QuickSpecs

Overview
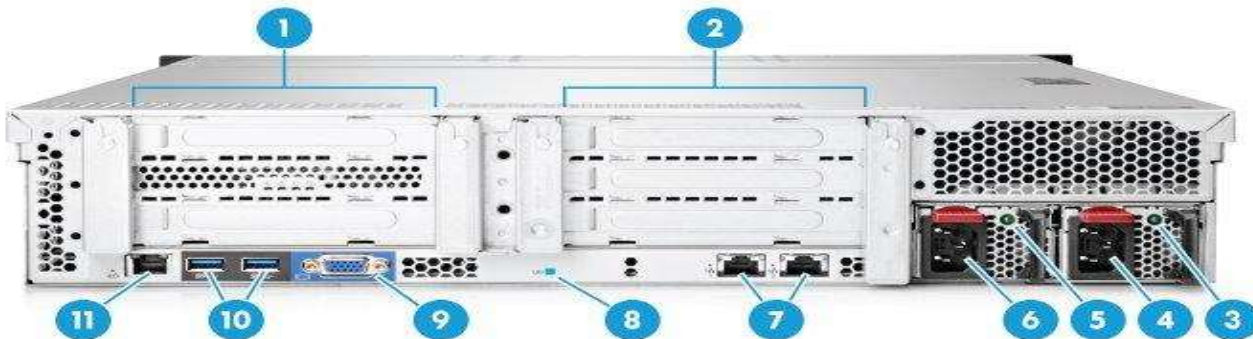
HP ProLiant DL180 Generation9 (Gen9)

The new standard for growing data center needs. Delivering an optimized 2U server, designed with the right balance of expandability, performance, reliability, and manageability—all in a new compact chassis. The ideal platform for SMBs and enterprises running applications, which need the right mix of compute and storage.
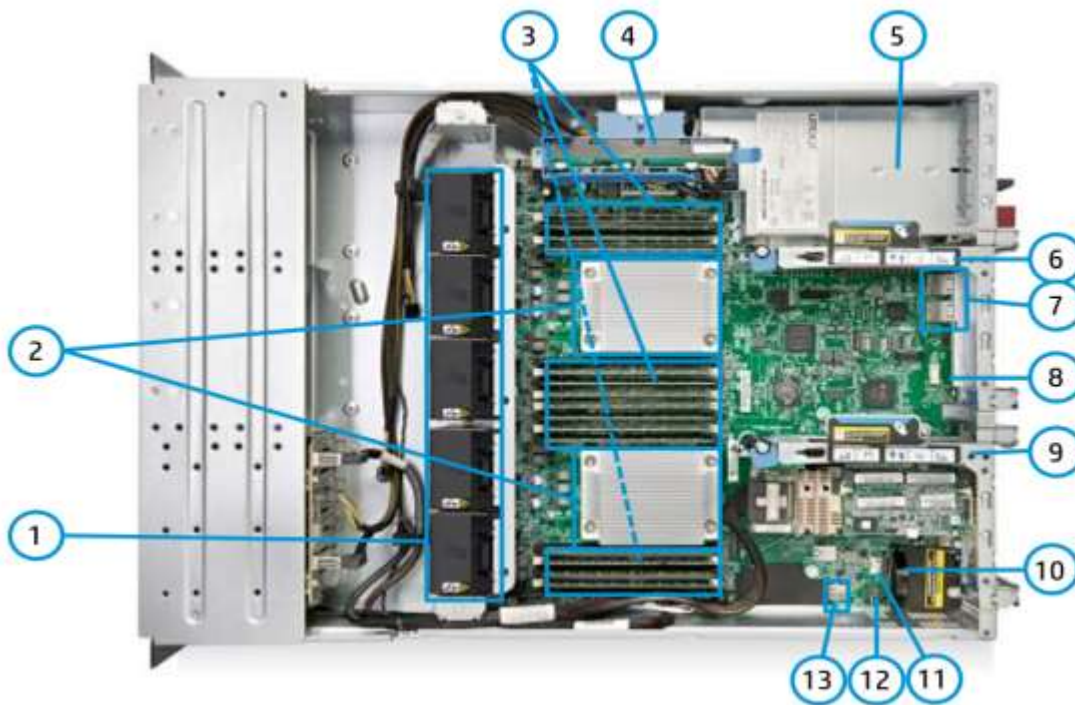

