for hardware, software or both are:

- Foundation Care – Keep systems running.

  - 6-Hour Call-to-Repair[1]

  - 4-Hour 24x7

  - Next Business Day

- Proactive Care – Help prevent service incidents and get you to technical experts when there is one.

  - 6-Hour Call-to-Repair[1]

  - 4-Hour 24x7

  - Next Business Day

- Deployment service for both hardware and software

- Hewlett Packard Enterprise Education Services – Help train your IT staff.

[1]The time commitment for this repair service might vary depending on the site's geographical region. For more service information available in your site, contact your local **Hewlett Packard Enterprise support center**.

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

Operational requirements

Space and airflow requirements

To allow for servicing and adequate airflow, observe the following space and airflow requirements when deciding where to install a rack:

- Leave a minimum clearance of 63.5 cm (25 in) in front of the rack.

- Leave a minimum clearance of 76.2 cm (30 in) behind the rack.

- Leave a minimum clearance of 121.9 cm (48 in) from the back of the rack to the back of another rack or row of racks.

Hewlett Packard Enterprise servers draw in cool air through the front door and expel warm air through the rear door. Therefore, the front and rear rack doors must be adequately ventilated to allow ambient room air to enter the cabinet, and the rear door must be adequately ventilated to allow the warm air to escape from the cabinet.

⚠ **CAUTION:**
To prevent improper cooling and damage to the equipment, do not block the ventilation openings.

When vertical space in the rack is not filled by a server or rack component, the gaps between the components cause changes in airflow through the rack and across the servers. Cover all gaps with blanking panels to maintain proper airflow.

⚠ **CAUTION:**
Always use blanking panels to fill empty vertical spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage.

The 9000 and 10000 Series Racks provide proper server cooling from flow-through perforations in the front and rear doors that provide 64 percent open area for ventilation.

⚠ **CAUTION:**
If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment:

- Front and rear doors—If the 42U rack includes closing front and rear doors, you must allow 5,350 sq cm (830 sq in) of holes evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation).

- Side—The clearance between the installed rack component and the side panels of the rack must be a minimum of 7 cm (2.75 in).

Temperature requirements

To ensure continued safe and reliable equipment operation, install or position the system in a well-ventilated, climate-controlled environment.

The maximum recommended ambient operating temperature (TMRA) for most server products is 35°C (95°F). The temperature in the room where the rack is located must not exceed 35°C (95°F).

⚠ **CAUTION:**
To reduce the risk of damage to the equipment when installing third-party options:

- Do not permit optional equipment to impede airflow around the server or to increase the internal rack temperature beyond the maximum allowable limits.

- Do not exceed the manufacturer's TMRA.

Power requirements

Installation of this equipment must comply with local and regional electrical regulations governing the installation of information technology equipment by licensed electricians. This equipment is designed to operate in installations covered by NFPA 70, 1999 Edition (National Electric Code) and NFPA-75, 1992 (code for Protection of Electronic Computer/Data Processing Equipment). For electrical power ratings on options, refer to the product rating label or the user documentation supplied with that option.

⚠ **WARNING:**
To reduce the risk of personal injury, fire, or damage to the equipment, do not overload the AC supply branch circuit that provides power to the rack. Consult the electrical authority having jurisdiction over wiring and installation requirements of your facility.

⚠ **CAUTION:**
Protect the server from power fluctuations and temporary interruptions with a regulating uninterruptible power supply. This device protects the hardware from damage caused by power surges and voltage spikes and keeps the system in operation during a power failure.

Electrical grounding requirements

The server must be grounded properly for proper operation and safety. In the United States, you must install the equipment in accordance with NFPA 70, 1999 Edition (National Electric Code), Article 250, as well as any local and regional building codes. In Canada, you must install the equipment in accordance with Canadian Standards Association, CSA C22.1, Canadian Electrical Code. In all other countries, you must install the equipment in accordance with any regional or national electrical wiring codes, such as the International Electrotechnical Commission (IEC) Code 364, parts 1 through 7. Furthermore, you must be sure that all power distribution devices used in the installation, such as branch wiring and receptacles, are listed or certified grounding-type devices.

Because of the high ground-leakage currents associated with multiple servers connected to the same power source, Hewlett Packard Enterprise recommends the use of a PDU that is either permanently wired to the building's branch circuit or includes a nondetachable cord that is wired to an industrial-style plug. NEMA locking-style plugs or those complying with IEC 60309 are considered suitable for this purpose. Using common power outlet strips for the server is not recommended.

Server warnings and cautions

⚠ **WARNING:**
This server is heavy. 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.

