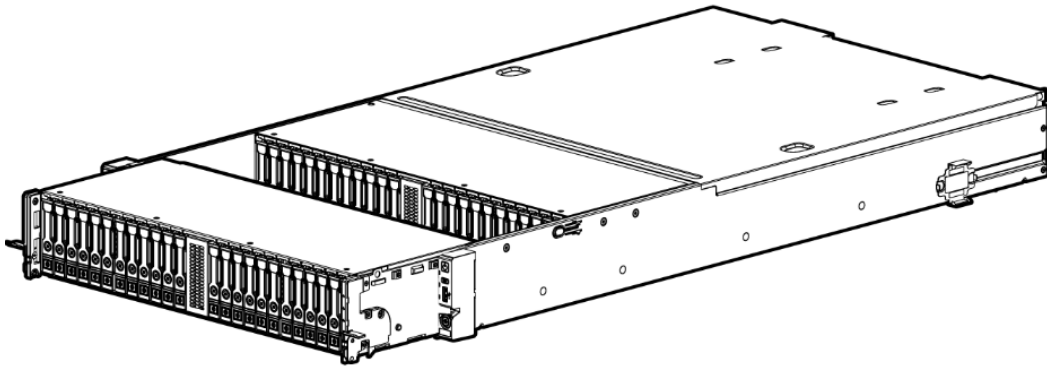


Overview

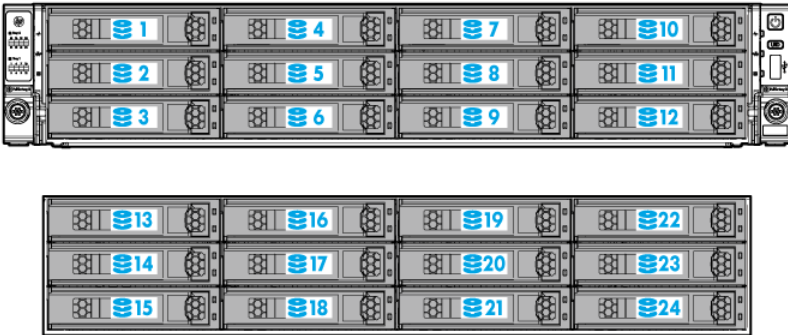
HP Apollo 4200 Gen9 Server

Are you ready to compete in the Big Data arena by making the leap into enterprise-class server storage architecture?

The HP Apollo 4200 Gen9 Server offers revolutionary storage density in a 2U form factor, with more than double the storage capacity of competitors. If you are running object storage, Hadoop, content delivery, or other data intensive workloads on general purpose servers, the HP Apollo 4200 Gen9 Server allows you to save valuable data center space through its unique density optimized 2U form factor which holds up to 28 LFF or 50 SFF hot plug drives.

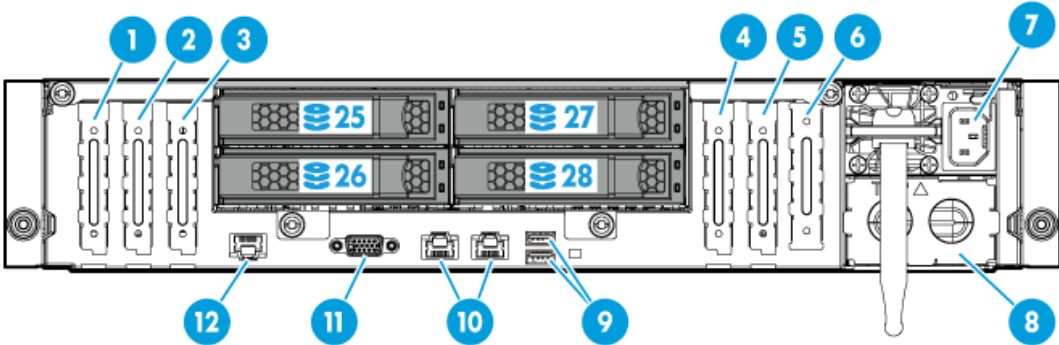


Overview



Front View – 24LFF Chassis

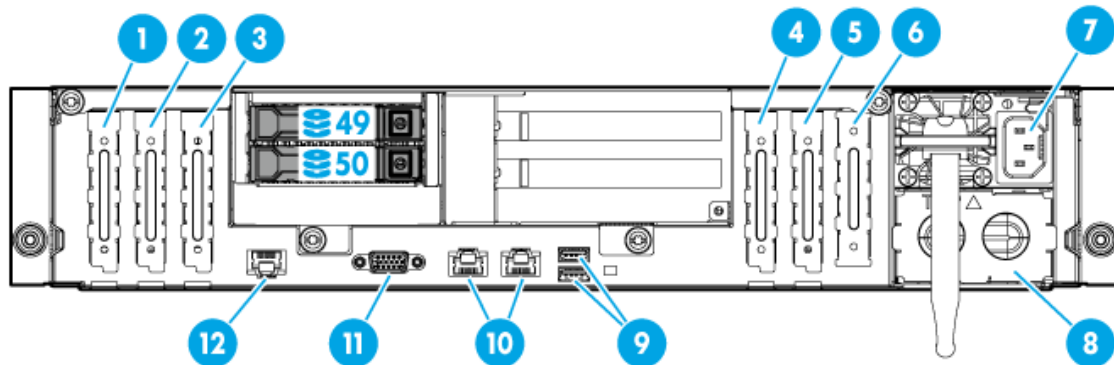
- 1-12. Front row of LFF drives
- 13-24. Second row of LFF Drives



Overview

LFF Model rear view with rear hard drive option kit

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> 1. PCI Slot 7 2. PCI Slot 6 3. PCI Slot 5 4. PCI Slot 2 5. PCI Slot 1 6. FlexibleLOM 7. Power supply 8. Power Supply blank | <ol style="list-style-type: none"> 9. USB 3.0 Ports 10. Embedded 2x1GbE Ethernet 11. Rear VGA (Video) Port 12. Optional Dedicated iLO Management Port 25. LFF Drive number 25 (when rear cage is purchased) 26. LFF Drive number 26 (when rear cage is purchased) 27. LFF Drive number 27 (when rear cage is purchased) 28. LFF Drive number 28 (when rear cage is purchased) |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



Item Description

Rear view with SFF cage

1. PCI Slot 7
2. PCI Slot 6
3. PCI Slot 5
4. PCI Slot 2
5. PCI Slot 1
6. FlexibleLOM
7. Power supply
8. Power Supply blank
9. USB 3.0 Ports
10. Embedded 2x1GbE Ethernet
11. UID button
12. Serial label pull tab

Standard Features

NOTE: For more information regarding Intel Xeon processors, please see the following <http://www.intel.com/xeon>. Intel® Xeon® processor E5-2600 v3 product family is designed to deliver the best combination of performance, built-in capabilities, and cost-effectiveness. One (or two) of the following Intel® Xeon® E5-2600 v3 processors based on the model.

Processor
Up to two of the following depending on model

Model	CPU frequency	Cores	L3 Cache	Power	QPI	DDR4 Hz
E5-2699v3	2.3GHz	18	45MB	145W	9.6GT/s	2133
E5-2698v3	2.3GHz	16	40MB	135W	9.6GT/s	2133
E5-2697v3	2.6GHz	14	35MB	145W	9.6GT/s	2133
E5-2695v3	2.3GHz	14	35MB	120W	9.6GT/s	2133
E5-2690v3	2.6GHz	12	30MB	135W	9.6GT/s	2133
E5-2683v3	2.0GHz	14	35MB	120W	9.6GT/s	2133
E5-2680v3	2.5GHz	12	30MB	120W	9.6GT/s	2133
E5-2670v3	2.3GHz	12	30MB	120W	9.6GT/s	2133
E5-2667v3	3.2GHz	8	20MB	135W	9.6GT/s	2133
E5-2660v3	2.6GHz	10	25MB	105W	9.6GT/s	2133
E5-2650v3	2.3GHz	10	25MB	105W	9.6GT/s	2133
E5-2650Lv3	1.8GHz	12	30MB	65W	9.6GT/s	2133
E5-2643v3	3.4GHz	6	20MB	135W	9.6GT/s	2133
E5-2640v3	2.6GHz	8	20MB	90W	8.0GT/s	1866
E5-2637v3	3.5GHz	4	15MB	135W	9.6GT/s	2133
E5-2630v3	2.4Ghz	8	20MB	85W	8.0GT/s	1866
E5-2630Lv3	1.8GHz	8	20MB	55W	8.0GT/s	1866
E5-2623v3	3.0GHz	4	10MB	105W	8.0GT/s	1866
E5-2620v3	2.4GHz	6	15MB	85W	8.0GT/s	1866
E5-2609v3	1.9GHz	6	15MB	85W	6.4GT/s	1600
E5-2603v3	1.6GHz	6	15MB	85W	6.4GT/s	1600

Chipset

Intel® C610 Series Chipset
Intel® E5-2600v3 Processor Family
NOTE: For more information regarding Intel chipsets, please see the following URL:
<http://www.intel.com/products/server/chipsets/>.

On System Management Chipset

HP iLO (Firmware HP iLO4 2.0) 2GB NAND
NOTE: 1GB USB user space configurable via UEFI and accessible via iLO. Read and learn more in the [iLO QuickSpecs](#).

