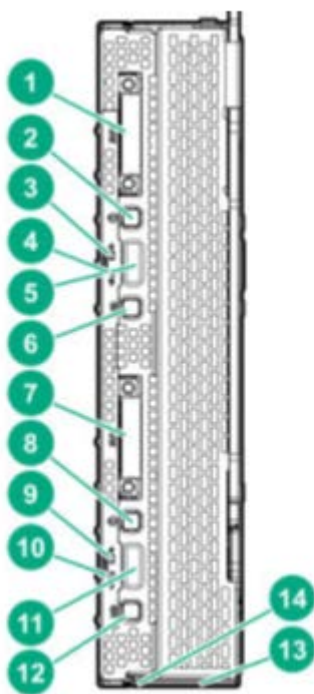# QuickSpecs

Overview

HPE ProLiant XL2x260w Server

The HPE ProLiant XL2x260w 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 series processors 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 server trays to address various HPC workload needs.
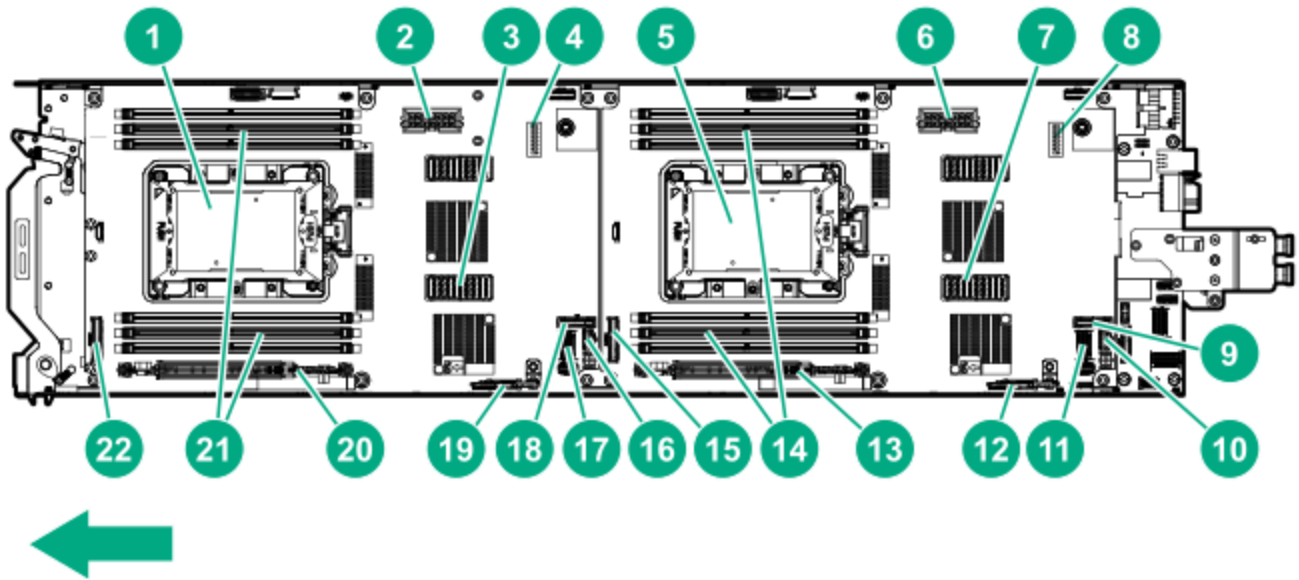Rack scale power efficiency is fueled by an external power shelf, with optional HPE Apollo Platform Manager (APM) for rack, chassis, server and component level management.

Front panel components

Item	Item Description
1.	SUV connector (Node 1)
2.	Power On/System power LED (Node 1)
3.	Health LED (Node 1)
4.	NIC LED (Node 1)
5.	External USB iLO service port (169.254.1.2) (Node 1)
6.	UID LED/button (Node 1)
7.	SUV connector (Node 2)
8.	Power On/System power LED (Node 2)
9.	Health LED (Node 2)
10.	NIC LED (Node 2)
11.	External USB iLO service port (169.254.1.2) (Node 2)
12.	UID LED/button (Node 2)
13.	Outer serial label pull tab (Node 2)
14.	Inner serial label pull tab (Node 1)

Overview

Front panel components

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8.	Power On/System power LED (Node 2)
9.	Health LED (Node 2)
10.	NIC LED (Node 2)
11.	External USB iLO service port (169.254.1.2) (Node 2)
12.	UID LED/button (Node 2)
13.	Outer serial label pull tab (Node 2)
14.	Inner serial label pull tab (Node 1)
15.	Front panel LED board connector (Node 1)
16.	Management signal connector (Node 2)
17.	10G NIC connector (Node 2)
18.	System board battery (Node 2)
19.	NAND flash with MicroSD (Node 2)
20.	M.2 enablement board (Node 2)
21.	DIMM slots (Node 2)
22..	Front panel LED board connector (Node 2)

