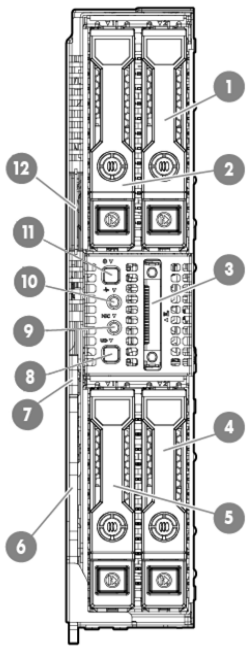
Overview

HPE ProLiant XL260a Gen9 Server

The HPE ProLiant XL260a Server delivers Intel Xeon Phi performance, while taking advantage of the Apollo 6000 System's modular flexibility and rack-scale efficiency. This server leverages Intel's Intel Xeon Phi series processors with on-board memory and fabric and DDR 4 HPE SmartMemory.
The modular HPE Apollo a6000 Chassis accommodates up to 10 single slot XL260a server trays to address various workload needs.
Rack scale power efficiency is fueled by an external power shelf, with easy Apollo Platform Management for rack, chassis, server and component level management

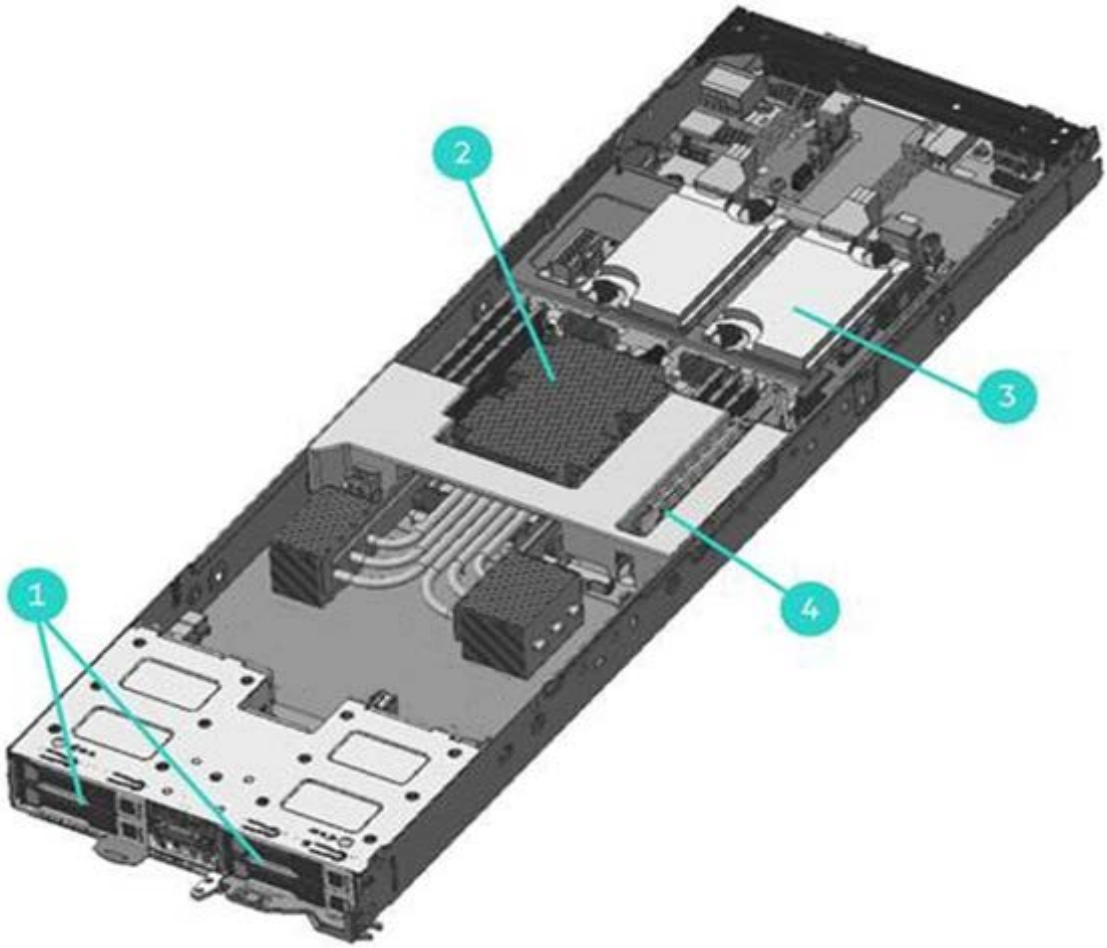


Item Description

Front View Item Description

1. Drive 2
2. Drive 1
3. SUV connector
4. Drive 4
5. Drive 3
6. Server tray release lever
7. Server tray release latch
8. Power Button /Power LED
9. Health LED
10. NIC status LED
11. UID button
12. Serial label pull tab

Standard Features



.

Top View Item Description

1. SFF hard drive bays
2. Support for 1 Intel Xeon Phi series processor
3. Support for 2 High Speed Fabric Mezzanine Cards
4. Support for up to 6 DDR4 DIMMs

Standard Features

Processor

Intel Xeon Phi x200 Series

Model	TDP Frequency	Cores	Mesh Frequnecy	Power	DDR4 Hz	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

On System Management Processor

HPE iLO (Firmware: HPE iLO 4)

NOTE: For more information, visit**: http://www.hp.com/go/ilo.**

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 server 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 XL260a Gen9 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 1x Intel 563i 10Gb SFP

Ethernet Options

HPE Ethernet 1Gb 4-port 331T Adapter
HPE Ethernet 1Gb 2-port 332T Adapter
HPE Ethernet 10Gb 2-port 562SFP+ Adapter
HPE Ethernet 10Gb 2-port 546SFP+ Adapter

InfiniBand Options

HPE Apollo IB EDR 100Gb 840z FIO Adapter

Omni-Path Options

HPE Apollo 6000 OPA Mezzanine FIO Kit (Intel)