Motherboard

HP ProLiant XL420 Gen9 Server
NOTE: As a reminder that the Apollo 4200 Gen9 Server offers familiar management tools, the motherboard carries a ProLiant name.
NOTE: In boot-up, the “HP ProLiant XL420 Gen9 Server” name will appear.
NOTE: The official product name remains HP Apollo 4200 Gen9 Server, while the motherboard name is “HP ProLiant XL420 Gen9 Server”

Memory Protection

Advanced ECC
Advanced ECC uses single device data correction to detect and correct single and all multibit error that occurs within a single DRAM chip.

Online spare
Memory online spare mode detects a rank that is degrading and switches operation to the spare rank.

Standard Features

Expansion Slots

CPU1, (Standard)

Expansion Slots #	Technology	Bus Width	Connector Width	Form Factor	Notes
FlexibleLOM					
1	PCIe 3.0	x8	X8	Low profile	Proc 1
2	PCIe 3.0	x16	x16	Low profile	Proc 1

Slots with 2 PCIe FHHL riser (CPU1)

(Optional 2SFF and 2 FHHL Kit: (806564-B21)

Expansion Slots #	Technology	Bus Width	Connector Width	Form Factor	Notes
3	PCIe 3.0	X8	x8	Full height, full length slot	Proc 1
4	PCIe 3.0	X8	X8	Full height, full length slot	Proc 1

NOTE: Using optional FHHL kit (PN: 806564-B21), the two PCIe slots (slots 3 and 4) are available by using slot 2 as a standup expansion slot.

NOTE: PCIe slots 1-4 are associated with processor 1.

CPU 2 (Optional)

Expansion Slots #	Technology	Bus Width	Connector Width	Form Factor	Notes
5	PCIe 3.0	x16	x16	Low Profile	Proc 2
6	PCIe 3.0	x8	x8	Low Profile	Proc 2
7	PCIe 3.0	X16	X16	Low Profile	Proc 2

Storage Controller

Embedded Controllers

HP Flexible Smart Array P840ar/2G FIO Controller
HP Dynamic Smart Array B140i Controller

NOTE: The P840ar is embedded in the chassis by default.

NOTE: The embedded B140i controller will operate in UEFI only mode when shipping. Legacy model can be selected with an HP sales representative.

NOTE: The B140i defaults to AHCI off the chipset. Smart Array needs to be enabled on the SATA-only models, if required.

Internal Storage Devices

One of the following depending on model

48 SFF with optional 2 SFF drives rear

24 LFF plus optional 4 LFF drives rear or 2 SFF drives rear

NOTE: HP Apollo 4200 Gen9 2SFF and 2FHHL Kit (806564-B21) is available for the SFF and LFF models.

NOTE: HP Apollo 4200 Gen9 LFF Rear HDD Cge Kit (806563-B21) supports an additional 4 LFF drives and is available only for the LFF model.

Caution: Do not operate the server with any of the rear drive cage bays empty. To maintain proper airflow and sufficient cooling in the rear drive cage, all drive bays in this cage should have a drive or a drive blank. HP recommends installing at least one drive in the rear drive cage before operating the Apollo 4200.

48 SFF Model

	CAPACITY	CONFIGURATION
Hot Plug SFF SAS	100TB	48+2 x 2TB (with optional rear SFF drive cage)
Hot Plug SFF SATA	100 0TB	48+2 x 2TB (with optional SFF drive cage)
Hot Plug SFF SATA SSD	48TB	48+2 x 960GB (with optional SFF drive cage)
Hot Plug SFF SAS SSD	80TB	48+2 x 1.6TB (with optional rear SFF drive cage)

24 LFF Model

Hot Plug LFF SATA	224TB	24+4 x 8TB (with optional rear LFF drive cage)
Hot Plug LFF SAS	224TB	24+4 x 8TB (with optional rear LFF drive cage)
Hot Plug LFF SATA SSD	26.9TB	24+4 x 960GB (with optional rear LFF drive cage)
Hot Plug LFF SAS SSD	45TB	24+4 x 1.6TB (with optional rear LFF drive cage)

Standard Features

Power Supply

HP 800W Flex Slot Platinum Hot Plug Power Supply
 HP 1400W Flex Slot Platinum Plus Hot Plug Power Supply
 HP 800W Flex Slot Titanium Hot Plug Power Supply Kit
 HP 800W Flex Slot Universal Hot Plug Power Supply Kit
 HP 800W Flex Slot 48VDC Hot Plug Power Supply Kit

HP Flexible Slot (Flex Slot) Power Supplies share a common electrical and physical design that allows for hot plug, tool-less installation into HP ProLiant Gen9 Performance Servers. Flex Slot power supplies are certified for high-efficiency operation and offer multiple power output options, allowing users to "right-size" a power supply for specific server configurations. This flexibility helps to reduce power waste, lower overall energy costs, and avoid "trapped" power capacity in the data center.

All pre-configured servers ship with a standard 6-foot IEC C-13/C-14 jumper cord (AOK02A). This jumper cord is also included with each standard AC power supply option kit. If a different power cord is required, please check the [ProLiant Power Cables](#) web page.

To review the power requirements for your selected system, please use the HP Power Advisor Tool located at <http://www.hp.com/go/hppoweradvisor>.

Power specifications and technical content for all HP Server power supplies can be found at <http://www.hp.com/go/proliant/powersupply>.

System Fans

	Non-redundant	Redundant
When 1 Processor is selected	4 fans	8 fans
When 2 Processors are selected	5 fans	10 fans

NOTE: 1P models typically ship with 4 standard fans. The second processor option kit contains 1 additional fan.

NOTE: HP Apollo 4200 Gen9 Redundant Fan Kit (806562-B21) will ship 5 fans for redundant function

Interfaces

Video	1 rear VGA
FlexibleLOM Network Ports	2 x 1Gb ports shipping standard with optional FlexibleLOM
HP iLO Remote Management Network Port	Shared (Optional 1 Gb Dedicated port 806565-B21)
Micro SD Slot	1 Micro SD
USB 2.0	1 front
USB 3.0	2 rear, 1 internal

Operating Systems and Virtualization

Software Support for ProLiant Servers

[Microsoft Windows Server](#)
[Canonical Ubuntu](#)
[Red Hat Enterprise Linux \(RHEL\)](#)
[SUSE Linux Enterprise Server \(SLES\)](#)
[VMware](#)

NOTE: For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: <http://www.hp.com/go/ossupport> and our driver download page: <http://www.hp.com/support/HPApollo4200Gen9Server/docs>.

Standard Features

Upgradeability

Upgradeable to two processors (36 Cores)

NOTE: Processor upgrade available from Intel® Xeon® Processors E5-2600v3. Please contact HP Technology Sales (<http://www.hp.com/support>), your local HP Re-seller.

- Up to 16 DIMM slots available for higher Memory capacity
- FlexibleLOM connector for 1 Gigabit or 10 Gigabit networking options
- HP Flexible Smart Array or Smart HBA Controllers
- Embedded rear 6-Port SATA, B140i as standard
- Optional 2 PCIe slot riser (x8, x8)

NOTE: To utilize PCIe slots 3 and 4, riser kit must be purchased

NOTE: To take advantage of the additional 3 PCIe slot upgrade, the second processor must be installed.

Optional 4LFF kit in rear or 2 SFF kit option

Redundant Power Supply

Industry Standard Compliance

ACPI 2.0b Compliant

PCIe 3.0 Compliant

PXE Support

WOL Support

Microsoft® Logo certifications

USB 3.0 Support

USB 2.0 Support

UEFI (Unified Extensible Firmware Interface Forum)

NOTE: UEFI is the default for the HP Apollo 4200 Gen9. Legacy model can be selected in the field.

Graphics

Integrated Matrox G200eH2 video standard with 16MB of Video RAM

- 1280 x 1024 (32 bpp)
- 1920 x 1200 (16 bpp)

HP iLO 4 On System Management Memory

- 16 MB Flash
- 128 MB DDR3

HP Server UEFI/Legacy ROM**HP Server UEFI /Legacy ROM**

Unified Extensible Firmware Interface (UEFI) is an industry standard that provides better manageability and more secured configuration while interacting with your server at boot time. HP Gen9 platform defaults to UEFI and can be field configured for Legacy BIOS Boot Mode.

NOTE: The UEFI System Utilities function is analogous to the HP ROM-Based Setup Utility (RBSU) of legacy BIOS. For more information, please visit <http://www.hp.com/go/proliantuefi/docs>.

UEFI enables numerous new capabilities specific to HP servers such as:

- Secure Boot
- Operating system specific functionality
- Support for > 2.2 TB (using GPT) boot drives
- USB 3.0 Stack
- Embedded UEFI Shell
- Mass Configuration Deployment Tool using HP RESTful API.
- PXE boot support for IPv6 networks
- Boot support for option cards that only support a UEFI option ROM

For more information please visit <http://www.hp.com/go/proliant/uefi>.

NOTE: For UEFI Boot Mode, boot environment and OS image installations should be configured properly to support UEFI.

Standard Features

Form Factor

2U Rack form factor
LFF and SFF Drive Bay Versions:
3.44 in x 17.63 in x 32 in (8.75cm x 44.8 cm x 81.28 cm)
NOTE: Dimensions without bezel.

Security

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

Warranty

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP 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 HP Care Pack 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, 1-Year Labor, 1-Year Onsite 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 HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at: <http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>.