- Get help to lift and stabilize the product during installation or removal, especially when the product is not fastened to the rails. Hewlett Packard Enterprise recommends that a minimum of two people are required for all rack server installations. A third person may be required to help align the server if the server is installed higher than chest level.

- Use caution when installing the server in or removing the server from the rack; it is unstable when not fastened to the rails.

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

⚠ **WARNING:**
To reduce the risk of personal injury, electric shock, or damage to the equipment, remove the power cord to remove power from the server. The front panel Power On/Standby button does not completely shut off system power. Portions of the power supply and some internal circuitry remain active until AC power is removed.

CAUTION:

Protect the from power fluctuations and temporary interruptions with a regulating UPS. This device protects the hardware from damage caused by power surges and voltage spikes and keeps the in operation during a power failure.

CAUTION:

Do not operate the server for long periods with the access panel open or removed. Operating the server in this manner results in improper airflow and improper cooling that can lead to thermal damage.

Rack warnings

WARNING:

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

- The rack is bolted to the floor using the concrete anchor kit.

- The leveling feet extend to the floor.

- The full weight of the rack rests on the leveling feet.

- The racks are coupled together in multiple rack installations.

- Only one component is extended at a time. If more than one component is extended, a rack might become unstable.

WARNING:

To reduce the risk of personal injury or equipment damage when unloading a rack:

- At least two people are needed to safely unload the rack from the pallet. An empty 42U rack can weigh as much as 115.0 kg (253.0 lb), can stand more than 2.1 m (7.0 ft) tall, and might become unstable when being moved on its casters.

- Never stand in front of the rack when it is rolling down the ramp from the pallet. Always handle the rack from both sides.

WARNING:

To reduce the risk of personal injury or damage to the equipment, adequately stabilize the rack before extending a component outside the rack. Extend only one component at a time. A rack may become unstable if more than one component is extended.

WARNING:

When installing a system in a telco rack, be sure that the rack frame is adequately secured at the top and bottom to the building structure.

WARNING:

Both default fan and redundant fan Kit are rack mode supported. However increased cooling mode enablement is required at default fan in RBSU options.

Enabling increased cooling in RBSU

Procedure

1. From the **System Utilities** screen, select **System Configuration** > **BIOS/Platform Configuration (RBSU)** > **Advanced Options** > **Fan and Thermal Options** > **Thermal Configuration**.

2. Select **Increased Cooling**—Operates fans at a higher speed.

3. Save your setting.

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.

Prerequisites for the initial server setup

Procedure

☐ **Verify that the optimum environmental requirements are satisfied**.

☐ Confirm that the installation engineer understands how to integrate the server into the user network, in particular from an IP addressing perspective and from a domain perspective.

☐ Prepare Ethernet cables of an appropriate length for each of the LAN, WAN, and remote management (iLO) connections.

☐ Verify that there are sufficient ports available on the devices to which the server will be connected (for example, router, LAN switch).

Server box contents

Unpack the server shipping carton and locate the materials and documentation necessary for installing the server.

The server shipping box contains

- Server (Tower or Rack model)

    The server model will depend on the configuration ordered by the customer

- Power cord

- Hardware documentation

Setting up the server in tower mode

Procedure

1. Remove the server from the rack.

2. Turn the server to the upright position.

3. Place the server on a flat stable surface.

4. Connect peripheral devices to the server.

    ⚠ **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.

5. Connect the power cord to the rear of the server.

6. Connect the power cord to the AC power source.

Setting up the server in rack mode

Procedure

1. Install the server into the rack.

    For more information, see the installation instructions that ship with the Tower to Rack Conversion Kit.

2. Connect peripheral devices to the server.

    ⚠ **WARNING:**

    To reduce the risk of electric shock, fire, or damage to the equipment, do not plug telephone or telecommunications connectors into RJ-45 connectors.

3. Connect the power cord to the rear of the server.

4. Connect the power cord to the AC power source.

    ⚠ **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.

Configuring the server

When the server is powered on, the POST screen is displayed. Use the following options to configure the server:

• System utilities (**F9**)

    Use this option to configure UEFI, RBSU, or other boot settings.

• Intelligent Provisioning (**F10**)

    Use this option to configure drives, access Smart Storage Administrator, or begin installing or deploying an operating system.

• Boot order (**F11**)

    Use this option to select a boot device.

• Network boot (**F12**)

    Use this option to PXE boot the server from the network.

Installing or deploying an operating system

Before installing an operating system, observe the following:

- Be sure to read the HPE UEFI requirements for ProLiant servers on the **Hewlett Packard Enterprise website**. If UEFI requirements are not met, you might experience boot failures or other errors when installing the operating system.

- Update firmware before using the server for the first time, unless software or components require an older version.