Standard Features

| Processor | Intel Xeon Phi x200 Series |

Model	TDP Frequency	Cores	Mesh Frequency	Power	DDR4 MT/s	MCDRAM
7290	1.5GHz	72	1.7GHz	245W	2400	16GB
7250	1.4GHz	68	1.7GHz	215W	2400	16GB
7230	1.3GHz	64	1.7GHz	215W	2400	16GB
7210	1.3GHz	64	1.6GHz	215W	2133	16GB
7290F	1.5GHz	72	1.7GHz	260W	2400	16GB
7250F	1.4GHz	68	1.7GHz	230W	2400	16GB
7230F	1.3GHz	64	1.7GHz	230W	2400	16GB
7210F	1.3GHz	64	1.6GHz	230W	2133	16GB

Chipset

Intel Wellsburg C612 chipset
NOTE: For more information regarding Intel® chipsets, please see the following URL:
http://www.intel.com/products/server/chipsets/

On System Management Processor

HPE iLO (Firmware: HPE iLO 4 NAND via FS-DC – accessed through shared NIC or aggregated iLO enclosure port)
Independent iLO Reset Switch via UID
NOTE: Read and learn more in the **iLO QuickSpecs.**

Memory Protection

Advanced ECC (multi-bit error protection)

Memory

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

NOTE: HPE memory from previous generation servers (DDR3) are not compatible with the HPE ProLiant XL2x260w Server.
NOTE: To realize the performance memory capabilities listed in this document, HPE SmartMemory is required. For additional information, please see the HPE SmartMemory QuickSpecs at:
https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04111535
NOTE: LRDIMM and RDIMM are distinct memory technologies and cannot be mixed within a server.
NOTE: Depending on the memory configuration and processor model, the memory speed may run at 2400Mhz or 2133Mhz. Please see Memory Population Table or the Online Memory Configuration Tool at: **https://h22195.www2.hpe.com/DDR4memoryconfig/Home/LEGAL**

Networking

Embedded HPE Ethernet 10Gb 2-port 563i Adapter (per node)
InfiniBand Options
HPE Apollo IB EDR 100Gb 2p 840z FIO Adptr
Omni-Path Options
HPE 100Gb 1p OPA 860z FIO Adptr

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.
HPE ROM provides for essential initialization and validation of hardware components before control is passed to the customer-installed operating system. The ROM also provides the capability of booting from various fixed media (HDD, CD-ROM) and removable media (USB), to continue operation to the operating system.
HPE ROM performs very early configuration of the video controller, to allow monitoring of initialization

Standard Features

progress via an attached monitor. If configuration or hardware errors are discovered during this early phase of hardware initialization, suitable messages are now displayed on the connected monitor. Additionally, these configuration or hardware errors are logged to the Integrated Management Log (IML) to assist in diagnosis.

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).

NOTE: For further information, please refer to the HPE RBSU (ROM based setup utility) user guide: **http://www.hpe.com/support/rbsu**

HPE Server Unified Extensible Firmware Interface (UEFI) or Legacy Mode

The HPE ProLiant XL2x260w BIOS complies with v2.4 of the UEFI Specification (available at http://www.uefi.org/specifications) and is a UEFI Class 3 implementation which supports UEFI boot mode only.

NOTE: For UEFI boot operation, boot environment and OS image installations should be configured properly to support UEFI.
NOTE: For more information on Hewlett Packard Enterprise's ProLiant System BIOS and UEFI, see the UEFI Information Library: **http://www.hpe.com/servers/uefi.**

To modify the server configuration ROM default settings, press F9 in the HPE ProLiant POST screen to enter the UEFI System Utilities screen. By default, the System Utilities menus are in the English language.