I/O Module kit options

HPE 10Gb Ethernet PCIe I/O Module FIO Kit
HPE 100Gb Single Fabric 2m Egress Cable w/ PCIe I/O Module FIO Kit
HPE 100Gb Dual Fabric 2m Egress Cables w/ PCIe I/O Module FIO Kit
HPE CPU Intel Omni-Path Architecture Single Fabric I/O Module FIO Kit
HPE CPU Intel Omni-Path Architecture Dual Fabric I/O Module FIO Kit

Expansion Slots

Expansion Slot #	Technology	Bus Width*	Form Factor
External PCIe	PCIe 3.0	X4	Low profile

Standard Features

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 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.hp.com/support/rbsu.**

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

The HPE ProLiant XL260a Gen9 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.hp.com/go/uefi/docs**

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 XL260a Gen9 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

Storage Controller

Embedded Controller
Embedded Chipset SATA Controller (AHCI)Host Bus Adapter

Standard Features

	HPE H241 Smart HBA(Optional)		
Internal Storage Devices	Optional M.2		
Optional Micro SD			741279-B21
Maximum Internal Storage	Hot Plug SFF SATA HDD	8TB	4 x 2TB
	Hot Plug SFF SSD	7.68TB	4 x 1.92TB
Interfaces	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 a6000 Chassis	
	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.hp.com/go/proliant-energy-efficient** or **http://www.hp.com/go/hppoweradvisor.**
NOTE: Power Specification and Technical Content for supported power supplies can be found at: **http://h18000.www1.hpe.com/products/QuickSpecs/14209/14209.html**

Operating Systems and Virtualization Software Support for ProLiant Servers

Red Hat Enterprise Linux (RHEL)
SUSE Linux Enterprise Server (SLES)
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.hp.com/go/ossupport** and our driver download page: **http://www.hp.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

Standard Features

- 256 MB DDR 3 with ECC (112 MB after ECC and video)

