# HPE ProLiant XL2x260w Gen10 Server - Product Information Reference

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## Notices

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## Revision history

| Part number | Publication date | Edition | Summary of changes |
|---|---|---|---|

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## Summary

## Product description

The HPE ProLiant XL2x260w Gen10 Server delivers the performance required by HPC application workloads, while taking advantage of the modular flexibility and rack-scale efficiency of HPE Apollo w6000 Chassis. The server is built using Intel Xeon Phi seriesprocessors with on-board memory, high-bandwidth networking fabric and HPE DDR 4 SmartMemory.The modular HPE Apollo w6000 Chassis accommodates up to twenty four single slot HPE ProLiant XL2x260w Gen10 Server trays to address various HPC workload needs.

Rack scale power efficiency is fueled by an external power shelf, with optional HPE Apollo Platform Manager (APM) for rack, chassis, server and component level management

## Standard Models

## New RoHS compliant part numbers

To find the latest RoHS compliance information, please use the HPE PartSurfer ( **Click here to visit HPE PartSurfer website** ) and click on one of the linked model numbers. When locating RoHS information in PartSurfer, user can use the Option part number for the components, the sales order number for a system that the component is used in, or the Spare part number for a specific part. user can find the sales order numbers and Option part numbers in the Product QuickSpecs.

## Standard models

| Description | Model Number |
| --- | --- |
| HPE ProLiant XL2x260w Single-width 1P 1.2m 2x Server Compute Tray | 851659-B21 |
| | **Click here to obtain parts list for this model** . |

## Product features

| Feature | Description |
|---|---|
| Processor | Intel Xeon Phi x200 Series |

| Model | TDP Frequency | Cores | Mesh Frequency | Power | DDR4 MT/s | MCDRAM |
|---|---|---|---|---|---|---|
| 7290 | 1.5 GHz | 72 | 1.7 GHz | 245 W | 2400 | 16GB |
| | 1.4 GHz | 68 | 1.7 GHz | 215 W | 2400 | 16GB |
| | 1.3 GHz | 64 | 1.7 GHz | 215 W | 2400 | 16GB |
| | 1.3 GHz | 64 | 1.6 GHz | 215 W | 2133 | 16GB |
| | 1.5 GHz | 72 | 1.7 GHz | 260 W | 2400 | 16GB |
| | 1.4 GHz | 68 | 1.7 GHz | 230 W | 2400 | 16GB |
| | 1.3 GHz | 64 | 1.7 GHz | 230 W | 2400 | 16GB |
| | 1.3 GHz | 64 | 1.6 GHz | 230 W | 2133 | 16GB |

| Feature | Description |
|---|---|
| Chipset | Intel Wellsburg C612 chipset<br><br>**Click here to view for more information regarding Intel chipsets .** |
| On system management processor | HPE iLO (Firmware: HPE iLO 4 NAND via FS-DC – Accessed through shared NIC or aggregated iLO enclosure port)<br><br>Independent iLO Reset Switch via UID<br><br>**Click here to access iLo QuickSpecs for more information .** |
| Memory protection | Advanced ECC (Multi-bit error protection) |
| Memory [1] | |

| Type | DIMM Slots available | Maximum DIMMs (Per node; 2 nodes per tray) |
|---|---|---|
| HPE SmartMemory<br><br>DDR4 Load Reduced (LRDIMM), or Registered (RDIMM) | 6 DIMM Slots available | 384GB (6 x 64GB maximum capacity per DIMM slot) |

**Click here to access HPE SmartMemory QuickSpecs for more information .**

| Feature | Description |
|---|---|
| HPE Server ROM | HPE ROM (Read Only Memory) is now digitally signed using the HPE Corporate Signing Service |
| | This signature is verified before the flash process starts, reducing accidental programming and preventing malicious efforts to corrupt system ROM |
| | The HPE ProLiant ROM is used to configure the following: |
| | • Processor and chipset status registers |
| | • System memory, memory map, and memory initialization |
| | • System hardware configuration (Integrated PCI devices and optional PCIe cards) |
| | • Customer-specific BIOS configuration (Using the HPE ROM-Based Setup Utility (RBSU) |
| | **Click here to refer the HPE ROM-Based Setup Utility User Guide** . |
| HPE Server Unified Extensible Firmware Interface(UEFI) or Legacy mode [2] | The HPE ProLiant XL2x260w BIOS complies with v2.4 of the UEFI Specification and is a UEFI Class 3 implementation which supports UEFI boot mode only |
| | **Click here to access UEFI Information Library for more information on HPE ProLiant System BIOS and UEFI.** |
| Internal storage devices | M.2 support (2x M.2 SSD device per node) |