Front View

1. Access Panel (Top Cover)
2. Power On/Standby button and system power LED
3. Health LED
4. NIC status LED
5. UID button/LED
6. USB 2.0 connector
7. Serial label pull tab
8. Fixed 8-bay SFF drive cage (box 3)
9. 8-bay SFF drive cage bay (box 2, for the second 8-bay SFF drive cage option)
10. HP Universal Media Bay (box 1, for the optical drive cage option)

Rear view

1. PCIe3 slots 1-3 (primary, associated with processor 1)
2. PCIe3 slots 4-6 (secondary, associated with processor 2)
3. Power Supply 2 LED (Optional)
4. Power Supply 2 Power Connector (Optional)
   NOTE: RPS shown in the picture, will be available in early 2015.
5. Power Supply 1 LED (Optional)
6. Power Supply 1 Power Connector (Optional)
7. NIC connectors
8. UID LED
9. Video Connector
10. USB 3.0 Connectors
11. Dedicated iLO connector (optional)

Overview

Internal View

1. Fan cage shown with 5 Hot-swap fans (for 2P Redundancy)
2. 2 Processors, heatsink showing, with HP Smart Socket Guide
3. DDR4 DIMM slots. Shown fully populated in 16 slots (8 per processor)
4. Optional HP Smart Storage Battery
5. Entry level power supply bay (1x900W shown)
   NOTE: RPS will be available in early 2015.
6. Connection for second (optional) riser (Required second CPU)
7. Embedded 2x1GbE NIC
8. Flexible LOM sideband signal connector
9. Primary PCIe riser, standard
10. Dedicated iLO module connector
11. MicroSD card slot
12. SATA optical drive connector
13. Internal USB 3.0 connector (for USB flash devices)

Standard Features

NOTE: For more information regarding Intel Xeon processors, please see the following URL:
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
One of the following depending on Model

Model	CPU frequency	Cores	L3 Cache	Power	QPI	DDR4 Hz
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
E5-2640v3	2.6GHz	8	20MB	90W	8.0GT/s	1866
E5-2630v3	2.4Ghz	8	20MB	85W	8.0GT/s	1866
E5-2630Lv3	1.8GHz	8	20MB	55W	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

NOTE: Intel® Xeon® E5-2623v3 will be supported in early 2015.

Chipset
One of the following depending on Model

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
One of the following depending on Model

HP iLO (Firmware HP iLO4 2.0) 2GB NAND
NOTE: For more information, visit: http://www.hp.com/go/ilo.

Memory
One of the following depending on Model

Type:

HP SmartMemory

DDR4 Registered (RDIMM) or Load Reduced (LRDIMM)

DIMM Slots Available	16	(8 DIMM slots per processor, 4 channels per processor, 2 DIMMs per channel)
Maximum Capacity (LRDIMM)	512GB	(16 x 32GB LRDIMM @2133MHz)
Maximum Capacity (RDIMM)	512GB	(16 x 32GB RDIMM @2133MHz)

NOTE: 32GB RDIMM will be available in early 2015.

Memory Protection
One of the following depending on Model

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.

Expansion Slots

Primary Riser (Optional)

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
1	PCIe 3.0	x8	x8		Full Height, Full Length Slot	
2	PCIe 3.0	x8	x8		Full-height, half-length Slot	
3	PCIe 3.0	x8	x8		Full-height, half-length Slot	

NOTE: Bus Width data indicates the number of physical electrical lanes running to the connector.