Optional Features

Embedded Management	iLO Advanced	HP iLO Advanced licenses offer smart remote functionality without compromise, for all HP ProLiant servers. The license includes the full integrated remote console, virtual keyboard, video, and mouse (KVM), multi-user collaboration, console record and replay, and GUI-based and scripted virtual media and virtual folders. You can also activate the enhanced security and power management functionality. Learn more about HP iLO Advanced at http://www.hp.com/go/iloadvanced
Server Management	HP Insight Control	HP Insight Control, lets you 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 .
	HP Insight Cluster Management Utility (CMU)	HP Insight Cluster Management Utility is a hyperscale-optimized management framework that includes software for the provisioning, control, performance management and monitoring of groups of nodes and infrastructure. Learn more at http://www.hp.com/go/cmu .
Rack and Power Infrastructure	HP Rack and Power Infrastructure products and services create highly efficient and intelligent solutions for existing or new IT data centers. HP Rack and Power infrastructure solutions – rack infrastructure, power protection and management, performance optimized data centers (PODs) – are the foundation you are looking for to help secure your long-term IT success. These products are designed to help you react to changes in the industry. They deliver efficient, easy-to-use capabilities to manage, monitor, deploy and provision infrastructure from entry to enterprise. As an industry leader, HP is uniquely positioned to address the key concerns of power, cooling, cable management and system access. Learn more at HP Rack and Power Infrastructure .	
High Performance Clusters	HP 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 . NOTE: High Performance Computing (HPC) interconnect technologies are available for this server as part of the HP Cluster Platform portfolio. These high-speed InfiniBand and Gigabit interconnects are fully supported by HP when integrated within an HP cluster. Flexible, validated solutions can be defined with the help of configuration tools. http://www.hp.com/techservers/clusters/ucp/index.html .	
HPC Interconnects	NOTE: High Performance Computing (HPC) interconnect technologies are available for this server under the HP Cluster Platform product portfolio. These high-speed interconnects are fully supported by HP when they are part of these configure to order clusters. Solutions can be defined with a lot of flexibility with the help of configuration tools. Please visit the following URL to configure HPC Clusters with InfiniBand Interconnects: http://www.hp.com/techservers/clusters/ucp/index.html .	

Whether you need to solve a specific data protection, archiving, or storage command and control challenge, or deliver on strategic consolidation, compliance, or continuity initiatives, look no further than HP storage software. Our storage software helps you reduce costs, simplify storage infrastructure, protect vital assets and respond faster to business opportunities.

Storage software that gets the job done:

- **Data Protection and Recovery Software**
Whether you're a large enterprise or a smaller business, HP data protection and recovery software will cost-effectively protect you against disaster and ensure business continuity.
- **Data Archive and Migration Software**
HP's storage software enables you to comply with data retention and retrieval requirements, improve application performance, and reduce costs by efficiently migrating infrequently accessed or less valuable data to lower cost storage.

Optional Features

- **Storage Resource Management Software (SRM)**

HP's storage resource management software reduces operational costs and provides the command and control foundation you need to efficiently manage and visualize your physical and virtual environments.

- **Data Replication Software**

HP offers array-based and host-based replication software for use in disaster recovery, testing, application development and reporting.

- **Storage Device Management Software**

Maximize your investment in HP storage and networking with software that enables hardware-specific configuration, performance tuning and connectivity management.

- **HP StoreVirtual VSA**

With HP StoreVirtual VSA you can use the power of virtualization to create a virtual array within your host server. Manage it as a single pool of shared storage capacity, and scale it to match your evolving needs. HP ProLiant Gen9 servers include a 3-year limited license for HP StoreVirtual VSA software with 1TB of capacity at no extra cost. Simply select to install HP StoreVirtual VSA software during server setup within Intelligent Provisioning. More information, instructional videos, and free console management software are available at <http://www.hp.com/go/vsa1TB>.

NOTE: For more information about Storage Software including QuickSpecs, please see: <http://www.hp.com/go/storage/software>.

One Config Simple (SCE)

SCE is a guided self-service tool to help sales and non-technical people provide customers with initial configurations in 3 to 5 minutes. You may then send the configuration on for configuration help, or use in your existing ordering processes. If you require "custom" rack configuration or configuration for products not available in SCE, please contact HP's Customer Business Center or an Authorized Partner for assistance. <http://www.hp.com/products/configurator>.

Service and Support

HP Technology Services HP Technology Services delivers confidence, reduces risk and helps customers realize agility and stability. Connect to HP 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 HP Care Pack Services HP Care Pack 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.

Connect your devices to HP: Unlock all of the benefits of your technology investment by connecting your products to HP. Achieve up to 77% reduction in down time, near 100% diagnostic accuracy and a single consolidated view of your environment. By connecting, you will receive 24x7 monitoring, pre-failure alerts, automatic call logging, and automatic parts dispatch. HP Proactive Care Service and HP Datacenter Care Service customers will also benefit from proactive activities to help prevent issues and increase optimization. All of these benefits are already available to you with your server storage and networking products, securely connected to HP support.

Optimized Support recommendation **HP Proactive Care with 24x7 coverage, three year Care Pack Service**
HP Proactive Care helps prevent problems and stabilize IT by utilizing secure, real-time, predictive analytics and proactive consultations when your products are connected to HP. This Care Pack Service combines three years' proactive reporting and advice with our 24x7 coverage and enhanced escalation management, four hour hardware response time and two hour call back for software questions on leading industry standard software running on your HP ProLiant server. <http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

Standard Support recommendation **Foundation Care 24x7, three-year Care Pack Service**
HP Foundation Care 24x7 connects you to HP 24 hours a day, seven days a week for assistance on resolving issues. Hardware onsite response within four hours if needed; collaborative software included in this Care Pack service provides troubleshooting assistance on industry leading software running on your HP server. Simplify your support experience and make HP your first call for hardware or software questions.

<http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

Basic Support Recommendation **Foundation Care NBD, three-year Care Pack Service**
HP Foundation Care Next Business Day connects you to HP during business hours for assistance on resolving issues – features next business day hardware onsite response if needed and software call back within two hours. Collaborative software support is included and provides troubleshooting assistance on industry leading software running on your server. Simplify your support experience and make HP your first call for hardware or software questions.

<http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

Related Services **Data Center Platform Consulting Services**
These services help modernize key systems and leverage new technology to support a changing business climate and prepare you for the new style of IT. HP understands the needs of the data center of the future and will serve as your guide for the journey. <http://www.hp.com/services/consulting>

Data Privacy Services
Protect your data through better media management. HP Data privacy services help manage and protect sensitive data. <http://www.hp.com/services/dataprivacy>

Factory Express for Servers and storage
HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Choose how your factory solutions are built, tested, integrated, shipped and deployed. <http://www.hp.com/go/factory-express>

Service and Support

Parts and Materials HP will provide HP-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 HP due to malfunction.

Pre-configured Models

For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

1. Pre-configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.
2. HP does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.
3. If you desire a custom configuration please see "Configuration Information - Factory Integrated Models" section of this QuickSpecs.
4. Not all models are available in all regions. Check with your local country HP offices for availability.

NOTE: All Pre-configured Models come populated with some hard drive blanks installed. Should the customer need additional hard drive blanks, they can order more using either P/N 666987-B21: HP SFF Hard Drive Blank Kit or P/N 807878-B21: HP LFF Hard Drive Blank Kit.

NOTE: All pre-configured servers ship with a standard 6-foot IEC C-13/C-14 jumper cord (A0K02A). This jumper cord is also included with each standard AC power supply option kit. If a different power cord is required, please check the [ProLiant Power Cables](#) web page.

Caution: HP recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.

	BTO SFF Model	BTO LFF Model
[SKU Number]	806357-B21	806356-B21
Model Name	HP Apollo 4200 Gen9 E5-2620v3 SFF Server	HP Apollo 4200 Gen9 E5-2620v3 LFF Server
Processor	Intel® Xeon® E5-2620v3	Intel® Xeon® E5-2620v3
Number of Processors	One	
Memory	16GB (1x16GB Registered DIMMs, 2133 MHz) NOTE: with the E5-2620v3 this memory DIMM will only operate at 1866MHz	16GB (1x16GB Registered DIMMs, 2133 MHz) NOTE: with the E5-2620v3 this memory DIMM will only operate at 1866MHz
Network Controller	HP Embedded 1Gb Ethernet 2-port 361i Adapter	
Storage Controller	HP Flexible Smart Array P840ar/2G Controller	HP Flexible Smart Array P840ar/2G Controller
Hard Drive	None ship standard 22SFF hard drive blanks	None ship standard 10 LFF hard drive blanks
Internal Storage	48 SFF HDD Bays	28 LFF HDD Bays
PCI-Express Slots	2 PCIe slots and FlexibleLOM (+3 PCIe slots available with upgrade to second processor and optional 2 FHHL slots available with purchase of 2SFF and 2FHHL Rear Cage Kit)	2 PCIe slots and FlexibleLOM (+3 PCIe slots available with upgrade to second processor)
Power Supply	(1) HP 1400W Flex Slot Platinum Power Supply	(1) HP 1400W Flex Slot Platinum Power Supply
Fans	4 fans	4 fans
Management	iLO Management (standard), Intelligent Provisioning (standard), iLO Advanced (optional), Insight Control (optional)	
Form Factor	Rack (2U)	Rack (2U)
Warranty	Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response	

NOTE: UEFI is the standard default for all Predefined models

Country Code Key

xx1 = B21

Worldwide

NOTE: The -B21 WW SKU is to be ordered in all countries other than Japan or PRC.

xx1 = 291

Japan

xx1 = AA1

PRC

Configuration Information - Factory Integrated Models

This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.