Form Factor	The ProLiant XL260a Gen9 Server is a single-slot tray for the HPE Apollo a6000 Chassis. **NOTE:** There are various XL260a server trays	
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.hp.com/go/ilo.**
	UEFI	Configure and boot your servers securely with industry standard Unified Extensible Firmware Interface (UEFI). Learn more at **http://www.hp.com/go/ProLiant/uefi.**
	HPE RESTful API	RESTful API is an application programming interface. RESTful Web Service API served by iLO's web server **http://www.hp.com/go/restfulapi**.
	Intelligent Provisioning	Provision servers by discovering and deploying 1 to few servers with Intelligent Provisioning. Learn more at **http://www.hp.com/go/intelligentprovisioning.**

Standard Features

Server Utilities	**HPE Smart Update**	Optimize firmware and driver updates with HPE Smart Update solutions. Learn more at **http://www.hp.com/go/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.hp.com/go/sim**
	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.hp.com/go/ProLiantSTK** or **http://www.hp.com/go/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.hp.com/go/restfulapi**
	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.hp.com/go/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.hp.com/go/insightonline/info.**
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.hp.com/go/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 a6000 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 software that Hewlett Packard Enterprise has found to be the best practice, the application gives customers the flexibility to set their own specific baseline.

Standard Features

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 a6000 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.hp.com/go/spp/download.** More information can be found: **http://www.hp.com/go/SmartUpdate**, **http://www.hp.com/go/spp** and **http://www.hp.com/go/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 Hewlett Packard Enterprise Services and a worldwide network of Hewlett Packard Enterprise Authorized Channel Partners (may vary by region). Hardware diagnostic support and repair is available for one year 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. **NOTE:** Server Warranty includes 1 year Parts, 1 year Labor, 1-year(AMS,EMEA) and 3-3-3(APJ) 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://h18004.www1.hpe.com/products/servers/platforms/warranty/index.html**

Optional Features

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.hp.com/go/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.hp.com/go/iloadvance**
	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 Gen9 servers. For more information, see: **http://www.hp.com/go/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.hp.com/go/matrixoe**.
High Performance Clusters	HPE Cluster Platforms	HPE Cluster Platforms are specifically engineered, factory-integrated large-scale ProLiant clusters optimized for High Performance Computing, with a choice of servers, networks and software. Operating system options include specially priced offerings for Red Hat Enterprise Linux and SUSE Linux Enterprise Server, as well as Microsoft Windows HPC Server. A Cluster Platform Configurator simplifies ordering. **http://www.hp.com/go/clusters**
	HPE HPC Interconnects	High Performance Computing (HPC) interconnect technologies are available for this server as part of the HPE Cluster Platform portfolio. These high-speed InfiniBand and Gigabit interconnects are fully supported by Hewlett Packard Enterprise when integrated within an Hewlett Packard

Optional Features

		Enterprise cluster. Flexible, validated solutions can be defined with the help of configuration tools. **http://www.hpe.com/techservers/clusters/ucp/index.html**
	HPE Insight Cluster Management Utility	HPE Insight Cluster Management Utility (CMU) is an Hewlett Packard Enterprise -licensed and Hewlett Packard Enterprise -supported suite of tools that are used for lifecycle management of hyperscale clusters of Linux ProLiant systems. CMU includes software for the centralized provisioning, management and monitoring of nodes. CMU makes the administration of clusters user friendly, efficient, and effective. **http://www.hp.com/go/cmu**