- For the latest information on supported operating systems, see the **Hewlett Packard Enterprise website**.

- The server does not ship with OS media. All system software and firmware is preloaded on the server.

Registering the server

To experience quicker service and more efficient support, register the server at the My License Portal website:

https://myenterpriselicense.hpe.com/

Specifications

Environmental specifications

Specification	Value
Temperature range[1]	—
Operating	10°C to 35°C (41°F to 1045°F)
Nonoperating	-30°C to 60°C (-22°F to 140°F)
Relative humidity (noncondensing)	—
Operating	8% to 90% 28°C (82.4°F), maximum wet bulb temperature
Nonoperating	5% to 95% 38.7°C (101.7°F), maximum wet bulb temperature

[1] *All temperature ratings shown are for sea level. An altitude derating of 1.0°C per 305 m (1.8°F per 1000 ft) to 3050 m (10,000 ft) is applicable. No direct sunlight allowed. Maximum rate of change is 20°C per hour (36°F per hour). The upper limit and rate of change might be limited by the type and number of options installed.*

For certain approved hardware configurations, the supported system inlet temperature range is extended:

- 5°C to 10°C (41°F to 50°F) and 35°C to 40°C (95°F to 104°F) at sea level with an altitude derating of 1.0°C per every 175 m (1.8°F per every 574 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft)

- A redundant fan is required when the ambient temperature reaches 35°C to 40°C.

The approved hardware configurations for this system are listed on the Hewlett Packard Enterprise website (**http://www.hpe.com/servers/ASHRAE**).

Server specifications

Dimension (with feet/bezel)	Value
Height	44.00 cm (17.32 in)
Depth	48.05 cm (18.92 in)
Width	19.50 cm (7.68 in)
Weight (approximate)	
Minimum (one drive, power supply, and processor installed)	13.5 kg (29.82 lb)
Maximum (all drives, power supplies, and processors installed)	25.0 kg (55.00 lb)

Power supply specifications

Depending on the installed options and/or the regional location where the server was purchased, the server is configured with one of the following power supplies:

*   ATX 350W non-hot-plug power supply

*   ATX 550W non-hot-plug power supply

*   HPE 800W Flex Slot Platinum Hot-plug Low Halogen Power Supply

> △ **CAUTION:**
>
> Check the system and power supply input ratings before powering up the server.

> **NOTE:** ATX power supply will not support redundant fan option.

ATX 350W non-hot-plug power supply

Specification	Value
Input requirements	
Rated input voltage	100 VAC to 240 VAC
Rated input frequency	50 Hz to 60 Hz
Rated input current	4.5 A at 100 VAC
	1.9 A at 240 VAC
Maximum rated input power	437 W at 100 VAC
	416 W at 240 VAC
BTUs per hour	1491 at 100 VAC
	1419 at 240 VAC
Power supply output	
Rated steady-state power	350 W at 100VAC to 240VAC
Maximum peak power	385 W at 100VAC to 240VAC

ATX 550W non-hot-plug power supply

Specification	Value
Input requirements	
Rated input voltage	100 VAC to 240 VAC
Rated input frequency	50 Hz to 60 Hz

Table Continued

Specification	Value
Rated input current	6.4 A at 100 VAC
	2.62 A at 240 VAC
Maximum rated input power	634 W at 100 VAC
	613 W at 240 VAC
BTUs per hour	1876 at 100 VAC
	1876 at 240 VAC
Power supply output	
Rated steady-state power	550 W at 100VAC to 240VAC
Maximum peak power	575 W at 100VAC to 240VAC

HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply

Specification	Value
Input requirements	
Rated input voltage	100 VAC to 127 VAC
	100 VAC to 240 VAC
	240 VDC for China only
Rated input frequency	50 Hz to 60 Hz
	Not applicable to 240 VDC
Rated input current	9.4 A at 100 VAC
	4.5 A at 200 VAC
	3.8 A at 240 VDC for China only
Maximum rated input power	899 W at 100 VAC
	867 W at 200 VAC
	864 W at 240 VDC for China only
BTUs per hour	3,067 at 100 VAC
	2,958 at 200 VAC
	2,949 at 240 VAC for China only
Power supply output	

Table Continued

Specification	Value
Rated steady-state power	800 W at 100 VAC to 127 VAC input
	800 W at 100 VAC to 240 VAC input
	800 W at 240 VDC input for China only
Maximum peak power	800 W at 100 VAC to 127 VAC input
	800 W at 100 VAC to 240 VAC input
	800 W at 240 VDC input for China only

ⒺⒶⒸ information for HPE ProLiant ML110 Gen10 Server

- Product website: **http://www.hpe.com/servers/ml110-gen10**

- Intelligent Provisioning update: **http://www.hpe.com/info/intelligentprovisioning/docs**

- Service Pack for ProLiant (SPP) update: **http://www.hpe.com/servers/spp/download**

Local representative information

EAC

Manufacturer information:

Hewlett Packard Enterprise Company, 3000 Hanover Street, Palo Alto, CA 94304 U.S.