Interfaces per node

| KVM | MicroSD | USB Ports | HPE iLO Remote Management Network Port | Health LED | Power | UID |
|---|---|---|---|---|---|---|
| HPE 36pin Serial/USB/VGA Dongle Cord Kit 676277-B21 | 1 | 2 (External via SUV) | Aggregated via HPE Apollo w6000 Chassis | 1 | 1 | 1 |

| Feature | Description |
|---|---|
| Graphics | • Integrated Matrox G200 video standard |
| |    ◦ 1280 x 1024 (32 b/p) |
| |    ◦ 1920 x 1200 (16 b/p) |
| | • HPE iLO 4 On System Management Memory |
| |    ◦ 16 MB Flash |
| |    ◦ 256 MB DDR 3 with ECC (112 MB after ECC and video) The ProLiant XL2x260w Server is a single-slot tray for the HPE Apollo w6 |
| Form factor | The ProLiant XL2x260w Server is a single-slot tray for the HPE Apollo w6000 Chassis |

| Feature | Description |
|---|---|
| Embedded management | <ul><li>HPE Integrated Lights Out</li><li>UEFI</li><li>HPE RESTful API</li><li>Intelligent Provisioning</li></ul> |
| Industry standard compliance | <ul><li>ACPI 6.0b Compliant</li><li>PCIe 3.0 Compliant</li><li>WOL Support</li><li>PXE Support</li><li>USB 1.1 and 2.0</li><li>Compliant SMBIOS 3.0.0</li></ul> |
| Security | <ul><li>Power-on password</li><li>Serial interface control</li><li>Administrator's password</li><li>iLO 4 (Integrated Lights-Out 4) has 12 customizable user accounts and SSL encryption</li><li>iLO 4 can be disabled via a Global Setting</li><li>iLO Advanced supports directory services integration</li><li>TPM (Trusted Platform Module) 1.2 or 2.0 option</li><li>UEFI Secure Boot</li></ul> |

📋 NOTE:

1. HPE memory from previous generation servers (DDR3) are not compatible with the HPE ProLiant XL2x260w Gen10 Server. To realize the performance memory capabilities listed in this document, HPE SmartMemory is required.
2. For UEFI boot operation, boot environment and OS image installations should be configured properly to support UEFI

# Specifications

# Physical specifications

| Specifications | Description |
| --- | --- |
| Server dimensions (L x W x D) | 4.19 x 19.41 x 79.93 cm (1.65 x 7.64 x 31.47 in) |
| Shipping dimensions (L x W x D) | 22.86 x 36.83 x 99.06 cm (9 x 14.5 x 39 in) |
| Weight (Approximate) | Maximum: 7.26 kg (16.0 lb) |

## Environmental specifications

| Specifications | Description |
| --- | --- |
| System inlet temperature | **Standard operating support:** |
| | 10° to 35°C (50° to 95°F) |
| | At sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 20°C/hr (36°F/hr). The upper limit and rate of change may be limited by the type and number of options installed |
| | System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F) |
| | **Extended ambient operating support:** |
| | 10° to 5°C (50° to 41°F) and 35° to 40°C (95° to 104°F) |
| | For approved hardware configurations, the supported system inlet range is extended to be: 10° to 5°C (50° to 41°F) and 35° to 40°C (95° 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) |
| | For approved hardware configurations, the supported system inlet range is extended to be: 40° to 45°C (104° to 113°F) at sea level with an altitude derating of 1.0°C per every 125 m (1.8°F per every 410 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft) |
| | **Non-operating:** |
| | -30° to 60°C (-22° to 140°F) |
| | System performance may be reduced if operating in the extended ambient operating range or with a fan fault |
| | Maximum rate of change is 20°C/hr (36°F/hr) |
| Relative humidity (Non-condensing) | **Operating:** |
| | 10 to 90% |
| | Relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing |
| | **Non-operating:** |
| | 5 to 95% |
| | Relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing |

| Specifications | Description |
|---|---|
| Altitude operating | 3050 m (10,000 ft) |
| | This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min) |
| Acoustic noise | Listed are the declared A-Weighted sound power levels (LWAd) and measured average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109). The listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels |

| Configuration SKU | Entry | Base | Performance |
|---|---|---|---|
| **Idle** | | | |
| LWAd | 6.9B | 6.9B | 6.9B |
| LpAm | 53 dBA | 53 dBA | 53 dBA |
| **Operating** | | | |
| LWAd | 8.1B | 8.9B | 9.0B |
| LpAm | 64 dBA | 69 dBA | 73 dBA |

📋 **NOTE:**

Operating temperature has an altitude derating of 1.8°F (1°C) per 1,000 ft (304.8 m). No direct sunlight. Upper operating limit is 10,000 ft (3,048 m) or 70 Kpa/10.1 psia. Upper non-operating limit is 30,000 ft (9,144 m) or 30.3 KPa/4.4 psia.Storage maximum humidity of 95% is based on a maximum temperature of 113°F (45°C). Altitude maximum for storage is 70 KPa.

# Spare Parts

## New model specific parts lists

IMPORTANT: To obtain current part number information for a specific product model, use the Standard Models page for this product family.

- The product Standard Models page now links the model SKU numbers to the spare parts list for each model found on the HPE PartSurfer website. (To report missing or incorrect parts information in PartSurfer, please use the "Contact us" and "Missing or incorrect data" links within the PartSurfer website utility).

  To look up RoHS-compliant information in PartSurfer, use the component?s option part number or the sales order number for a system in which the component is used (Available in the QuickSpecs or Standard Models page).

# System components
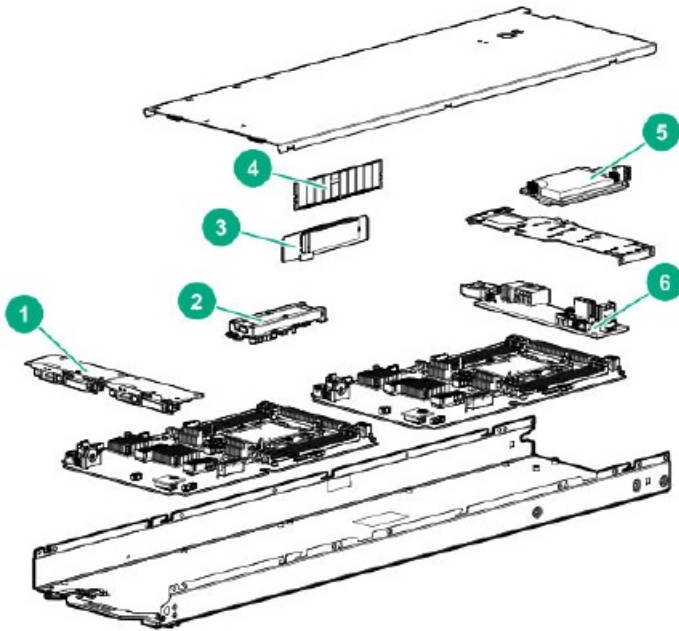


| Item | Description | Spare Part Number |
|------|-------------|-------------------|
| 1 | **Front panel LED/SUV board spare parts** | |
| | Front panel LED/SUV board | 871897-001 |
| 2 | **HVDC module spare parts** | |
| | HVDC Module with cables | 869327-001 |
| | HVDC board | 871899-001 |
| 3 | **M.2 enablement spare parts** | |
| | M.2 Interface enablement board | 868124-001 |
| | 120GB SATA Solid State Drive (SSD) - 6 Gb/s interface, Read Intensive (RI), M.2 form factor (2280), Value Endurance (VE), supports power loss prevention | 831995-001 |
| 4 | **DIMM Spare parts** | |