Primary Riser (Optional)

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
1	PCIe 3.0	x16	x16		Full Height, Full Length Slot	
2	PCIe 3.0	x8	x8		Full-height, half-length Slot	

Standard Features

Riser with Flexible LOM (Optional)	Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
	1	PCIe 3.0	x8	x8		Full Height, Full Length Slot	
	2	PCIe 3.0	x8	x8		Full-height, half-length Slot	
	3	Flexible LOM				Full-height, half-length Slot	Can only be used for flexibleLOMs

NOTE: Flexible LOM riser kit will be available in early 2015.
NOTE: This riser is mandatory for installing Flexible LOMs & has to be installed in Primary riser slot.
NOTE: When populating slots on second riser, a second processor must be installed.

Storage Controller **One of the following** **depending on Model**	Entry Models	HP Dynamic Smart Array B140i Controller

NOTE: Provides support for up to 10 SATA drives and data transmission speeds up to 6Gb/s and supports RAID 0, 1 & 5.

	Base Models	HP Dynamic Smart Array B140i Controller
		HP H240 FIO Smart Host Bus Adapter

NOTE: H240 Provides support for up to 8 SAS/SATA drives, data transmission speeds up to 12Gb/s and supports RAID 0, 1 & 5.

	Storage Models	HP Flexible Smart Array P840/4G FIO Controller

NOTE: P840 Provides support for up to 16 SAS/SATA drives, data transmission speeds up to 12Gb/s.

	Performance Models	HP Flexible Smart Array P840/4G FIO Controller

NOTE: P840 Provides support for up to 16 SAS/SATA drives, data transmission speeds up to 12Gb/s.

Internal Storage Devices One of the following depending on Model	Optical Drives	Optional: DVD-ROM, DVD-RW **NOTE:** This option available with all 8SFF drive bay models only.
	Hard Drives	None ship standard
	Hard Drive Bays	8 SFF drive bays total with Optical Bay

Optional: +8SFF drive bay (total of 16SFF drive bays)
NOTE: The Optical Drive bay is not available with 8SFF hard drive cage/backplane kit option (725572-B21).
8 LFF drive bays total without Optical Bay
NOTE: Optical drive is not supported on LFF CTO Server models.
12 LFF drive bays total without Optical Bay
Up to 4 Non-hot plug SATA 3.5" drives

Maximum Internal Storage One of the following depending on Model	CAPACITY	CONFIGURATION
Hot Plug SFF SAS	19.2TB	16 x 1.2TB (with 16SFF drive cage)
Hot Plug SFF SATA	16TB	16 x 1TB (with 16SFF drive cage)
Hot Plug LFF SAS	72.0TB	12 x 6TB (with 12LFF drive cage)
Hot Plug LFF SATA	72.0TB	12 x 6TB (with 12LFF drive cage)
Hot Plug SFF SAS SSD	25.6TB	16 x 1.6TB (with 16SFF drive cage)
Hot Plug SFF SATA SSD	25.6TB	16 x 1.6TB (with 16SFF drive cage)

NOTE: 1.6TB SFF SATA SSD will be supported in early 2015.

Hot Plug LFF SATA SSD	19.2TB	12 x 1.6TB (with 12LFF drive cage)

NOTE: 1.6TB LFF SATA SSD will be supported in early 2015.

Non-Hot Plug LFF SATA	4.8TB	8 x 600GB (with 8LFF drive cage)

Power Supply One of the following depending on Model	HP 550W FIO Power Supply

HP Entry-Level Power Supplies provide lower-cost options for customers trying to balance their need for enterprise class efficiency and reliability while maintaining lowest possible hardware costs. All Entry-Level power supply options have been designed specifically for HP ProLiant Gen9 Essential Series servers.

Standard Features

The HP 550W FIO Power Supply is the standard, non-redundant AC power supply option for most HP ProLiant Gen9 Essential servers. It features Silver-level (89%) certified power efficiency with a set of features optimized for the Gen9 Essential-series rack and tower servers.

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.

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

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

System Fans One of the following depending on Model		**Non-redundant**	**Redundant**
	1P model	2 fans	4 fans
		Non-redundant	**Redundant**
	2P model	4 fans	5 fans

NOTE: Customers may separately purchase redundant fans with the 725571-B21 option kit. Additional fans (two) are also included in -B21 processor option kits when upgrading from one processor to two processors.