UEFI enables numerous new capabilities, including both industry standard functionality and features specific to HPE ProLiant servers. Some of the features that UEFI enables and that the HPE ProLiant XL2x260w can support include:

- Secure Boot - A feature in which the system firmware, option card firmware, operating systems, and software collaborate to greatly enhance platform security.
- Operating system specific functionality - Microsoft Windows 2012 supports several additional features when in UEFI mode.
- Support for > 2.2 TB (using GPT) boot drives - Such drives could previously only be used for boot drives when using RAID solutions such as HPE Smart Array.
- UEFI Shell - Provides a pre-boot environment for running scripts and tools. The UEFI Shell provides both standard capabilities as well as numerous enhancements.
- PXE boot support for IPv6 networks.
- PXE Multicast Boot allowing for faster PXE deployments for large numbers of servers.
- Boot support for option cards that only support a UEFI option ROM

Internal Storage Devices

M.2 support (2x M.2 SSD device per node)

Interfaces per node

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

Standard Features

Health LED	1	
Power	1	
UID	1	

Industry Standard Compliance	ACPI 6.0b Compliant
	PCIe 3.0 Compliant
	WOL Support
	PXE Support
	USB 1.1 and 2.0 Compliant
	SMBIOS 3.0.0
Power Specifications	To review typical system power ratings use the HPE Power Advisor which is available via the online tool located at URL: **http://www.hpe.com/info/poweradvisor/online** or **http://www.hpe.com/info/poweradvisor.** **NOTE:** Power Specification and Technical Content for supported power supplies can be found at: **https://www.hpe.com/info/qs**
Operating Systems and Virtualization Software Support for ProLiant Servers	Red Hat Enterprise Linux (RHEL) • RHEL 7.3 / CentOS • RHEL 7.4 / CentOS SUSE Linux Enterprise Server (SLES) • SLES 12 SP3 **NOTE:** Only 64-bit versions of these operating systems are supported. **NOTE:** For more information on the HPE Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server including how to purchase from Hewlett Packard Enterprise, please visit our OS Support Site at: **http://www.hpe.com/info/ossupport** and our driver download page: **http://www.hpe.com/support**
Graphics	Integrated Matrox G200 video standard • 1280 x 1024 (32 bpp) • 1920 x 1200 (16 bpp) HPE iLO 4 On System Management Memory • 16 MB Flash • 256 MB DDR 3 with ECC (112 MB after ECC and video)
Form Factor	The ProLiant XL2x260w Server is a single-slot tray for the HPE Apollo w6000 Chassis.

Embedded Management	**HPE Integrated Lights Out**	Monitor your servers for ongoing management, service alerting, reporting and remote management with iLO. Learn more at **http://www.hpe.com/info/ilo.**
	UEFI	Configure and boot your servers securely with industry standard Unified Extensible Firmware Interface (UEFI). Learn more at **http://www.hpe.com/servers/uefi.**
	HPE RESTful API	RESTful API is an application programming interface. RESTful Web Service API served by iLO's web server **http://www.hpe.com/servers/resttool.**
	Intelligent Provisioning	Provision servers by discovering and deploying 1 to few servers with Intelligent Provisioning. Learn more at **http://www.hpe.com/servers/intelligentprovisioning.**

Standard Features

Server Utilities	**HPE Smart Update**	Optimize firmware and driver updates with HPE Smart Update solutions. Learn more at **http://www.hpe.com/info/smartupdate**
	HPE Systems Insight Manager (HPE SIM)	HPE SIM allows you to monitor the health of your HPE ProLiant Servers and HPE Integrity Servers, and also provides you with basic support for non-Hewlett Packard Enterprise servers. HPE SIM also integrates with HPE SUM to provide quick and seamless firmware updates. Learn more at **http://www.hpe.com/servers/hpsim**
	Scripting Tool Kit and Windows PowerShell	Provision 1 to many servers using your own scripts to discover and deploy them with HPE Scripting Tool Kit for Windows and Linux or HPE Scripting Tools for Windows PowerShell. Learn more at **http://www.hpe.com/servers/stk** or **http://www.hpe.com/servers/powershell**
	HPE RESTful Interface Tool	HPE RESTful API tool is a scripting tool to provision servers using RESTful API Interface to discover and deploy servers at scale. Learn more at **http://www.hpe.com/info/resttool**
	HPE iLO Mobile Application	Enables the ability to access, deploy, and manage your server anytime from anywhere from select smartphones and mobile devices. For additional information please visit: **http://www.hpe.com/info/ilo/mobileapp**
	HPE Insight Online	HPE Insight Online, available at no additional cost as part of your Hewlett Packard Enterprise warranty, Care Pack or contractual support agreement with Hewlett Packard Enterprise , is a personalized dashboard for simplified tracking of IT operations and support information from anywhere, anytime. Learn more at **http://www.hpe.com/info/insightonline/explore**
Embedded Management	**HPE Integrated Lights Out**	Monitor your servers for ongoing management, service alerting, reporting and remote management with iLO. Learn more at **http://www.hpe.com/info/ilo**
HPE Insight management software	**HPE Service Pack for ProLiant (SPP)**	HPE Service Pack for ProLiant (SPP) and HPE Smart Update Manager (HPE SUM) provide a comprehensive approach to firmware and system software maintenance. Together they provide better operating stability and ensure maximum uptime. The SPP will be updated at a predictable cadence, typically coinciding with new Hewlett Packard Enterprise server hardware launches. By enabling firmware to be updated online and integrating firmware and system software updates in one operation, HPE SUM and the SPP offer faster updates of individual servers and dramatically faster updates of entire HPE Apollo w6000 Chassis. Further improving system uptime and stability is the fact that Hewlett Packard Enterprise provides 12 months of support for each Service Pack for ProLiant release (may vary by region). The user experience around HPE SUM and the SPP has been improved in several ways, starting with the web download. A single web page provides access to a single download containing both the latest version of HPE SUM and the latest SPP. Optional smaller subsets with only specific types of servers or specific operating systems are offered to save on download time. The HPE SUM application provides a straightforward, intuitive user interface that guides the user through the steps of discovery, analyses and update, providing comprehensive information on available updates, criticality and interdependencies. This information is also available in reports. By providing the option of multiple local or shared repositories which can be easily updated from hp.com, HPE SUM provides the tools to optimize stability and consistency throughout the company. While HPE SUM and the SPP recommend the combinations of firmware and system