1. Factory Integrated Models must start with a CTO Server.
2. FIO indicates that this option is only available as a factory installable option.
3. All Factory Integrated Models will be populated with sufficient hard drive blanks based on the number of initial hard drives ordered with the server.
4. Some options may not be integrated at the factory. Contact your local sales representative for additional information.

Step 1: Base Configuration (choose one of the following configurable models)

[Chassis]	HP Apollo 4200 Gen9 LFF CTO Server	HP Apollo 4200 Gen9 SFF CTO Server
SKU Number	808027-B21	808028-B21
Processor	2 (optional) x HP Smart Socket Guide	
DIMM Slots	16 DIMM slots for RDIMM, LRDIMM DDR4 Memory	
Storage Controller	HP Smart Array P840ar, plus HP Dynamic Smart Array B140i , optional HP Flexible Smart Array or Smart HBA controller	
PCIe	2 PCIe slots and FlexibleLOM (Plus FHHL Riser option+3 PCI slots available with upgrade to second processor)	
Drive Cage	24 LFF Hot Plug and optional 4LFF Rear Cage Kit	48 SFF Hot Plug and optional 2 SFF Rear Cage Kit
Network Controller	HP Embedded 1Gb Ethernet 2-port 361i Adapter, plus optional HP FlexibleLOM or stand up card	
Fans	4 fans standard for 1P, 5 fans standard for 2P, plus redundant fan option	4 fans standard for 1P, 5 fans standard for 2P, plus redundant fan option
Management	iLO Management (standard), Intelligent Provisioning (standard), iLO Advanced (optional), Insight Control (optional)	
USB	2 rear, 1 internal	2 rear, 1 internal

Step 2: Choose Required Options (only one of the following from each list unless otherwise noted)

HP Processors

Select one or two processors from Core options-Processor section below,

- If one processor is desired, select one xxxxxx-L21
- If two processors are desired, select one xxxxxx-L21 and one xxxxxx-B21.
- Up to 2 processors supported. Mixing different processor models is not supported.
- DDR4 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

For the Intel® C600 Chipset E5-2600 Series, the letter preceding the model number indicates the Product Line (E3, E5, E7); 2600x v#, 2 = number of CPUs in a Node, 6 is socket/segment designation, 00 = Processor SKU, x = L for low power SKUs and v# (not yet designated) = version number.

Configuration Information - Factory Integrated Models

HP Memory

Select one or more memory from Core options-Memory section below,

- LRDIMM, RDIMM are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen9 servers support LRDIMM and RDIMM.
- HP memory from previous generation servers are not qualified or warranted with this HP ProLiant Server. HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen9.
- If only one processor is installed, only half of the total DIMM slots are available. When populating with two processors all DIMM slots are available.
- Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: <http://www.hp.com/go/proliant-energy-efficient>.
- Depending on the memory configuration and processor model, the memory speed may run at 2133MHz, 1866MHz, 1600MHz or 1333MHz. Please see Memory Population Table or the Online Memory Configuration Tool at: <http://www.hp.com/go/ddr4config>

HP Power Supplies

Select one or more power supplies from Core Options-Power Supplies section below:

- Prior to selecting a power supply option, it is highly recommended that you review your server configuration in the HP Power Advisor tool to determine the right size power supply for your server configuration. The HP Power Advisor is located at: <http://www.hp.com/go/hppoweradvisor>.
- Mixing of power supplies in the same server is not supported. All power supplies must be of the same input voltage, output rating, and efficiency rating. If non-matching power supplies are installed, you may receive an error message and/or experience operational issues with your server.

Step 3: Choose Additional Factory Integrable Options

HP Unique Options

Select one or more Unique options from Core options section below.

- This section may contain FIO options, please see the Unique options section below.
- FIO indicates that this option is only available as a factory installable option.

HP I/O Expansion Options

Select Riser Kit options from Core options section below.

- To take advantage of the additional PCI slot upgrade, the second processor must be installed.
- This section may contain FIO options, please see HP I/O Expansion Options section below.
- FIO indicates that this option is only available as a factory installable option.

HP Drives

Select one or more drives from Core options-HP Drives section below:

- The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.
- Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.
- The HP ProLiant Gen9 Smart Storage solutions are equipped with re-designed Small Form Factor (SFF 2.5 in) and Large Form Factor (LFF 3.5 in) hot plug carriers for HP Qualified Hard Drives and Solid State Drives. These new carriers provide status and activity indicators as well as caution indicators for "Do Not Remove".

HP Flexible LOM

Select a FlexibleLOM from Core options-Networking section below,

- Only one FlexibleLOM can be added to the server. These options are upgradeable and can be changed from the original configuration after the server is shipped.
- For 10Gb adapters, a minimum of two Gigabytes (2 GB) of server memory is required per each adapter.

Configuration Information - Factory Integrated Models

- Please see the QuickSpecs for Technical Specifications and additional information: <http://www.hp.com/go/ProLiantNICs>.

HP Networking

Select a standup NIC adapter from Core options-Networking section below,

- Please see the QuickSpecs for Technical Specifications and additional information: <http://www.hp.com/go/ProLiantNICs>.
- These options are upgradeable and can be changed from the original configuration after the server is shipped.
- For 10Gb adapters, a minimum of two Gigabytes (2 GB) of server memory is required per each adapter.

HP Storage Controllers Select one or more Storage options from Additional options section below.

- The P840ar will be embedded by default in the server chassis.
- The embedded B140i controller will operate in UEFI only mode. Legacy model can be selected in the field.
- This section may contain FIO options, please see HP Storage Controllers section below.
- FIO indicates that this option is only available as a factory installable option.

Optional Software

HP SmartCache No Media 24x7 Technical Support 1 Svr License	D7S26A
HP SmartCache No Media 24x7 Technical Support Flexible License	D7S27A
HP SmartCache No Media 24x7 Technical Support Electronic License	D7S27AAE

NOTE: HP SmartCache is supported when one of the supported Smart Array Controllers is installed in the server.

NOTE: HP SmartCache comes standard (no licensing is required) if the HP Smart Array P840 Controller is installed in the server.

HP Cooling Options

Select Fan Kit from Core options section below.

- This section may contain FIO options, please see HP Cooling Options section below.
- FIO indicates that this option is only available as a factory installable option.
- Redundant fan kit available (806562-B21) to reach up to 5 fans. However, 1P and 2P redundant SKUs are coupled with 8 fans and 10 fans respectively
- Fan count is shown below :
- 1P non-redundant : 4 fans
- 2P non-redundant : 5 fans
- 1P redundant : 8 fans
- 2P redundant : 10 fans

HP Rail Kits

Select one type of rail kit from Additional options section below.

- Please take a moment to review the installation documentation that comes with the server to help you with the installation of your Gen9 server.
- To assist in the installation of the server into the rack, an optional installation tool is available by contacting your local services representative (822731-B21).
- See HP Rack Options in Additional Options section of this QuickSpecs for more rack kit choices.

Caution: HP recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.

Core Options

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

HP Unique Options	<p>HP Apollo 4200 Gen9 LFF Rear HDD Cage Kit 806563-B21</p> <p>NOTE: The LFF Rear HDD cage kit supports an additional four LFF drives. NOTE: The LFF Rear HDD cage only applies to the LFF model.</p> <p>HP Apollo 4200 Gen9 2SFF and 2FHHL Kit 806564-B21</p> <p>NOTE: This part supports an additional 2SFF drives and a riser that supports 2 full-height half-length PCIe slots. NOTE: To access PCIe slots 3-4, this above 2FF and 2FHHL Kit kit must be purchased NOTE: Using optional FHHL kit (PN: 806564-B21), the two PCIe slots 3-4 are available by using slot 2 as a standup expansion slot.</p> <p>Caution: Do not operate the server with any of the rear drive cage bays empty. To maintain proper airflow and sufficient cooling in the rear drive cage, all drive bays in this cage should have a drive or a drive blank. HP recommends installing at least one drive in the rear drive cage before operating the Apollo 4200.</p> <p>HP Apollo 4200 Gen9 Redundant Fan Kit 806562-B21</p> <p>NOTE: For 1 processor configurations, the HP Apollo 4200 Gen9 Redundant Fan Kit (806562-B21) will ship 4 additional fans, for a total of 8 fans. For 2 processor configurations, the HP Apollo 4200 Gen9 Redundant Fan Kit (806562-B21) will ship 5 fans for redundant function</p> <p>HP 2U Shelf-Mount Adjustable Rail Kit 822731-B21</p> <p>HP Apollo 4200 Gen9 Strap Shipping Bracket 822640-B21</p> <p>NOTE: This part is used for shipping that is integrated in a rack.</p> <p>HP Apollo 4200 Gen9 IM Card Kit 806565-B21</p> <p>NOTE: This is a management module for the Apollo 4200 Gen9 Server to provide a rear dedicated 1Gb management port.</p>
HP Processors	<p>18-Core Processors</p> <p>HP Apollo 4200 Gen9 Intel® Xeon® E5-2699v3 (2.3GHz/18-core/45MB/145W) Processor Kit 821792-B21</p> <p>HP Apollo 4200 Gen9 Intel® Xeon® E5-2699v3 (2.3GHz/18-core/45MB/145W) FIO Processor Kit 821792-L21</p> <p>16-Core Processors</p> <p>HP Apollo 4200 Gen9 Intel® Xeon® E5-2698v3 (2.3GHz/16-core/40MB/135W) FIO Processor Kit 803319-L21</p> <p>NOTE: FIO indicates factory integrated option via CTO.</p> <p>HP Apollo 4200 Gen9 Intel® Xeon® E5-2698v3 (2.3GHz/16-core/40MB/135W) Processor Kit 803319-B21</p> <p>14-Core Processors</p> <p>HP Apollo 4200 Gen9 Intel® Xeon® E5-2697v3 (2.6GHz/14-core/35MB/145W) FIO Processor Kit 821791-L21</p> <p>NOTE: FIO indicates factory integrated option via CTO.</p> <p>HP Apollo 4200 Gen9 Intel® Xeon® E5-2697v3 (2.6GHz/14-core/35MB/145W) Processor Kit 821791-B21</p> <p>HP Apollo 4200 Gen9 Intel® Xeon® E5-2695v3 (2.3GHz/14-core/35MB/120W) FIO Processor Kit 803318-L21</p> <p>NOTE: FIO indicates factory integrated option via CTO</p> <p>HP Apollo 4200 Gen9 Intel® Xeon® E5-2695v3 (2.3GHz/14-core/35MB/120W) Processor Kit 803318-B21</p> <p>HP Apollo 4200 Gen9 Intel® Xeon® E5-2683v3 (2GHz/14-core/35MB/120W) FIO Processor Kit 803315-L21</p> <p>NOTE: FIO indicates factory integrated option via CTO.</p> <p>HP Apollo 4200 Gen9 Intel® Xeon® E5-2683v3 (2GHz/14-core/35MB/120W) Processor Kit 803315-B21</p>