Interfaces		
	Video	1 (Vaux Support)
	LOM Network Ports	2 x 1GbE ports
	HP iLO Remote Management Network Port	1 GbE (Optional)
	SD Slot	1 Micro SD

NOTE: The SD slot is not a hot-pluggable device. Customers should not attempt to plug an SD card into the SD slot while the server is powered.

	USB	Up to 4 USB ports (standard); Front: 1xUSB 2.0 std; (1xUSB3.0 optional upgrade with quick release ears) Rear: 2xUSB 3.0 Internal: 1x USB 3.0

NOTE: 8LFF & 12LFF drive cage models with Quick release latch rack ears supports front USB 3.0.

Operating Systems and Virtualization Software Support for ProLiant Servers

Microsoft Windows Server
Red Hat Enterprise Linux (RHEL)
SUSE Linux Enterprise Server (SLES)
Oracle Solaris
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/ossupportand our driver download page http://www.hp.com/support/DL180Gen9.

Upgradeability One of the following depending on Model

Upgradeable to two processors (24 cores)
Up to 16 DIMM slots available
NOTE: To take advantage of DIMMs 9-16, a second processor must be installed.
FlexibleLOM slot for 1Gigabit or 10 Gigabit Ethernet or QDR/FDR InfiniBand networking options
NOTE: FlexibleLOM support will be included in early 2015.
Optional 2 slot riser (x16, x8)
NOTE: To take advantage of the additional 2 PCI slot upgrade, a second processor must be installed.
Redundant Power Supply
NOTE: Redundant Power Supply will be available in early 2015.
Redundant Fan
Optical Drive (8 SFF/16 SFF only)

Standard Features

Industry Standard Compliance	ACPI 2.0b Compliant PCIe 3.0 Compliant PXE Support WOL Support Microsoft® Logo certifications USB 3.0 Support ASHRAE A3/A4 **NOTE:** Supports A3 extended ambience, A4 extended ambience will be available in early 2015. **NOTE:** Refer to technical specifications section for more details.
Graphics	Integrated Matrox G200eH2 video standard • 1280 x 1024 (32 bpp) • 1920 x 1200 (16 bpp)
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 ProLiant Gen9 platform defaults to UEFI and can be factory or 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 ProLiant 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 www.hp.com/go/proliant/uefi. **NOTE:** For UEFI Boot Mode, boot environment and OS image installations should be configured properly to support UEFI. **NOTE:** HP UEFI FIO Setting (758959-B22) can be selected to configure the system in Legacy mode in the factory.
Form Factor One of the following depending on Model	**2U Rack form factor** All models ship with Easy Install rails (Cable management arm optional). **8 SFF Drive Bay Version:** 3.44 (8.75 cm) Height x 17.54" (44.55 cm) Width x 23.9" (60.70 cm) Length **8 LFF Drive Bay Version:** 3.44 (8.75cm) Height x 17.54" (44.55 cm) Width x 23.9" (60.70 cm) Length **12 LFF Drive Bay Version:** 3.44 (8.75cm) Height x 17.54" (44.55 cm) Width x 23.9" (60.70 cm) Length **16 SFF Drive Bay Version:** 3.44 (8.75 cm) Height x 17.54" (44.55 cm) Width x 23.9" (60.70 cm) Length
Embedded Management	**HP Integrated Lights-Out (HP iLO)** — Monitor your servers for ongoing management, service alerting, reporting and remote management with HP iLO. Learn more at www.hp.com/go/ilo. **UEFI** — Configure and boot your servers securely with industry standard Unified Extensible Firmware Interface (UEFI). Learn more at www.hp.com/go/ProLiant/uefi.