Standard Features

software that Hewlett Packard Enterprise has found to be the best practice, the application gives customers the flexibility to set their own specific baseline.

The Service Pack for ProLiant has been rigorously tested with specific attention for interaction between firmware, drivers and agents both within the server as well as in interaction with the HPE Apollo w6000 chassis. This testing ensures the highest quality as well as providing the input for HPE SUM to deploy updates taking into account all interdependencies, when determining the correct updates and order of update deployment.

NOTE: The Service Pack for ProLiant (which includes HPE SUM) can be downloaded from **http://www.hpe.com/servers/spp/download.** More information can be found: **http://www.hpe.com/info/smartupdate, http://www.hpe.com/info/spp** and **http://www.hpe.com/info/hpsum.**

Security	Power-on password
	Serial interface control
	Administrator's password
	iLO 4 (Integrated Lights-Out 4) has 12 customizable user accounts and SSL encryption
	iLO 4 can be disabled via a Global Setting
	iLO Advanced supports directory services integration
	TPM (Trusted Platform Module) 1.2 or 2.0 option
	UEFI Secure Boot

Warranty
This product is covered by a global limited warranty and supported by HPE Services and a worldwide network of HPE Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HPE Pointnext operational services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

NOTE: Server Warranty includes 3 year Parts, 3 year Labor, 3-year on-site support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have Hewlett Packard Enterprise replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at: **http://www.hpe.com/support/ProLiantServers-warranties**

Additional Options

HPE Insight management software	HPE Insight Control	HPE Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. For more information, see: **http://www.hpe.com/info/insightcontrol** HPE Insight Control includes one year of 24 x 7 HPE Software Technical Support and Update Service ensuring rapid access to Hewlett Packard Enterprise support staff and proactive delivery of software updates. For more information about this service, see: **http://www.hpe.com/services/insight**.
	HPE iLO Advanced	HPE Integrated Lights-Out Advanced License a product option, providing smart remote server management without compromise. iLO Advanced unlocks the full set of remote administration functionality for all HPE ProLiant servers by activating the full Virtual Keyboard Video and Mouse remote console, multi-user collaboration, console record and replay, GUI-based and scripted virtual media and virtual folders, and enhanced security and power management functionality. For more information, see: **http://www.hpe.com/servers/iloadvanced**
	HPE iLO Scale-Out	The HPE iLO Scale-Out license ideal for web/hosting/cloud service providers and High Performance Computing environments. This license is a specific subset of iLO Advanced functionality, provides fast remote access through Text Console via SSH, lower operational cost with Dynamic power capping, and faster time to resolution through Email-based Alerting and proactive notifications. With this newly designed HPE iLO Scale-Out license HPC customers now have a server management package solely design and priced for their massive data environments. HPE iLO Scale-Out is available on all HPE ProLiant servers. For more information, see: **http://www.hpe.com/servers/iLO/scale-out**
	HPE Matrix Operating Environment	The HPE Matrix Operating Environment (Matrix OE) for ProLiant and Integrity servers is an integrated command center that helps you instantly adjust to dynamic business demands. This advanced infrastructure management software lets you reduce the cost of common data center tasks by up to 40 percent while keeping pace with your changing business. The HPE Matrix OE includes the automated provisioning, optimization, and recovery management capabilities for HPE CloudSystem Matrix, the ideal platform for private cloud and Infrastructure as a Service (IaaS). **NOTE:** For more information, visit: **http://www.hpe.com/info/matrixoe.**
HPE Insight Online		HPE Insight Online is a new addition to the HPE Support Center for one stop, secure access to product and HPE support information personalized to your IT environment. Insight Online can automatically display devices remotely monitored by HPE Insight Remote Support. With Insight Online's easy navigation you can efficiently track your IT support contracts and device status from anywhere and at any time. **http://www.hpe.com/info/insightonline**
HPE Apollo Platform Manager		The HPE Apollo Platform Manager (HPE APM) is an optional rack level solution. HPE APM will automatically discover hardware components and enable bay level power on and off, server metering, aggregate dynamic power capping, configurable power-up dependencies and sequencing, consolidated Ethernet access to all resident iLOs, and asset management capabilities. HPE APM features rack level event logging, RADIUS authentication, integrated serial concentrator, up to 11 local user accounts, read only service port, and supports SNMP, SSH, Syslogd, telnet.