Core Options

12-Core Processors

HP Apollo 4200 Gen9 Intel® Xeon® E5-2690v3 (2.6GHz/12-core/30MB/135W) FIO Processor Kit	803317-L21
NOTE: FIO indicates factory integrated option via CTO	
HP Apollo 4200 Gen9 Intel® Xeon® E5-2690v3 (2.6GHz/12-core/30MB/135W) Processor Kit	803317-B21
HP Apollo 4200 Gen9 Intel® Xeon® E5-2680v3 (2.5GHz/12-core/30MB/120W) FIO Processor Kit	803314-L21
NOTE: FIO indicates factory integrated option via CTO.	
HP Apollo 4200 Gen9 Intel® Xeon® E5-2680v3 (2.5GHz/12-core/30MB/120W) FIO Processor Kit	803314-L21
HP Apollo 4200 Gen9 Intel® Xeon® E5-2670v3 (2.3GHz/12-core/30MB/120W) FIO Processor Kit	803313-L21
NOTE: FIO indicates factory integrated option via CTO.	
HP Apollo 4200 Gen9 Intel® Xeon® E5-2670v3 (2.3GHz/12-core/30MB/120W) Processor Kit	803313-B21
HP Apollo 4200 Gen9 Intel® Xeon® E5-2650Lv3 (1.8GHz/12-core/30MB/65W) FIO Processor Kit	803309-L21
NOTE: FIO indicates factory integrated option via CTO.	
HP Apollo 4200 Gen9 Intel® Xeon® E5-2650Lv3 (1.8GHz/12-core/30MB/65W) Processor Kit	803309-B21

10-Core Processors

HP Apollo 4200Gen9 Intel® Xeon® E5-2660v3 (2.6GHz/10-core/25MB/105W) FIO Processor Kit	803311-L21
NOTE: FIO indicates factory integrated option via CTO	
HP Apollo 4200Gen9 Intel® Xeon® E5-2660v3 (2.6GHz/10-core/25MB/105W) Processor Kit	803311-B21
HP Apollo 4200Gen9 Intel® Xeon® E5-2650v3 (2.3GHz/10-core/25MB/105W) FIO Processor Kit	803310-L21
NOTE: FIO indicates factory integrated option via CTO	
HP Apollo 4200Gen9 Intel® Xeon® E5-2650v3 (2.3GHz/10-core/25MB/105W) Processor Kit	803310-B21

8-Core Processors

HP Apollo 4200 Gen9 Intel® Xeon® E5-2667v3 (3.2GHz/8-core/20MB/135W) FIO Processor Kit	803312-L21
NOTE: FIO indicates factory integrated option via CTO.	
HP Apollo 4200 Gen9 Intel® Xeon® E5-2667v3 (3.2GHz/8-core/20MB/135W) Processor Kit	803312-B21
HP Apollo 4200 Gen9 Intel® Xeon® E5-2640v3 (2.6GHz/8-core/20MB/90W) FIO Processor Kit	803308-L21
NOTE: FIO indicates factory integrated option via CTO.	
HP Apollo 4200 Gen9 Intel® Xeon® E5-2640v3 (2.6GHz/8-core/20MB/90W) Processor Kit	803308-B21
HP Apollo 4200 Gen9 Intel® Xeon® E5-2630Lv3 (1.8GHz/8-core/20MB/55W) FIO Processor Kit	803305-L21
NOTE: FIO indicates factory integrated option via CTO.	
HP Apollo 4200 Gen9 Intel® Xeon® E5-2630Lv3 (1.8GHz/8-core/20MB/55W) Processor Kit	803305-B21
HP Apollo 4200 Gen9 Intel® Xeon® E5-2630v3 (2.4GHz/8-core/20MB/85W) FIO Processor Kit	803306-B21
NOTE: FIO indicates factory integrated option via CTO.	
HP Apollo 4200 Gen9 Intel® Xeon® E5-2630v3 (2.4GHz/8-core/20MB/85W) Processor Kit	803306-L21

6-Core Processors

HP Apollo 4200 Gen9 Intel® Xeon® E5-2643v3 (3.4GHz/6-core/20MB/135W) FIO Processor Kit	803301-L21
NOTE: FIO indicates factory integrated option via CTO.	
HP Apollo 4200 Gen9 Intel® Xeon® E5-2643v3 (3.4GHz/6-core/20MB/135W) Processor Kit	803301-B21
HP Apollo 4200 Gen9 Intel® Xeon® E5-2620v3 (2.4GHz/6-core/15MB/85W) FIO Processor Kit	803300-L21
NOTE: FIO indicates factory integrated option via CTO	
HP Apollo 4200 Gen9 Intel® Xeon® E5-2620v3 (2.4GHz/6-core/15MB/85W) Processor Kit	803300-B21

Core Options

HP Apollo 4200 Gen9 Intel® Xeon® E5-2609v3 (1.9GHz/6-core/15MB/85W) FIO Processor Kit 803303-L21
NOTE: FIO indicates factory integrated option via CTO.

HP Apollo 4200 Gen9 Intel® Xeon® E5-2609v3 (1.9GHz/6-core/15MB/85W) Processor Kit 803303-B21

HP Apollo 4200 Gen9 Intel® Xeon® E5-2603v3 (1.6GHz/6-core/15MB/85W) FIO Processor Kit 803302-L21

HP Apollo 4200 Gen9 Intel® Xeon® E5-2603v3 (1.6GHz/6-core/15MB/85W) Processor Kit 803302-B21

4-Core Processors

HP Apollo 4200 Gen9 Intel® Xeon® E5-2637v3 (3.5GHz/4-core/15MB/135W) Processor Kit 803307-B21

HP Apollo 4200 Gen9 Intel® Xeon® E5-2637v3 (3.5GHz/4-core/15MB/135W) FIO Processor Kit 803307-L21
NOTE: FIO indicates factory integrated option via CTO.

HP Apollo 4200 Gen9 Intel® Xeon® E5-2637v3 (3.0GHz/4-core/15MB/135W) Processor Kit 803304-B21

HP Apollo 4200 Gen9 Intel® Xeon® E5-2637v3 (3.0GHz/4-core/15MB/135W) FIO Processor Kit 803304-L21
NOTE: FIO indicates factory integrated option via CTO.

NOTE: Up to 2 processors supported.

NOTE: DDR4 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

NOTE: The xxxxxx-L21 is the first processor shipped, the xxxxxx-B21 is the 2nd processor and ships with 1 additional FAN for factory of field installation.

HP Memory

Registered DIMMs (RDIMMs) for E5-2600v3 Series

NOTE: The following memory is supported by the E5-2600v3 series Processors.

HP 32GB (1x32GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit 728629-B21

HP 4GB (1x4GB) Single Rank x8 DDR4-2133 CAS-15-15-15 Registered Memory Kit 726717-B21

HP 8GB (1x8GB) Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit 726718-B21

HP 8GB (1x8GB) Dual Rank x8 DDR4-2133 CAS-15-15-15 Registered Memory Kit 759934-B21

HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit 726719-B21

NOTE: Depending on Processor selected this memory will run at 1600, 1866 or 2133MHz.

Load Reduced DIMMs (LRDIMMs) for E5-2600v3 Series

NOTE: The following memory is supported by the E5-2600v3 series Processors.

HP 32GB (1x32GB) Quad Rank x4 DDR4-2133 CAS-15-15-15 Load Reduced Memory Kit 726722-B21

HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Load Reduced Memory Kit 726720-B21

NOTE: Depending on Processor selected this memory will run at 1600, 1866 or 2133MHz.