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.hp.com/go/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	**The XL260a tray is part of the HPE Apollo a6000 chassis. Support for this tray needs to be purchased at a chassis level. Please refer to HPE Apollo a6000 Chassis quick spec documentation for details.** **HPE Technology Services for Apollo Systems** HPE Technology Services delivers confidence, reduces risk and helps customers realize agility and stability. Connect to Hewlett Packard Enterprise to help prevent problems and solve issues faster. Our support technology lets you to tap into the knowledge of millions of devices and thousands of experts to stay informed and in control, anywhere, any time. **Protect your business beyond warranty with HPE Pointnext operational services** HPE Pointnext operational services enable you to order the right service level, length of coverage and response time as you purchase your new server, giving you full entitlement for the term you select.
Get connected to Hewlett Packard Enterprise to improve your support experience	Connecting products to Hewlett Packard Enterprise will help prevent problems with 24x7monitoring, prefailure alerts, automatic call logging, and parts dispatch. With Connected products, you can have a dashboard to manage your IT anywhere, anytime, from any device
HPE Support Center	Personalized online support portal with access to information, tools and experts to support Hewlett Packard Enterprise business products. Submit support cases online, chat with Hewlett Packard Enterprise experts, access support resources or collaborate with peers. Learn more **http://www.hp.com/go/hpsc** The HPE 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 personalize IT support anywhere, anytime. HPE Insight Remote Support and HPE Support Center are available at no additional cost with a Hewlett Packard Enterprise warranty, HPE Care Pack or Hewlett Packard Enterprise contractual support agreement.

Optional Features

*The HPE Support Center Mobile App is subject to local availability.

Parts and Materials

Hewlett Packard Enterprise will provide Hewlett Packard Enterprise-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 QuickSpecs, 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 Hewlett Packard Enterprise due to malfunction

For more information

To learn more on HPE ProLiant servers, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Or visit: **http://www.hpe.com/services/proliant**

To find the full list of Care Pack SKUs for the HPE Apollo family of products, go to: **http://www.hpe.com/services/ssc** and in step 2 select HPE ProLiant, then select HPE Apollo family

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 a6000 Chassis and HPE Apollo 6000 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 a6000 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 XL260a Gen9 Single-wide 1P 1.0m Rear-cabled Hot Plug Drives Compute Tray	846781-B21

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

HPE Processors	HPE XL260a Gen9 Intel Xeon Phi 7290 (1.50GHz/72-core/16GB MCDRAM/245W) FIO Processor Kit	865989-L21
	HPE XL260a Gen9 Intel Xeon Phi 7250 (1.40GHz/64-core/16GB MCDRAM/215W) FIO Processor Kit	865991-L21
	HPE XL260a Gen9 Intel Xeon Phi 7230 (1.30GHz/64-core/16GB MCDRAM/215W) FIO Processor Kit	867224-L21
	HPE XL260a Gen9 Intel Xeon Phi 7210 (1.30GHz/64-core/16GB MCDRAM/215W) FIO Processor Kit	867223-L21
	HPE XL260a Gen9 Intel Xeon Phi 7210F (1.30GHz/64-core/16GB MCDRAM/230W) FIO Processor Kit	867225-L21
	HPE XL260a Gen9 Intel Xeon Phi 7230F (1.30GHz/64-core/16GB MCDRAM/230W) FIO Processor Kit	867226-L21

Configuration Infomration – Factory Integrated Models

	HPE XL260a Gen9 Intel Xeon Phi 7250F (1.40GHz/68-core/16GB MCDRAM/230W) FIO Processor Kit	867227-L21
	HPE XL260a Gen9 Intel Xeon Phi 7290F (1.50GHz/72-core/16GB MCDRAM/260W) FIO Processor Kit	867228-L21
	NOTE: 'F' in front 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 XL260a server tray. **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 Gen9. 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**	
	Host Bus Adapter(Optional)	
	HPE H241 12Gb 2-ports Ext Smart Host Bus Adapter	726911-B21
HPE Networking	**Network Module Options**	
	HPE 10Gb Ethernet PCIe I/O Module FIO Kit	867279-B21
	HPE InfiniBand EDR/Intel Omni-Path Architecture Single Fabric PCIe I/O Module FIO Kit	863662-B21
	HPE InfiniBand EDR/Intel Omni-Path Architecture Dual Fabric PCIe I/O Module FIO Kit	867280-B21
	HPE CPU Intel Omni-Path Architecture Single Fabric I/O Module FIO Kit	867281-B21

Configuration Infomration – Factory Integrated Models

HPE CPU Intel Omni-Path Architecture Dual Fabric I/O Module FIO Kit	869772-B21

Ethernet Options

HPE Ethernet 1Gb 4-port 331T Adapter	647594-B21
HPE Ethernet 1Gb 2-port 332T Adapter	615732-B21
HPE Ethernet 10Gb 2-port 562SFP+ Adapter	727055-B21
HPE Ethernet 10Gb 2-port 546SFP+ Adapter	779793-B21

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

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.