Service and Support

Service and Support	**Protect your business beyond warranty with HPE Support Services** It is recommended to have the same attached support level for all products included in the HPE Apollo w6000 chassis. The support of HPE Apollo w6000 the chassis covers the chassis, the included options, the power shelf and APM. The xl2x260w server and switches are not included in the chassis support; separate support services are available for these components. HPE Pointnext for Industry Standard Servers HPE Pointnext provides a comprehensive portfolio including Advisory and Transformational, Professional, and Operational Services to help accelerate your digital transformation. From the onset of your transformation journey, Advisory and Transformational Services focus on designing the transformation and creating a solution roadmap. Professional Services specializes in creative configurations with flawless and on-time implementation, and on-budget execution. Finally, operational services provides innovative new approaches like Flexible Capacity and Datacenter Care, to keep your business at peak performance. HPE is ready to bring together all the pieces of the puzzle for you, with an eye on the future, and make the complex simple.
Recommended Services Optimized Recommendation	**HPE Proactive Care 24x7, three-year Support Service** HPE Proactive Care gives customers an enhanced call experience. When your products are connected to HPE, Proactive Care helps prevent problems and maintains IT stability by utilizing personalized proactive reports with recommendations and advice This Service combines three years proactive reporting and advice with our 24x7 coverage, four hour hardware response time when there is a problem. This service also includes collaborative software support for Independent Software Vendors (ISVs), (Red Hat, VMWare, Microsoft, etc.) running on your HPE servers. **https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA3-8855ENW.pdf**
Standard Recommendation	***HPE Proactive Care and HPE Proactive Care Advanced require that the customer connect their devices to make the most of these services and receive all the deliverables.** HPE Foundation Care 24x7, three-year Support Service HPE Foundation Care 24x7 gives you access to HPE 24 hours a day, seven days a week for assistance on resolving issues. This service includes need based Hardware onsite response within four hours. In addition, collaborative software support is included in this service that provides troubleshooting assistance on industry leading software running on your HPE server. Simplify your support experience and make HPE your first call to help resolve hardware or software problems. **https://www.hpe.com/h20195/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en**
Basic Recommendation	**HPE Foundation Care NBD, three-year Support Service** HPE Foundation Care Next Business Day connects you to HPE during business hours for assistance on resolving issues – This service features need based next business day hardware onsite response and software call back within two hours. In addition, Collaborative software support and provides troubleshooting assistance on industry leading software running on your HPE server. Simplify your support experience and make HPE your first call to help resolve hardware or software problems. **https://www.hpe.com/h20195/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en**
Parts and Materials	HPE will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements. Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product quick-specs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services. The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction
Other Related Services	**HPE Server Hardware Installation** Provides for the basic hardware installation of HPE branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner. **https://www.hpe.com/h20195/V2/GetPDF.aspx/5981-9356EN.pdf**

Service and Support

HPE Installation and Startup

Service provides for the installation of your HPE hardware according to product specifications including options. The HPE service delivery technician will connect the product to a LAN as appropriate and enable remote support to allow for automatic case creation for hardware failures. Installation and start up services also includes the installation of one supported operating system type (Windows® or Linux).

HPE Factory Express for Servers and Storage

HPE Factory Express offers configuration, customization, integration and deployment services for HPE servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HPE products supported through Factory Express include a wide array of servers and storage: HPE Integrity, HPE ProLiant, HPE Apollo, HPE ProLiant Server Blades, HPE BladeSystem, HPE 9000 servers as well as the MSAxxxx3PAR suite, XP, rackable tape libraries and configurable network switches.