| Item | Description | Spare Part Number |
|------|-------------|-------------------|
|  | HPE SmartMemory 8GB, 2400 MHz, PC4-2400T-R, DDR4, single-rank x4, 1.20 V, CAS-17-17-17, Registered Dual In-Line Memory Module (RDIMM) | 819410-001 |
|  | HPE SmartMemory 16GB, 2400MHz, PC4-2400T-R, DDR4, single-rank x 8, 1.20 V, CAS-17-17-17, Registered Dual In-Line Memory Module (RDIMM) | 819411-001 |
|  | HPE SmartMemory 16GB, 2400 MHz, PC4-2400T-R, DDR4, dual-rank x 4, 1.20 V, CAS-17-17-17, Registered Dual In-Line Memory Module (RDIMM) | 846740-001 |
|  | HPE SmartMemory 32 GB, 2400 MHz, PC4-2400T-R, DDR4, dual-rank x 4, 1.20 V, CAS-17-17-17, Registered Dual In-Line Memory Module (RDIMM) | 819412-001 |
|  | 64GB PC4-2400T-L load Reduced Dynamic Random Access Memory (LRDIM) Synchronous Dynamic Random Access Memory (SDRAM), Dual Data Rate (DDR4) mode, Dual In-line Memory Module (DIMM),8G x 72 | 819413-001 |
|  | HPE SmartMemory 32 GB, 2400 MHz, PC4-2400T-L, DDR4, dual-rank x4, 1.20 V, CAS-17-17-17, Load Reduced Dual In-line Memory Module (LRDIMM) | 819414-001 |
| 5 | **Mezzanine card spare part** | |

| Item | Description | Spare Part Number |
|------|-------------|-------------------|
| | InfiniBand (IB), Enhanced Data Rate(EDR), 100GB 2-port adapter | 844381-001 |
| 6 | **Power management board spare parts** | |
| | Rear power management I/O interface board | 871898-001 |
| 7 | **Processor spare parts** | |
| | Intel Xeon Phi 7210, 64-cores, processor - 1.30 GHz (Knights Landing, 32MB Level-2 cache, 215 W Thermal Design Power (TDP), socket SVLCLGA3647 | 867568-001 |
| | Intel Xeon Phi 7210F, 64-cores, processor - 1.30 GHz (Knights Landing, 32MB Level-2 cache, 16GB MCDRAM memory, 230 W Thermal Design Power (TDP), socket SVLCLGA3647) | 867570-001 |
| | Intel Xeon Phi 7230, 64 - cores, processor - 1.30 GHz (Knights Landing, 32MB Level-2 cache, 215 W Thermal Design Power (TDP), socket SVLCLGA3647 | 867565-001 |
| | Intel Xeon Phi 7230F, 64 - cores, processor - 1.30 GHz (Knights Landing, 32MB Level-2 cache, 16GB MCDRAM memory, 215 W Thermal Design Power (TDP), socket SVLCLGA3647) | 867567-001 |

| Item | Description | Spare Part Number |
|------|-------------|-------------------|
| | Intel Xeon Phi 7250, 68 - cores, processor - 1.40 GHz (Knights Landing, 32MB Level-2 cache, 215 W Thermal Design Power (TDP), socket SVLCLGA3647 | 867563-001 |
| | Intel Xeon Phi 7250F, 68 - cores, processor - 1.40 GHz (Knights Landing, 32MB Level-2 cache, 16GB MCDRAM memory, 215 watt Thermal Design Power (TDP), socket SVLCLGA3647 | 867564-001 |
| | Intel Xeon Phi 7290F 72 - cores, processor - 1.50 GHz (Knights Landing, 36MB Level-2 cache, 16GB MCDRAM memory, 260 watt Thermal Design Power (TDP), socket SVLCLGA3647 | 867562-001 |
| | Intel Xeon Phi 7290, 72 - cores, processor - 1.50 GHz (Knights Landing, 36MB Level-2 cache, 245 W Thermal Design Power (TDP), socket SVLCLGA3647) | 867561-001 |
| | **Cable spare parts** | |
| | Whisper 4 x 6 to 2 x Whisper 6 x 3Y high-speed fabric cable interface | 868139-001 |
| | 100Gb Dual Xeon Phi dual port OP | 870854-001 |
| | 100Gb, 40 Ghz, LHSS 2xmezz, single port cable | 874693-001 |