6G SATA Hot Plug SFF (2.5-inch) Hard Drive

1yr Warranty Hard Drives

HPE 1TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD	765453-B21
HPE 2TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD	765455-B21

6G SATA Hot Plug SFF (2.5-inch) Mixed Use Solid State Drive

3yr Warranty Solid State Drives

HPE 200GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty SSD	804613-B21
HPE 800GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty SSD	804625-B21
HPE 1.6TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty SSD	804631-B21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty SSD	832414-B21
HPE 120GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty SSD	816965-B21
HPE 240GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty SSD	816975-B21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty SSD	816985-B21
HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty SSD	816995-B21
HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty SSD	817011-B21
HPE 1TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty Digitally Signed Firmware HDD	655710-B21

M.2 Options

HPE XL260a Gen9 PCIe/SATA M.2 Riser Kit	863661-B21
HPE 120GB 6G SATA Read Intensive M.2 2280 3yr Wty Solid State Drive	777262-B21
HPE 340GB SATA 6G Read Intensive M.2 2280 3yr Wty SSD	777264-B21
HPE Trusted Platform Module 2.0 Kit	745823-B21

Memory

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.
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**
- For memory population rules and additional memory guidelines, please see the HPE ProLiant XL260a Gen9 user guide at **http://www.hpe.com/support**.

Supported Memory Bandwidth on Intel® PHI

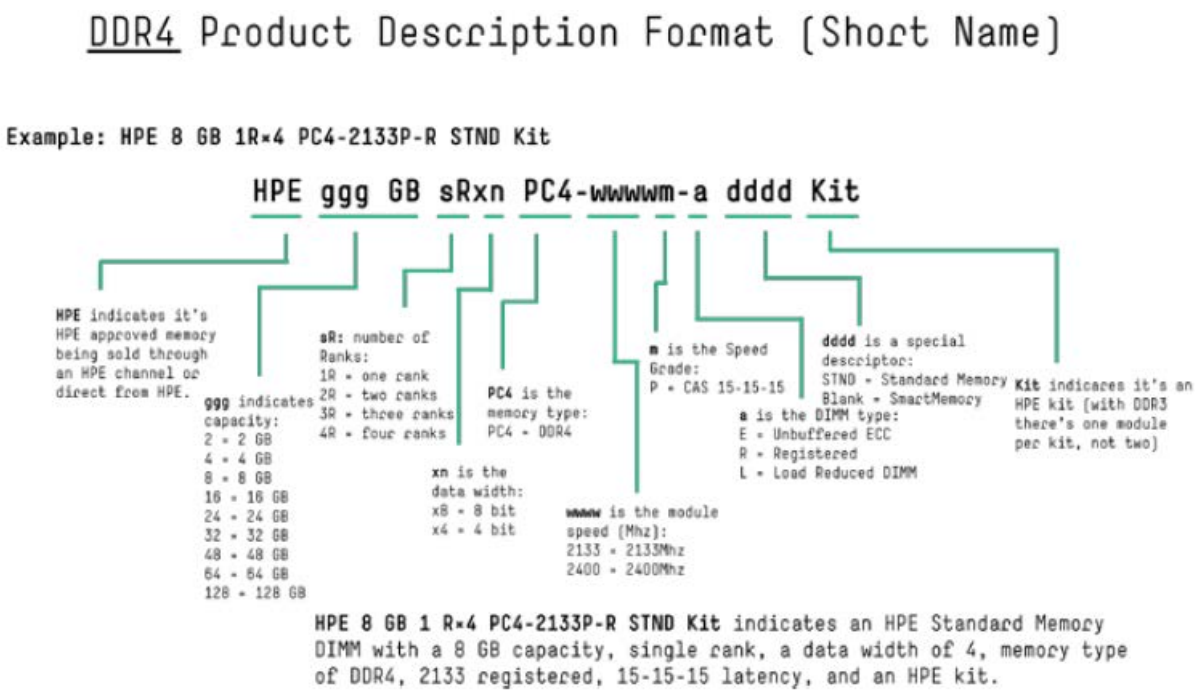
DIMM Capacity	8GB	16 GB	16 GB	32GB	32GB	64GB
Supported Options	1R RDIMM,	1R RDIMM,	2R- RDIMM	2R- RDIMM	2R-LRDIMM	4R LRDIMM
SLOTS THAT CAN BE POPULATED						
6 slots	6	6	6	6	6	6
MAXIMUM CAPACITY (GB)*						
6 slots	48	96	96	192	192	384
DIMM MAXIMUM OPERATING SPEED (MT/s)						
1 DIMM Per Channel	2400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