HPE Technology Services Support Credits offer flexible services and technical skills to meet your changing IT demands. With a menu of service that is tailored to suit your needs, you get additional resources and specialist skills to help you maintain peak performance of your IT. Offered as annual credits, you can plan your budgets while proactively responding to your dynamic business.

HPE Datacenter Care service

HPE Datacenter Care helps improve IT stability and security, increase the value of IT, and enable agility and innovation. It is a structured framework of repeatable, tested, and globally available services "building blocks." You can deploy, operate, and evolve your datacenter wherever you are on your IT journey. With HPE Datacenter Care, you benefit from a personalized relationship with HPE via a single point of accountability for HPE and others' products. For more information,
visit **http://www.hpe.com/services/datacentercare**

HPE Flexible Capacity, With Flexible Capacity, you get the speed, scalability, and economics of the public cloud in the privacy of your data center. Gain the advantages of the public cloud—consumption-based payment, rapid scalability without worrying about capacity constraints. Reduce the "heavy lifting" needed to operate a data center. And retain the advantages that IT provides the business (i.e., control, security). Deliver the right user experience, choose the right technology for the business, manage privacy and compliance, and manage the cost of IT. And, you have the option to use the public cloud when needed

DC for Hyperscale

Datacenter Care for Hyperscale is available for Service Providers and HPC customers who use a scale out approach to computing with a high volume homogenous infrastructure and resilient architecture can take advantage of this environment support tailored to their operating model

HPE Education Services

Keep your IT staff trained making sure they have the right skills to deliver on your business outcomes. Book on a class today and learn how to get the most from your technology investment. **http://www.hpe.com/ww/learn**

The HPE Support Center

Is a personalized online support portal with access to information, tools and experts to support HPE business products. Submit support cases online, chat with HPE experts, access support resources or collaborate with peers.
Learn more **http://www.hpe.com/support/hpesc**

HPE's Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime.
HPE Insight Remote Support and HPE Support Center are available at no additional cost with a HPE warranty, HPE Support Service or HPE contractual support agreement.
*HPE Support Center Mobile App is subject to local availability
Additional can be found at: **http://www.hpe.com/services**

Service and Support

HPE Support Center   The HPE Support Center is a personalized online support portal with access to information, tools and experts to support HPE business products. Submit support cases online, chat with HPE experts, access support resources or collaborate with peers.
Learn more **http://www.hpe.com/support/hpesc**
HPE's Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime.

For more information   **http://www.hpe.com/services**

Configuration Information

Configuration Infomration – Factory Integrated Models

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, Hewlett Packard Enterprise recommends the use of an Hewlett Packard Enterprise approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.
NOTE: FIO indicates that this option is only available as a factory installable option.
NOTE: HPE Apollo w6000 Chassis and HPE Apollo w6000 Power Shelf are required to support the server. Refer to their QuickSpecs for additional information.
HPE Apollo 6000 Power Shelf

https://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04293375
HPE Apollo w6000 Chassis
https://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04293373

Step 1: Base Configuration (Choose one of the CTO Models below)

HPE CTO Model	HPE ProLiant XL2x260w Single-width 1P 1.2m 2x Server Compute Tray	851659-B21

Step 2: Choose Required Options (only one from each category unless otherwise noted)

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

NOTE: 'F' in back of the processor model number indicates on-board fabric.
NOTE: The processor model as well as the memory configuration determines the maximum speed memory can operate. Please see the see the "Memory" section later in this document.
NOTE: 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.
NOTE: DDR4 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

Registered DIMMs (RDIMMs) – DDR4-2400

HP 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Registered Memory Kit		805347-B21
HP 16GB (1x16GB) Single Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit		805349-B21
HPE 16GB (1x16GB) Dual Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit		836220-B21
HP 32GB (1x32GB) Dual Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit		805351-B21

Load Reduced DIMMs (LRDIMMs) –DDR4-2400

HPE 32GB (1x32GB) Dual Rank x4 DDR4-2400 CAS-17-17-17 Load Reduced Memory Kit		805353-B21
HPE 64GB (1x64GB) 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
NOTE: LRDIMM and RDIMM are distinct memory technologies and cannot be mixed within a server.
NOTE: 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 in this document. For additional information, please see the HPE SmartMemory QuickSpecs at:
https://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04111535
NOTE: Depending on the memory configuration and processor model, the memory speed may run at 2400 Mhz, 2133MHz. Please see Memory Population Table or the Online Memory Configuration Tool at: **http://h22195.www2.hpe.com/MemoryTool/Home/Legal**

Configuration Information

HPE Networking	**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 Opa Fabric Dual Cable FIO Kit	869077-B21

Step 3: Choose Additional Factory Integrated Options

NOTE: Some options may not be integrated at the factory. To ensure only valid configurations are ordered, Hewlett Packard Enterprise recommends the use of a Hewlett Packard Enterprise approved configurator. Contact your local sales representative for additional information.