| Item | Description | Spare Part Number |
|---|---|---|
| | 100Gb, 20 Ghz LHSS 2mz SL port cable | 874694-001 |
| | 100Gb, 40 Ghz, LHSS 2xmezz, single port cable | 874691-001 |
| | Management sideband front and rear cable | 871901-001 |
| | 10GB Network interface card front cable | 871902-001 |
| | 10GB Network interface card rear cable | 871903-001 |
| | Front cable assembly LED/SUV | 871904-001 |
| | LED/SUV Rear cable | 871905-001 |
| | HVDC Module power cable | 871906-001 |
| | 12 V dc Power to rear power | 871907-001 |
| **System battery spare parts** | | |
| | Battery for Real-Time Clock (RTC) - 3.0 V, 220 mAh, lithium coin cell, 20 mm diameter, 3.2 mm height (CR2032) | 234556-001 |

📝 **NOTE:**

Item 7 is not shown in the image

All processors in this HPE ProLiant server must have the same cache size, speed, number of cores, and rated maximum power consumption.

# Option Parts

# New model specific parts lists

IMPORTANT: To obtain current part number information for a specific product model, use the Standard Models page for this product family.

- The product Standard Models page now links the model SKU numbers to the spare parts list for each model found on the HPE PartSurfer website. (To report missing or incorrect parts information in PartSurfer, please use the "Contact us" and "Missing or incorrect data" links within the PartSurfer web site utility).

  To look up RoHS-compliant information in PartSurfer, use the component?s option part number or the sales order number for a system in which the component is used (Available in the QuickSpecs or Standard Models page).

## HPE Processors

| Description | Part Number |
|---|---|
| HPE XL2x260w Intel Xeon Phi x200 7290 (1.5 GHz/72-core/245 W) FIO processor kit | 878223-L21 |
| HPE XL2x260w Intel Xeon Phi x200 7250 (1.4 GHz/68-core/215 W) FIO processor kit | 878224-L21 |
| HPE XL2x260w Intel Xeon Phi x200 7210 (1.3 GHz/64-core/215 W) FIO processor kit | 878225-L21 |
| HPE XL2x260w Intel Xeon Phi x200 7230 (1.3 GHz/64-core/215 W) FIO processor kit | 878226-L21 |
| HPE XL2x260w Intel Xeon Phi x200 7210F (1.3 GHz/64-core/230 W)FIO processor kit | 878227-L21 |
| HPE XL2x260w Intel Xeon Phi x200 7230F (1.3 GHz/64-core/230 W)FIO processor kit | 878228-L21 |
| HPE XL2x260w Intel Xeon Phi x200 7250F (1.4 GHz/68-core/230 W)FIO processor kit | 878229-L21 |
| HPE XL2x260w Intel Xeon Phi x200 7290F (1.5 GHz/72-core/260 W)FIO processor kit | 878230-L21 |

📋 NOTE:

- 'F' in back of the processor model number indicates on-board fabric
- The processor model as well as the memory configuration determines the maximum speed memory can operate.
- For the maximum supported memory speeds for each processor listed above, please reference the 'Memory Speed by Processor Model' table in the Memory section of the QuickSpecs.
- DDR4 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

## HPE Memory

| Description | Part Number |
|---|---|
| **Registered DIMMs (RDIMMs) – DDR4-2400** | |
| HP 8GB (1 x 8GB) single rank x8 DDR4-2400 CAS-17-17-17 registered memory kit | 805347-B21 |
| HP 16GB (1 x 16GB) single rank x4 DDR4-2400 CAS-17-17-17 registered memory kit | 805349-B21 |
| HPE 16GB (1 x 16GB) dual rank x4 DDR4-2400 CAS-17-17-17 registered memory kit | 836220-B21 |
| HP 32GB (1 x 32GB) dual rank x4 DDR4-2400 CAS-17-17-17 registered memory kit | 805351-B21 |
| **Load Reduced DIMMs (LRDIMMs) –DDR4-2400** | |
| HPE 32GB (1 x 32GB) dual rank x4 DDR4-2400 CAS-17-17-17 load reduced memory kit | 805353-B21 |
| HPE 64GB (1 x 64GB) quad rank x4 DDR4-2400 CAS-17-17-17 load reduced memory kit | 805358-B21 |

📋 **NOTE:**

- A maximum of 6 DIMMs are supported per XL2x260w server node
- LRDIMM and RDIMM are distinct memory technologies and cannot be mixed within a server.
- HPE memory from previous generation servers (DDR3) is not compatible with this server. HPE SmartMemory is required to realize the memory performance improvements and enhanced functionality listed.
- Depending on the memory configuration and processor model, the memory speed may run at 2400 Mhz, 2133 MHz.