HP Drives

SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives

HP 1.2TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 781518-B21

HP 900GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 785069-B21

HP 600GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 759212-B21

HP 600GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 781516-B21

HP 450GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 759210-B21

HP 300GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 759208-B21

HP 300GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 785067-B21

HP 300GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 652564-B21

HP 1.8TB 12G SAS 10K 2.5in SC 512e HDD 791034-B21

SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives

HP 1TB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive 652749-B21

Core Options

HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652745-B21
HP 480GB 6G SATA Value Endurance LFF 3.5-in LPC Enterprise Value 3yr Wty Solid State Drive	797303-B21
6G SATA Light Endurance Hot Plug LFF (3.5-inch) Enterprise Light Solid State Drives	
960GB 6G SATA Light Endurance LFF 3.5-in LPC Enterprise Light 3yr Wty Solid State Drive	797305-B21
	797289-B21
	797291-B21
HP 800GB 12G SAS Value Endurance LFF 3.5-in LPC Enterprise Performance 3yr Wty Solid State Drive	797299-B21
HP 1.6TB 12G SAS Value Endurance LFF 3.5-in LPC Enterprise Performance 3yr Wty Solid State Drive	797301-B21
12G SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives	
HP 300GB 12G SAS 15K rpm LFF (3.5-inch) Low Profile C Enterprise 3yr Warranty Hard Drive	797285-B21
HP 450GB 12G SAS 15K rpm LFF (3.5-inch) Low Profile C Enterprise 3yr Warranty Hard Drive	797287-B21
HP 600GB 12G SAS 15K rpm LFF (3.5-inch) Low Profile C Enterprise 3yr Warranty Hard Drive	797283-B21
SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives	
HP 8TB 12G SAS 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive	805337-B21
HP 6TB 6G SAS 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive	797263-B21
HP 4TB 6G SAS 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive	797267-B21
HP 3TB 6G SAS 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive	797277-B21
HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive	797279-B21
HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive	797281-B21
SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives	
HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655710-B21
HP 500GB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655708-B21
SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives	
HP 8TB 6G SATA 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty	805334-B21
HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive	797269-B21
HP 4TB 6G SATA 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive	797265-B21
HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive	797271-B21
HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive	797273-B21
HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) Low Profile Midline 1yr Warranty Hard Drive	797275-B21
12G SAS Hot Plug SFF (2.5-inch) Enterprise Value Solid State Drives	
HP 1.6TB 12G SAS Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	762263-B21
HP 800GB 12G SAS Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	762261-B21
6G SATA Hot Plug SFF (2.5-inch) Enterprise Value Solid State Drives	
HP 600GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	739898-B21
HP 300GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	739888-B21
6G SATA Hot Plug SFF Value Endurance (2.5-inch) Enterprise Value G1 Solid State Drives	
HP 480GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty G1 Solid State Drive	756657-B21

Core Options

HP 240GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty G1 Solid State Drive	756636-B21
HP 120GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty G1 Solid State Drive	756621-B21
6G SATA Hot Plug SFF (2.5-inch) Enterprise Light G1 Solid State Drives	
HP 960GB 6G SATA Light Endurance SFF 2.5-in SC Enterprise Light 3yr Wty G1 Solid State Drive	756601-B21
6G SATA Hot Plug SFF (2.5-inch) Enterprise Boot Solid State Drives	
HP 120GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Boot 3yr Wty Solid State Drive	717965-B21
HP 80GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Boot 3yr Wty Solid State Drive	734360-B21
6G SAS (2.5-inch) 512e SC HDD	
HP 1TB 12G SAS 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765464-B21
HP 2TB 12G SAS 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765466-B21
6G SATA (2.5-inch) 512e SC HDD	
HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765453-B21
HP 2TB 6G SATA 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765455-B21
M.2 Solid State Drives	
HP Dual 120GB Value Endurance Solid State M.2 Enablement Kit	777894-B21
HP 120GB Value Endurance Solid State M.2 Enablement Kit	788028-B21
NOTE: M.2 go in PCIe slots and B140i SATA Controller only	
Hard Drive Blank Kits	
HP Large Form Factor Hard Drive Blank Kit	807878-B21
HP Small Form Factor Hard Drive Blank Kit	666987-B21

HP Networking

1 Gigabit Ethernet adapters	
HP Ethernet 1Gb 4-port 331T Adapter	647594-B21
HP Ethernet 1Gb 2-port 332T Adapter	615732-B21
10 Gigabit Ethernet adapters	
HP Ethernet 10Gb 2-port 530T Adapter	656596-B21
HP Ethernet 10G 2-port 546SFP+ Adapter	779793-B21
HP Ethernet 10Gb 2-port 560SFP+ Adapter	665249-B21
HP FlexFabric 10Gb 2-Port 562SFP+ Adapter	727055-B21
HP Ethernet 10Gb 2-port 561T Adapter	716591-B21
NOTE: The HP Apollo 4200 Gen9 chassis ships with 2x1Gb Embedded.	
NOTE: A minimum of two Gigabytes (2 GB) of server memory is required per each adapter.	
NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately. Please see the related NIC QuickSpecs for Technical Specifications and additional information:	
http://www.hp.com/go/ProLiantNICs .	
FlexibleLOM Adapters	
HP Ethernet 1Gb 4-port 366FLR Adapter	665240-B21
HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter	665243-B21
HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter	665243-B21
HP Ethernet 10Gb 2-port 562FLR-SFP+ Adapter	727054-B21
HP Ethernet 10Gb 2P 546FLR-SFP+ Adapter	779799-B21

Core Options

HP I/O Expansion Options	<p>HP Apollo 4200 Gen9 2SFF and 2FHHL Kit</p> <p>NOTE: This riser kit allows for two additional small form factor drives in the rear and two PCIe slots 3-4 are available by using slot 2 as a standup expansion slot</p> <p>NOTE: Using the above kit, PCIe slot 3 and 4 may be populated.</p> <p>NOTE: Slot3: 1x Gen3 x8 FH/FL. Slot 4: 1xGen3 x8 FH/HL.</p>	806564-B21
HP Power Supplies	<p>1 Gigabit Ethernet adapters</p> <p>HP 800W Flex Slot Titanium Hot Plug Power Supply Kit 720482-B21</p> <p>HP 800W Flex Slot Universal Hot Plug Power Supply Kit 720484-B21</p> <p>HP 800W Flex Slot Platinum Hot Plug Power Supply Kit 720479-B21</p> <p>HP 800W Flex Slot -48VDC Hot Plug Power Supply Kit 720480-B21</p> <p>HP 1400W Flex Slot Platinum Plus Hot Plug Power Supply Kit 720620-B21</p> <p>NOTE: All power supplies must be of the same input voltage, output rating, and efficiency rating. If non-matching power supplies are installed, you may receive an error message and/or experience operational issues with your server.</p> <p>NOTE: Prior to selecting a power supply option, it is highly recommended that you review your server configuration in the HP Power Advisor tool to determine the right size power supply for your server configuration. The HP Power Advisor is located at: http://www.hp.com/go/hppoweradvisor.</p> <p>NOTE: The above power supply options are all 80Plus Platinum-certified with an efficiency rating of up to 94%. Support for HP Power Discovery Services is included with the 1400W Flex Slot option. Power specifications and technical content for all HP Server power supplies can be found at http://www.hp.com/go/proliant/powersupply.</p> <p>NOTE: Maximum of 2 Flex Slot PS per platform.</p>	
HP Cooling Options	<p>HP Apollo 4200 Redundant Fan Kit</p> <p>NOTE: The Apollo 4200 Redundant Fan Kit allows the server to reach up to 8 fans using a 1 processor configuration, or 10 total fans using a 2 processors configuration.</p>	806562-B21

Additional Options

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

HP Insight Software	HP Insight Control	
	HP Insight Control including 1yr 24x7 Technical Support and Updates Single Server License	C6N27A
	HP Insight Control including 1yr 24x7 Technical Support and Updates Electronic License	C6N28ABE
	HP Insight Control Server Provisioning Media Kit	BD883A
	HP Insight Management Media Kit	C6N31A
	NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key.	
	NOTE: Customer will receive a license entitlement certificate. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.	
	NOTE: Licenses ship without media. The HP Insight Control Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightupdates .	
	NOTE: For additional license options please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html .	
Embedded Management	HP iLO Advanced	
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	512485-B21
	HP iLO Advanced 1 Server License with 3yr 24x7 Tech Support and Updates	BD505A
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates E-LTU	E6U59ABE
	HP iLO Advanced including 3yr 24x7 Technical Support and Updates E-LTU	E6U64ABE
High Performance Clusters	HP Cluster Management Utility	
	HP Insight Cluster Management Utility 1yr 24x7 Flexible License	QL803B
	HP Insight Cluster Management Utility 3yr 24x7 Flexible License	
	NOTE: These part numbers can be used to purchase one certificate for multiple licenses and support with a single activation key. Each license is for one node (server). Customer will receive a printed end user license agreement and license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online in order to obtain a license key. Customer also will receive a support agreement.	BD476A
	HP Insight Cluster Management Utility Media	BD477A
	NOTE: For additional license kits please see the QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/12612_div/12612_div.html .	
HP Security	HP Trusted Platform Module Option	488069-B21
	NOTE: The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline. For more information about TPM, including a white paper, go to: http://www.hp.com/go/TPM .	
	NOTE: ProLiant OS pre-installed units will come with the partition required for TPM deployment.	
	NOTE: The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.	