Read Intensive – SATA M.2 Solid State Drives	
HPE 150GB SATA 6G Read Intensive M.2 2280 3yr Wty Digitally Signed Firmware SSD	875317-B21
HPE 480GB SATA 6G Read Intensive M.2 2280 3yr Wty Digitally Signed Firmware SSD	875319-B21
HPE 480GB SATA 6G Read Intensive M.2 2280 3yr Wty Digitally Signed Firmware SSD	875498-B21
HPE 960GB SATA 6G Read Intensive M.2 2280 3yr Wty Digitally Signed Firmware SSD	875500-B21
HPE 1.92GB SATA 6G Read Intensive M.2 2280 3yr Wty Digitally Signed Firmware SSD	875496-B21
Mixed Use – SATA M.2 Solid State Drives	
HPE 240GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD	875488-B21
HPE 480GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD	875490-B21
HPE 960GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD	875492-B21
HPE 1.92TB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD	875494-B21
HPE iLO Advanced	
HPE iLO Advanced including 1yr 24x7 Technical Support and Updates E-LTU	E6U59ABE
HPE iLO Advanced including 3yr 24x7 Technical Support and Updates E-LTU	E6U64ABE
HPE iLO Advanced including 3yr 24x7 Tech Support and Updates 1-server LTU	BD505A
HPE iLO Advanced including 1yr 24x7 Technical Support and Updates 1-server LTU	512485-B21
Security Hardware	
HPE Trusted Platform Module 2.0 Kit	745823-B21

For detailed memory configuration rules and guidelines, please use the Online DDR4 Memory Configuration Tool:
http://h22195.www2.hpe.com/MemoryTool/Home/Legal

Memory Subsystem Architecture

Each Intel® Xeon® PHi family processor socket contains six memory channels that support one DIMM each for a total of six (6) DIMM per node .

Memory Population Rules and Guidelines:

- The platform does not support mixing of DIMM types- either the processor socket is populated with all RDIMMS or all LRDIMMS.
- Mixing of DDR4 operating frequencies is not validated by Intel. If DIMMs with different frequencies are mixed, all DIMMs will run at the common lowest frequency.
- There needs to be an equal population of DIMMs across the two memory controllers(one for slots 0-2; one for slots 3-5) when both are enabled. (If no slots are populated on a memory controller, then the other memory controller can accept any of eight possible population configurations in its three slots.)
- The maximum memory speed is a function of the memory type, memory configuration, and processor model.
- The maximum memory capacity is a function of the memory type and number of installed processors.
- To realize the performance memory capabilities listed in this document, HPE SmartMemory is required. For additional information, please see the HPE SmartMemory QuickSpecs
  at: **https://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04111535**

Memory

- For memory population rules and additional memory guidelines, please see the HPE ProLiant XL2x260w user guide at **http://www.hpe.com/support**

Supported Memory Bandwidth on Intel® PHI

| DIMM Capacity	8GB	16 GB	16 GB	32GB	32GB	64GB
Supported Options	1R RDIMM,	1R RDIMM,	2R- RDIMM	2R- RDIMM	2R-LRDIMM	4R LRDIMM
SLOTS THAT CAN BE POPULATED						
6 slots	6	6	6	6	6	6
MAXIMUM CAPACITY (GB)*						
6 slots	48	96	96	192	192	384
DIMM MAXIMUM OPERATING SPEED (MT/s)						
1 DIMM Per Channel	2400	2400	2400	2400	2400	2400
*Maximum dimm operating speed is a function of the processor model						

DDR4 memory options part number decoder

NOTE: Capacity references are rounded to the common gigabyte (GB) values.
- 8GB = 8,192 MB
- 16GB = 16,384 MB
- 32GB = 32,768 MB
- 64GB = 65,536 MB