Standard Features

	HP RESTful API	RESTful API is an application programming interface. RESTful Web Service API served by iLO's web server: Learn more at www.hp.com/go/restfulapi.
	Intelligent Provisioning	Provision servers by discovering and deploying 1 to few servers with Intelligent Provisioning. Learn more at ww.hp.com/go/intelligentprovisioning.
	Embedded Remote Support	HP's embedded remote support, when used with Insight Online direct connect or HP Insight Remote Support, allows HP ProLiant servers to transmit hardware events directly to HP or an HP Authorized Partner for automated phone home support. Learn more at www.hp.com/go/insightonline/info.
Server utilities	**HP Smart Update**	Optimize firmware and driver updates with HP Smart Update solutions. Learn more at www.hp.com/go/smartupdate.
	HP Systems Insight Manager (HP SIM)	HP SIM allows you to monitor the health of your HP ProLiant Servers and HP Integrity Servers, and also provides you with basic support for non-HP servers. HP SIM also integrates with HP SUM to provide quick and seamless firmware updates. Learn more at 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 HP Scripting Tool Kit for Windows and Linux or HP Scripting Tools for Windows PowerShell. Learn more at www.hp.com/go/ProLiantSTK or www.hp.com/go/powershell.
	HP RESTful Interface Tool	HP RESTful Interface tool is a scripting tool to provision servers using RESTful API Interface to discover and deploy servers at scale. Learn more at www.hp.com/go/restfulapi
	HP 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: www.hp.com/go/ilo/mobileapp.
	HP Insight Online	HP Insight Online, available at no additional cost as part of your HP warranty, Care Pack or contractual support agreement with HP, is a personalized dashboard for simplified tracking of IT operations and support information from anywhere, anytime. Learn more at www.hp.com/go/insightonline/info.
Security	Power-on password Serial interface control Administrator's password TPM 1.2 UEFI	
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, 3-Year Labor, 3-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 Essentials**	HP iLO Essentials is the preferred license for small and medium business that offers full remote server management capabilities for small and medium business via the Integrated Remote Console (IRC), virtual media, and e-mail based alerts. Learn more about HP iLO Essentials at www.hp.com/go/iLO/essentials
	iLO Scale-Out	HP iLO Scale-Out is the preferred license built for web hosting, cloud service providers, and high performance computing data centers, managing massive scale out environments. This license offers sophisticated scripting tools that provides remote access through Text Console via SSH, Dynamic power capping, Email-based Alerting and proactive notifications. For more information, visit www.hp.com/go/iLO/scale-out.
	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 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.
		NOTE: HP OneView support for HP ProLiant Gen9 rack (DL) and blade (BL) servers will be available with a future version of HP OneView to be released Early 2015. Customers may purchase HP OneView licenses now, and will be granted rights to use HP Insight Control software and transition to HP OneView with a free upgrade, when available. Customers also have the option to purchase HP Insight Control.

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.

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.

Storage Software	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

Optional Features

application performance, and reduce costs by efficiently migrating infrequently accessed or less valuable data to lower cost storage.

- **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 www.hp.com/go/vsa1TB.

NOTE: For more information about Storage Software including QuickSpecs, please see: 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.

Optimized Support recommendation
HP Proactive Care – 24x7 coverage, four hour response, three year Care Pack Service
Prevent problems and stabilize IT by utilizing secure, real-time, predictive analytics and proactive consultations when your products are connected to HP. Includes enhanced escalation management. Provides collaborative software call management with two hour call back to reduce troubleshooting on industry leading software.

As a leading global support provider for Microsoft, Red Hat, VMware, SUSE and other operating systems, HP is able to simplify and shorten your time to resolution with one call for hardware or software questions. http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855ENW.pdf

HP ProLiant Server Hardware Installation
Help ensure your new HP ProLiant hardware is installed smoothly, efficiently and with minimal disruption to your IT and business operations. http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf

Standard Support recommendation
HP Foundation Care - 24x7 coverage, three year Care Pack Service
Connect to HP for faster problem resolution. Foundation Care provides hardware onsite response within four hours if needed and collaborative software call management with two hour callback for industry leading third party software. 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

HP ProLiant Hardware Installation
Help ensure your new HP ProLiant hardware is installed smoothly, efficiently and with minimal disruption to your IT and business operations.
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf

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. 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. 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

Additional HP Care Pack services can be found at: www.hp.com/go/cpc

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.

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 666986-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.