Local representative information Russian

Russia:

ООО «Хьюлетт Паккард Энтерпрайз», Российская Федерация, 125171, г. Москва, Ленинградское шоссе, 16А, стр.3, Телефон/факс: +7 495 797 35 00

Belarus:

ИООО «Хьюлетт-Паккард Бел», Республика Беларусь, 220030, г. Минск, ул. Интернациональная, 36-1, Телефон/факс: +375 17 392 28 20

Kazakhstan:

ТОО «Хьюлетт-Паккард (К)», Республика Казахстан, 050040, г. Алматы, Бостандыкский район, проспект Аль-Фараби, 77/7, Телефон/факс: + 7 727 355 35 50

Local representative information Kazakh

Russia:

ЖШС "Хьюлетт Паккард Энтерпрайз" Ресей Федерациясы, 125171, Мәскеу, Ленинград тас жолы, 16А блок 3, Телефон/факс: +7 495 797 35 00

Belarus:

«HEWLETT-PACKARD Bel» ЖШС, Беларусь Республикасы, 220030, Минск қ., Интернациональная көшесі, 36/1, Телефон/факс: +375 17 392 28 20

Kazakhstan:

ЖШС «Хьюлетт-Паккард (К)», Қазақстан Республикасы, 050040, Алматы к., Бостандык ауданы, Әл-Фараби даңғылы, 77/7, Телефон/факс: +7 727 355 35 50

Manufacturing date

The manufacturing date is defined by the serial number.

CCSYWWZZZZ (serial number format for this product)

Valid date formats include:

- YWW, where Y indicates the year counting from within each new decade, with 2000 as the starting point; for example, 238: 2 for 2002 and 38 for the week of September 9. In addition, 2010 is indicated by 0, 2011 by 1, 2012 by 2, 2013 by 3, and so forth.

- YYWW, where YY indicates the year, using a base year of 2000; for example, 0238: 02 for 2002 and 38 for the week of September 9.

Support and other resources

Accessing Hewlett Packard Enterprise Support

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

  http://www.hpe.com/assistance

- To access documentation and support services, go to the Hewlett Packard Enterprise Support Center website:

  http://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
    www.hpe.com/support/hpesc
  Hewlett Packard Enterprise Support Center: Software downloads
    www.hpe.com/support/downloads
  Software Depot
    www.hpe.com/support/softwaredepot

- To subscribe to eNewsletters and alerts:

  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:

  www.hpe.com/support/AccessToSupportMaterials

Customer self repair

Hewlett Packard Enterprise customer self repair (CSR) programs allow you to repair your product. If a CSR part needs to be replaced, it will be shipped directly to you so that you can install it at your convenience. Some parts do not qualify for CSR. Your Hewlett Packard Enterprise authorized service provider will determine whether a repair can be accomplished by CSR.

For more information about CSR, contact your local service provider or go to the CSR website:

http://www.hpe.com/support/selfrepair

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 will initiate a fast and accurate resolution based on your product's service level. 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.

Remote support and Proactive Care information

    HPE Get Connected

        www.hpe.com/services/getconnected

    HPE Proactive Care services

        www.hpe.com/services/proactivecare

    HPE Proactive Care service: Supported products list

        www.hpe.com/services/proactivecaresupportedproducts

    HPE Proactive Care advanced service: Supported products list

        www.hpe.com/services/proactivecareadvancedsupportedproducts

Proactive Care customer information

    Proactive Care central

        www.hpe.com/services/proactivecarecentral

    Proactive Care service activation

        www.hpe.com/services/proactivecarecentralgetstarted

Warranty information

To view the warranty for your product or to view the *Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products* reference document, go to the Enterprise Safety and Compliance website:

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

Additional warranty information

    HPE ProLiant and x86 Servers and Options

        www.hpe.com/support/ProLiantServers-Warranties

HPE Enterprise Servers

www.hpe.com/support/EnterpriseServers-Warranties

HPE Storage Products

www.hpe.com/support/Storage-Warranties

HPE Networking Products

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:

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:

www.hpe.com/info/reach

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

www.hpe.com/info/ecodata

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

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, send any errors, suggestions, or comments to Documentation Feedback (**docsfeedback@hpe.com**). When submitting your feedback, include the document title, part number, edition, and publication date located on the front cover of the document. For online help content, include the product name, product version, help edition, and publication date located on the legal notices page.