For more information on memory, please see the Memory Quickspecs: **HPE DDR4 SmartMemory**
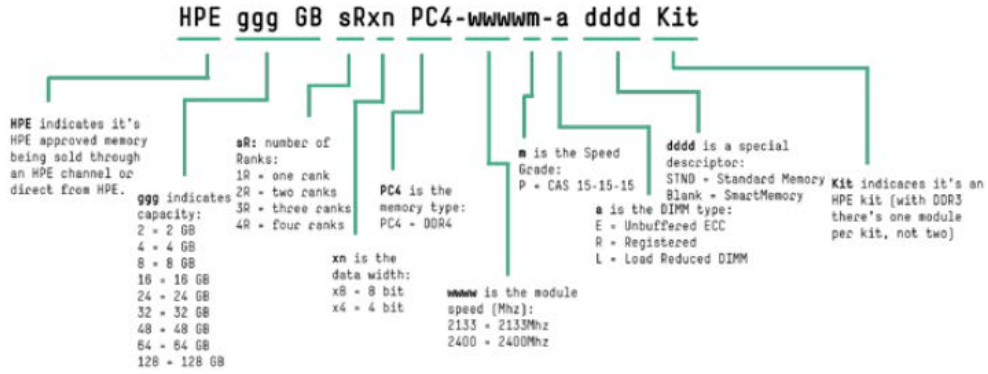
DIMM slot locations
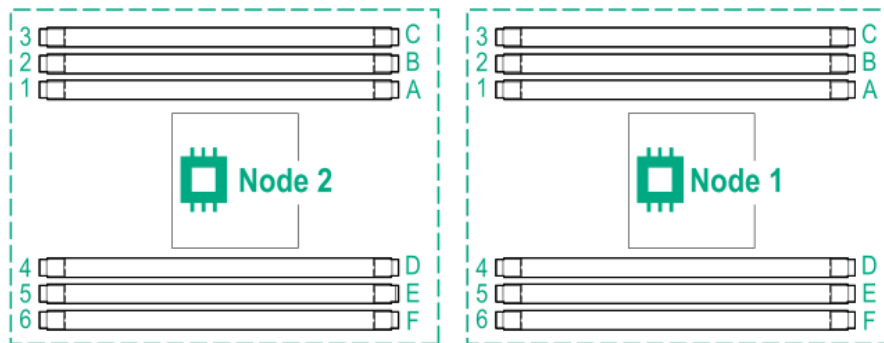
Memory options part number decoder

Memory

DDR4 Product Description Format (Short Name)

Example: HPE 8 GB 1R×4 PC4-2133P-R STND Kit

HPE ggg GB sRxn PC4-wwwwm-a dddd Kit

HPE indicates it's HPE approved memory being sold through an HPE channel or direct from HPE.

ggg indicates capacity:
2 = 2 GB
4 = 4 GB
8 = 8 GB
16 = 16 GB
24 = 24 GB
32 = 32 GB
48 = 48 GB
64 = 64 GB
128 = 128 GB

sR: number of Ranks:
1R = one rank
2R = two ranks
3R = three ranks
4R = four ranks

xn is the data width:
x8 = 8 bit
x4 = 4 bit

PC4 is the memory type:
PC4 = DDR4

wwww is the module speed (Mhz):
2133 = 2133Mhz
2400 = 2400Mhz

m is the Speed Grade:
P = CAS 15-15-15

a is the DIMM type:
E = Unbuffered ECC
R = Registered
L = Load Reduced DIMM

dddd is a special descriptor:
STND = Standard Memory
Blank = SmartMemory

Kit indicates it's an HPE kit (with DDR3 there's one module per kit, not two)

HPE 8 GB 1 R×4 PC4-2133P-R STND Kit indicates an HPE Standard Memory DIMM with a 8 GB capacity, single rank, a data width of 4, memory type of DDR4, 2133 registered, 15-15-15 latency, and an HPE kit.

Technical Specifications

System Unit	**Server Dimensions** (L x W x D)	1.65 in x 7.64 in x 31.47 in (4.19 cm x 19.41 cm x 79.93 cm)	
	Shipping Dimensions (L x W x D)	9 in x 14.5 in x 39 in (22.86 cm x 36.83 cm x 99.06 cm)	
	Weight (approximate)	Maximum	16.0 lb (7.26 kg)
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). The approved hardware configurations for this system are listed at the URL: **http://www.hpe.com/servers/ASHRAE** 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). The approved hardware configurations for this system are listed at the URL: **http://www.hpe.com/servers/ASHRAE**
	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. **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 70Kpa/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.

Technical Specifications

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	8.6B	9.0B
LpAm	64 dBA	69 dBA	73 dBA

Environment-friendly Products and Approach

End-of-life Management and Recycling

Hewlett Packard Enterprise offers end-of-life product return, trade-in, and recycling programs, in many geographic areas, for our products. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE Directive (2012/19/EU) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard Enterprise web site: **http://www.hpe.com/RECYCLE.** These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.

Summary of Changes

Date	Version History	Action	Description of Change
25-Sept-2017	Version 1	Created	Created QuickSpecs for HPE XL2x260w Server

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