Additional Options

HP Storage
Controllers**SAS Controllers****HP Smart Array Controllers**

HP Smart Array P440/4GB FBWC 12Gb 1-port Int SAS Controller 726821-B21

NOTE: Provides support for the SAS/SATA drives in the 2nd HDD cage and its expander.

NOTE: HP P440 Smart Array Controller is only supported in PCIe slot 1.

HP Smart Array P440/4GB FBWC 12Gb 1-port Int FIO SAS Controller 761872-B21

NOTE: Provides support for the SAS/SATA drives in the 2nd HDD cage and its expander.

NOTE: FIO indicates factory integrated option via CTO.

NOTE: HP P440 Smart Array Controller is only supported in PCIe slot 1.

HP Smart Array P441/4G Controller 726825-B21

HP Smart Array P841/4G Controller 726903-B21

NOTE: HP P841 Smart Array Controller is only supported in PCIe slot 3 or PCIe slot 4. To utilize these slots, a 2 SFF and 2 FHHL Kit (P/N: 806564-B21) is required.

HP Smart Host Bus Adapters

HP H241 12Gb 2-ports Ext Smart Host Bus Adapter 726911-B21

HP 32GB (1x32GB) Quad Rank x4 DDR4-2133 CAS-15-15-15 Load Reduced Memory Kit 726722-B21

Optional Software

HP Secure Encryption No Media Flexible License per Drive D8S84A

HP Secure Encryption No Media E-LTU per Drive

NOTE: HP Secure Encryption is supported when one of the supported Smart Array Controllers or the supported Smart SAS HBA (configured in the RAID mode) is installed in the server.

HP Secure Encryption licensing is based on the number of physical drives requiring encryption

NOTE: For more information about HP Secure Encryption, go to

<http://www.hp.com/go/hpsecureencryption>

D8S85AAE

HP SmartCache No Media 24x7 Technical Support 1 Svr License D7S26

HP SmartCache No Media 24x7 Technical Support Flexible License D7S27A

HP SmartCache No Media 24x7 Technical Support Electronic License

NOTE: HP SmartCache is supported when one of the supported Smart Array Controllers is installed in the server

NOTE: HP SmartCache comes standard (no licensing is required) if the HP Smart Array P840 is installed in the server.

D7S27AAE

HP USB Keyboard and Mouse

HP USB BFR with PVC Free US Keyboard/Mouse Kit 631341-B21

HP USB BFR with PVC Free UK Keyboard/Mouse Kit 631344-B21

HP USB BFR with PVC Free FR Keyboard/Mouse Kit 631346-B21

HP USB BFR with PVC Free ES Keyboard/Mouse Kit 631348-B21

HP USB BFR with PVC Free DE Keyboard/Mouse Kit 631358-B21

HP USB BFR with PVC Free JP Keyboard/Mouse Kit 631360-B21

HP USB BFR with PVC Free IT Keyboard/Mouse Kit 631362-B21

HP USB BFR with PVC Free CN Keyboard/Mouse Kit 631364-B21

HP USB BFR with PVC Free AE Keyboard/Mouse Kit 638212-B21

HP USB BFR with PVC Free RU Keyboard/Mouse Kit 638214-B21

HP USB BFR with PVC Free IN Keyboard/Mouse Kit 672097-D63

HP Dual 8GB microSD EM USB Kit 741279-B21

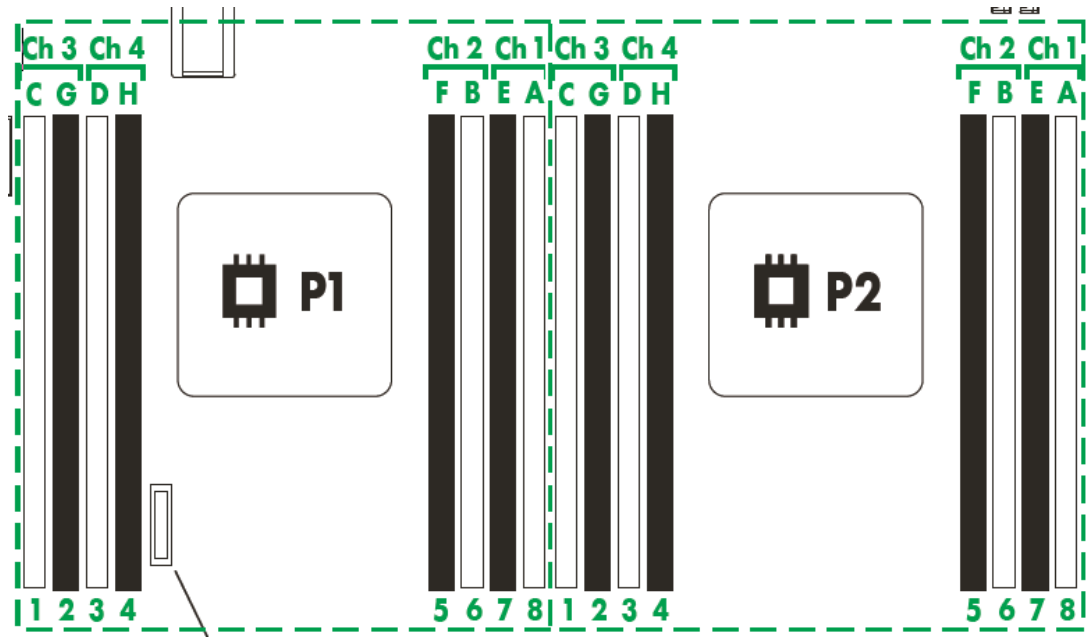
Additional Options

Rail Kits	HP 32GBmicroSDMainstream Flash Media Kit NOTE: Please see the HP USB Keyboard and Mouse QuickSpecs for information on additional options and product specifications.	700139-B21
	NOTE: Rail kits are optional for the HP Apollo 4200 Gen9 CTO Chassis and are no longer included standard with the server. Customers have the option to purchase their server without a rail kit. Caution: HP recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.	
	HP 2U Shelf-Mount Adjustable Rail Kit	822731-B21
<hr/>		
HP USB and SD Options	HP Enterprise Mainstream Flash Media Kits for Memory Cards	
	HP 32GB microSD Enterprise Mainstream Flash Media Kit	700139-B21
	HP 8GB microSD Enterprise Mainstream Flash Media Kit	726116-B21
	HP 8GB USB Enterprise Mainstream Flash Media Drive Key Kit	737953-B21
	HP Dual 8GB microSD EM USB Kit	741279-B21
	HP 3y Nbd Apollo 4200 FC SVC	U8MG4E
	HP 3y Nbd w/DMR Apollo 4200 FC SVC	U8MG5E
	HP 3y Nbd w/CDMR Apollo 4200 FC SVC	U8MG6E
	HP 3y 24x7 Apollo 4200 FC SVC	U8MH3E
	HP 3y 24x7 w/DMR Apollo 4200 FC SVC	U8MH4E
	HP 3y 24x7 w/CDMR Apollo 4200 FC SVC	U8MH5E
	HP 3y 24x7 Apollo 4200 PC SVC	U8MH6E
	HP 3y 24x7 w/DMR Apollo 4200 PC SVC	U8MH7E
	HP 3y 24x7 w/CDMR Apollo 4200 PC SVC	U8MH8E
	Install Service	UM857E
	Startup Service	UM858E

Memory

Memory Subsystem Architecture

Each Intel® Xeon® E5-2600v3 family processor socket contains four memory channels per installed processor with two DIMMs per channel for a total of eight (8) DIMMs or a grand total of sixteen (16) DIMMs for the server.



Memory Population guidelines

DIMM configuration

NOTE: This information is for Advanced ECC memory mode only. If operating in other modes, see the user guide.

Key: Alpha – population order
 Numeric – DIMM slot ID for spare replacement

Before installing DIMMs, review the following population guidelines:

- Install DIMMs only if the corresponding processor is installed.
- When two processors are installed, balance the total capacity of the DIMMs across the two processors.
- White DIMM slots denote the first slot of a channel (Ch 1-A, Ch 2-B, Ch 3-C, Ch 4-D).
- Do not mix RDIMMs and LRDIMMs in the same system.

When only one processor is installed, install DIMMs in sequential alphabetic order: A, B, C, D, E, F, and so forth.

When two processors are installed, install DIMMs in sequential alphabetic order: P1-A, P2-A, P1-B, P2-B, P1-C, P2-C, and so forth.

For DIMM spare replacement, install the DIMMs per slot number as instructed by your system software. These are general DIMM population rules. For specific memory mode population rules, see the server user guide on the HP website (<http://www.hp.com/support/Apollo4200Gen9/docs>).