**Click here to access HPE SmartMemory QuickSpecs for more information** .

**Click here to access the online memory configuration tool** .

# HPE Networking

| Description | Part Number |
|---|---|
| **InfiniBand options** | |
| HPE Apollo InfiniBand EDR 100Gb 2-port 840z mezzanine FIO adapter | 843400-B21 |
| **OmniPath options** | |
| HPE 100Gb 1-port 860z Intel Omni-Path architecture FIO adapter | 851226-B21 |
| HPE XL2x260w 2x Mezz LH single port cable | 876380-B21 |
| **Fabric cable options** | |
| HPE X200 CPU Omni-Path Architecture (OPA), fabric dual cable FIO kit | 869077-B21 |

## HPE Drives

| Description | Part Number |
|---|---|
| **Read Intensive – SATA M.2 Solid State Drives** | |
| HPE 150GB SATA 6G read intensive M.2 2280 3 year warranty digitally signed firmware SSD | 875317-B21 |
| HPE 480GB SATA 6G read intensive M.2 2280 3 year warranty digitally signed firmware SSD | 875319-B21 |
| HPE 480GB SATA 6G read intensive M.2 2280 3 year warranty digitally signed firmware SSD | 875498-B21 |
| HPE 960GB SATA 6G read intensive M.2 2280 3 year warranty digitally signed firmware SSD | 875500-B21 |
| HPE 1.92GB SATA 6G read intensive M.2 2280 3 year warranty digitally signed firmware SSD | 875496-B21 |
| **Mixed Use – SATA M.2 Solid State Drives** | |
| HPE 240GB SATA 6G mixed Use M.2 2280 3 year warranty digitally signed firmware SSD | 875488-B21 |
| HPE 480GB SATA 6G mixed Use M.2 2280 3 year warranty digitally signed firmware SSD | 875490-B21 |
| HPE 960GB SATA 6G mixed Use M.2 2280 3 year warranty digitally signed firmware SSD | 875492-B21 |
| HPE 1.92TB SATA 6G mixed Use M.2 2280 3 year warranty digitally signed firmware SSD | 875494-B21 |

## HPE iLO Advanced

| Description | Part Number |
|---|---|
| HPE iLO Advanced including 1 year 24x7 technical support and updates E-LTU | E6U59ABE |
| HPE iLO Advanced including 3 year 24x7 technical support and updates E-LTU | E6U64ABE |
| HPE iLO Advanced including 3 year 24x7 technical support and updates 1-server LTU | BD505A |
| HPE iLO Advanced including 1 year 24x7 technical support and updates 1-server LTU | 512485-B21 |

## Security hardware

| Description | Part Number |
|---|---|
| HPE Trusted Platform Module 2.0 Kit | 745823-B21 |

## OS Compatibility

| Feature | Description |
|---|---|
| Operating systems and virtualization software support for ProLiant Servers | <ul><li>Red Hat Enterprise Linux (RHEL)<ul><li>RHEL 7.3 / CentOS</li><li>RHEL 7.4 / CentOS</li></ul></li><li>SUSE Linux Enterprise Server (SLES)<ul><li>SLES 12 SP3</li></ul></li></ul> |
| HPE Insight management software | HPE Service Pack for ProLiant (SPP) |

> **NOTE:**
> - Only 64-bit versions of these operating systems are supported
> - For more information, refer the HPE Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for users server including how to purchase from Hewlett Packard Enterprise
>
> **Click here to view the Server Operating Systems and Virtualization Software page** .

## Software Compatibility

- HPE Smart Update
- HPE Systems Insight Manager (HPE SIM)
- Scripting Tool Kit and Windows PowerShell
- HPE RESTful Interface Tool
- HPE iLO Mobile Application
- HPE Insight Online