Memory

NOTE: Capacity references are rounded to the common gigabyte (GB) values.

- 2GB = 2,048MB
- 4GB = 4,096MB
- 8GB = 8,192MB
- 16GB = 16,384MB
- 32GB = 32,768MB
- 64GB = 65,536MB

Memory options part number decoder



Technical Specifications

System Unit	**Server Dimensions** (L x W x D)	1.70 x 8.33 x 27.87 in (4.33 x 21.15 x 70.79 cm)	
	Shipping Dimensions (L x W x D)	37.63 x 15.13 x 9 in (95.5 x 38.4 x 22.8 cm)	
	Weight (approximate)	Maximum (four hard drives and one processor installed)	11.0 lb (4.99 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.
		Extended Ambient Operating Support	System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F). For approved hardware configurations, the supported system inlet range is extended to be: 5° to 10°C (41° to 50°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.hp.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.hp.com/servers/ASHRAE** System performance may be reduced if operating in the extended ambient operating range or with a fan fault.
		Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	Relative Humidity (non-condensing)	Operating	Minimum to be the higher (more moisture) of -12°C (10.4°F) dew point or 8% relative humidity. Maximum to be the lower (less moisture) of 24°C (75.2°F) dew point or 90% relative humidity.
		Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
	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).

Technical Specifications

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	TBD	TBD	TBD
LpAm	TBD	TBD	TBD
LWAd	TBD	TBD	TBD
LpAm	TBD	TBD	TBD
Operating			
LWAd	TBD	TBD	TBD
LpAm	TBD	TBD	TBD

Emissions Classification (EMC)

FCC Rating	Class A
Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1

NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.

nvironment-friendly Products and Approach

End-of-life Management and Recycling

Hewlett Packard Enterprise offers end-of-life Hewlett Packard Enterprise product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: **http://www.hp.com/go/green**. To recycle your product, please go to: **http://www.hp.com/go/green** or contact your nearest Hewlett Packard Enterprise sales office. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.
The EU WEEE directive (2002/95/EC) 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 at: **http://www.hp.com/go/green**. 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
23-Oct-2017	Version 5	Changed	Care Pack naming and Service and Support- Parts and Materials updated.
5-Jun-2017	From version 3 to 4	Updated	Update content throughout the QuickSpecs
27-Mar-2017	From version 2 to 3	Updated	Update the Standard Features, Configuration information and the Techcnical Specification sections
28-Nov-2016	From version 1 to 2	Updated	Update several sections troughout the QuickSpecs
26-Sept-2016	Version 1	Created	Created the QuickSpecs for HPE ProLiant XL260a Gen9 Server

c05211228 - 15655 - WorldWide - V5 - 23-October-2017