Memory

General Memory Population Rules and Guidelines:

- White DIMM slots denote the first slot of a channel. For 1 DPC (DIMM per channel) populate white slots only.
- A minimum of one DIMM is required per server.
- Install DIMMs only if the corresponding processor is installed.
- If only one processor is installed in a two processor system, only half of the DIMM slots are available.
- To maximize performance, it is recommended to balance the total memory capacity between all installed processors and to load the channels similarly whenever possible.
- When two processors are installed, balance the DIMMs across the two processors.
- Populate DIMMs from heaviest load (quad-rank) to lightest load (single-rank) within a channel. Heaviest load (DIMM with most ranks) within a channel goes furthest from the processor.
- Do not mix RDIMMs or LRDIMMs.
- LRDIMMs are supported up to 2 DIMMs per channel.
- DIMMs of different speeds may be mixed in any order; the server will select a common optimal speed.
- 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.
- HP memory from previous generation servers is not compatible with the HP Apollo 4200 Gen9 Server. Certain HP SmartMemory features such as memory authentication and enhanced performance may not be supported.
- To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html (Worldwide).
- For memory population rules and additional memory guidelines, please see the HP Apollo 4200 Gen9 user guide at
<http://www.hp.com/support>.
- There are four (4) Memory channels per processor; eight (8) channels per 2 processor server.
- There are two (2) DIMM slots for each memory channel; sixteen (16) total slots for 2 processor server.
- Memory channels 1 and 3 consists of the two (2) DIMMs that are furthest from the processor.
- Memory channel 2 and 4 consists of the two (2) DIMMs that are closest to the processor.

Intel Gen9 Supported Memory Bandwidth for HP ProLiant Gen9 Intel® Xeon® E5-2600v3 Series Processor Family

DIMM Type	Registered DIMMS for E5-2600 v3 Series Processors (RDIMMs)				Load Reduced (LRDIMMs)	
	Single Rank (1R)		Dual Rank (2R)		Dual Rank (2R)	Quad Rank (4R)
DIMM Rank						
DIMM Capacity	4GB	8GB	16GB	32GB	16GB	32GB
DIMM Native Speed (MHz)	2133					
Voltage	Std Voltage 1.2V					
SLOTS THAT CAN BE POPULATED						
16 slot server nodes	16	16	16		16	16
MAXIMUM CAPACITY (GB)*	64	128	256	512	256	512

Memory

Memory Speed by Processor Model

Processor Models	Supported Memory Speeds
E5-2603v3, E5-2609v3,	1600MHz
E5-2620v3, E5-2623v3, E5-2630v3, E5-2630Lv3, E5-2640v3,	1866MHz
E5-2637v3, E5-2643v3, E5-2650v3, E5-2650Lv3, E5-2660v3, E5-2667v3, E5-2670v3, E5-2680v3, E5-2683v3, E5-2690v3, E5-2695v3, E5-2697v3, E5-2698v3, E5-2699v3,	2133MHz

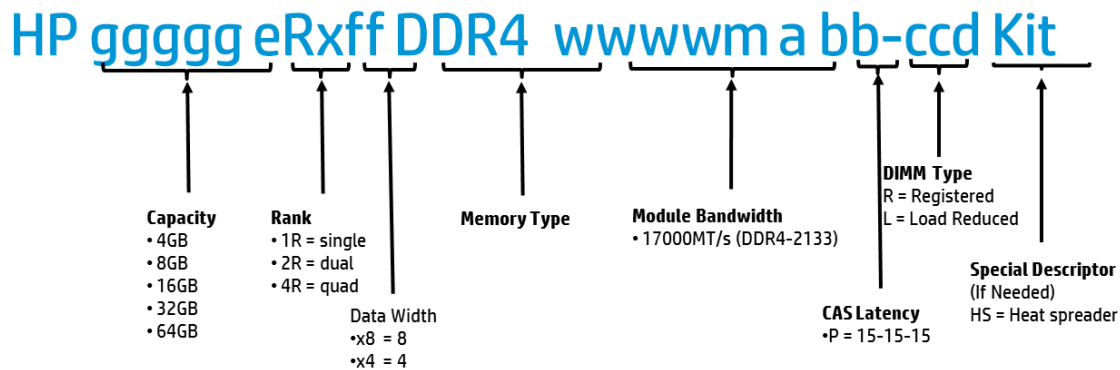
Standard and Maximum Memory Capacity (Pre-configured Models)

Pre-Configured Models	Standard Memory	Maximum Memory Plus Optional Memory	Standard Memory Replaced with Optional Memory
SFF Model	16GB (1x16GB)	496GB (15x32GB, 1x16GB)	512GB (16x32GB)
LFF Model	16GB (1x16GB)	496GB (15x32GB, 1x16GB)	512GB (16x32GB)

DDR4 memory options part number decoder

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



Technical Specifications

Altitude	Server Dimensions (L x W x D)	3.44 x 17.63 x 32 in (8.75cm x 44.8 x 81.28 cm) NOTE: Dimensions without Bezel.
Altitude	Operating	3048 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).
	Non-operating	9144 m (30,000 ft). 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 declared 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).
	Idle L WAd	4.6 B Entry LFF 4.5 B Entry SFF 4.9 B Typical LFF 4.9 B Typical SFF 5.0 Performance LFF 5.1 Performance SFF
	Operating L Wad	4.6 B Entry LFF 4.5 B Entry SFF 4.9 B Typical LFF 5.0 B Typical SFF 5.1 B Performance LFF 5.3 B Performance SFF
	L pAm	30 dBA Entry LFF 29 dBA Entry SFF 33 dBA Typical LFF 33 dBA Typical SFF 35 dBA Performance LFF 36 dBA Performance SFF NOTE: Entry LFF Configuration tested included one Intel E5-2620v3 processor, two 3TB LFF SAS HDD at front drive cage, one 6TB LFF SATA HDD at rear drive cage, one 16GB DDR4 RDIMMs 2133 MHz, four system fans, one 1400W power supply, one P840ar Flexible Smart Array Controller, one Flexible Storage 96W battery NOTE: Entry SFF configuration tested included one Intel E5-2620v3 processor, two 300GB SFF SAS HDD at front drive cage, one 16GB DDR4 RDIMMs 2133 MHz, four system fans, one 1400W power supply, one P840ar Flexible Smart Array Controller, one Flexible Storage 96W battery. NOTE: Typical LFF configuration tested included one Intel E5-2620v3 processor, twelve 3TB LFF SAS HDD at front drive cage, one 6TB LFF SATA HDD at rear drive cage, four 16GB DDR4 RDIMMs 2133MHz, four system fans, one 1400W power supply, one P840ar Flexible Smart Array Controller, one Flexible Storage 96W Battery. NOTE: Typical SFF configuration tested included one Intel E5-2620v3 processor, twenty-four 300GB SFF SAS HDD at front drive cage, four 16GB DDR4 RDIMMs 2133 MHz, four system fans, one 1400W power supply, one P840ar Flexible Smart Array Controller, one Flexible Storage 96W Battery. NOTE: Performance LFF configuration tested included two Intel E5-2620v3 processor, sixteen 3TB LFF SAS HDD at front drive cages, one 6TB LFF SATA HDD at rear drive cage, eight 16GB DDR4 RDIMMs 2133 MHz, five system fans, two 1400W power supplies, one P840ar Flexible Smart Array Controller, one Flexible Storage 96W battery. NOTE: Performance SFF configuration tested included two Intel E5-2620v3 processor, thirty-two 300GB SFF SAS HDD at front drive cages, eight 16GB DDR4 RDIMMs 2133 MHz, five system

Technical Specifications

fans, two 1400W power supplies, one P840ar Flexible Smart Array Controller, one Flexible Storage 96W Battery.

NOTE: Values are subject to change without notification and are for reference only.

NOTE: Performance of system, options, and ancillary equipment will vary depending on the system configurations

NOTE: Levels presented do not account for non-Hewlett-Packard installed hardware.

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.

HP Dynamic Smart Array B140i Controller

Number of PCI links	Four (4)
PCI link rate	4GB/s
Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared 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).
Storage protocol support	SATA
SAS/SATA peak data transfer rate	6Gb/s
Number of SAS/SATA links	6 links
SAS/SATA connectivity	1x4 connectors; 2x1 connectors
Expander support	No
Drives supported (max)	Up to 6 Internal Drives
RAID support	0, 1, 10, 5 SATA
Software management	HP SSA, SMH, SIM
Warranty	Server warranty
HP Secure Encryption license	Not Supported
HP SmartCache License	Not Supported
HP Smart Storage Administrator	Supported

Technical Specifications

	Compatibility	IEEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX IEEE 1588, IEEE 802.1AS IEEE 802.3az - Energy Efficient Ethernet (EEE)	
	Data Transfer Method	PCI Express v 2.0, 5.0 GT/s bus speeds for a x2 link.	
	Controller	Intel I350 Powerville	
HP Ethernet 1Gb 2-port 361i Adapter	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s per port, 20 Mb/s Combined
		10Base-T (Full-Duplex)	20 Mb/s per port, 40 Mb/s Combined
		100Base-TX (Half-Duplex)	100 Mb/s per port, 200 Mb/s Combined
		100Base-TX (Full-Duplex)	200 Mb/s per port, 400 Mb/s Combined
		1000Base-TX (Half and Full-Duplex)	1000Mb/s per port, 2000 Mb/s Combined
	Connector	RJ-45	
	Cable Support	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
		10/100/1000Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)
Environment-friendly Products and Approach	End-of-life Management and Recycling	<p>Hewlett-Packard offers end-of-life HP 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 HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.</p> <p>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 web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.</p>	

Summary of Changes

Date	Version History	Action	Description of Change:
21-Aug-2015	From version 2 to 3	Changed / Updated	Remove non supported items and add carepacks info.
8-Jun-2015	From version 1 to 2	Update	Update technical specifications and standard features
1-Jun-2015	Version 1	Create	Create QS for HP Apollo 4200 Gen9 Server

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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less