	Entry Models		Base Models	
[SKU Number]	778452-B21	778453-B21	778454-B21	778455-B21
Model Name	HP ProLiant DL180 Gen9 E5-2603v3 1P 8GB-R B140i 4LFF NHP SATA 550W PS Entry Server	HP ProLiant DL180 Gen9 E5-2603v3 1P 8GB-R B140i 8LFF Hot Plug SATA 550W PS Entry Server	HP ProLiant DL180 Gen9 E5-2609v3 1P 8GB-R H240 8LFF SAS 550W PS Base Server	HP ProLiant DL180 Gen9 E5-2609v3 1P 8GB-R H240 8SFF SAS 550W PS Base Server
Processor	Intel® Xeon® E5-2603v3		Intel® Xeon® E5-2609v3	
Number of Processors	One			
Memory	8GB (1x8GB Registered DIMMs, 2133 MHz) **NOTE:** Due to processor limitation, these DDR4 DIMMs will operate at 1600 MHz in this model.			
Network Controller	HP Ethernet 1Gb 2-port i350 Adapter			
Storage Controller	HP Dynamic Smart Array B140i		HP H240 FIO Smart Host Bus Adapter	
Hard Drive	None ship standard; includes 4 LFF hard drive blanks	None ship standard; includes 6 LFF hard drive blanks		None ship standard; includes 6 SFF hard drive blanks
Internal Storage	4 LFF HDD Bays (Non Hot Plug)	8 LFF HDD Bays		8 SFF HDD Bays
Optical Drive Bay	Not Available	Not Available		1; (Optional: DVD-ROM, DVD-RW)
PCI-Express Slots	3 Standard (1-FLFH, 2-FH/HL)			
Power Supply	(1) HP 550W FIO Power Supply	(1) HP 550W FIO Power Supply		
Fans	2 hot swap fans, non redundant			
Management	iLO Management (standard), Intelligent Provisioning (standard), iLO Essentials (optional)			
Form Factor	Rack (2U), HP Easy Install Rails			
Warranty	Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.			

Smart Buys

[SKU Number]	784099-S01	784100-S01
Model Name	HP ProLiant DL180 Gen9 E5-2603v3 1.6GHz 6-core 8GB-R B140i 8 LFF 550W PS Server/S-Buy	HP ProLiant DL180 Gen9 E5-2609v3 1.9GHz 6-core 8GB-R H240 8 SFF 550W PS Server/S-Buy
Processor	Intel® Xeon® E5-2603v3	Intel® Xeon® E5-2609v3
Number of Processors	One	
Memory	8GB (1x8GB Registered DIMMs, 1600 MHz)	
Network Controller	HP Ethernet 1Gb 2-port i350 Adapter	
Storage Controller	HP Dynamic Smart Array B140i	HP H240 FIO Smart Host Bus Adapter
Hard Drive	None ship standard; includes 6 LFF hard drive blanks	None ship standard; includes 6 SFF hard drive blanks
Internal Storage	8 LFF HDD Bays	8 SFF HDD Bays
Optical Drive Bay	Not Available	1; (Optional: DVD-ROM, DVD-RW)
PCI-Express Slots	3 Standard (1-FLFH, 2-FH/HL)	
Power Supply	(1) HP 550W FIO Power Supply	
Fans	2 hot swap fans, non-redundant	
Management	iLO Management (standard), Intelligent Provisioning (standard), iLO Essentials (optional)	
Form Factor	Rack (2U), HP Easy Install Rails	
Warranty	Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.	

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)

CTO Server	HP ProLiant DL180 Gen9 Non-hot Plug LFF Configure-to-order Server	HP ProLiant DL180 Gen9 Hot Plug 8LFF Configure-to-order Server	HP ProLiant DL180 Gen9 8SFF Configure-to-order Server	HP ProLiant DL180 Gen9 Hot Plug 12LFF Configure-to-order Server
SKU Number	754525-B21	754524-B21	754523-B21	775506-B21
Processor	2 (optional) x HP Smart Socket Guides			
DIMMSlots	16 DIMM slots for RDIMM, LRDIMM DDR4 Memory			
Storage Controller	HP Dynamic Smart Array B140i			
PCIe	3 PCIe slots (+3 PCI slots available with upgrade option, second processor required)			
Drive Cage	4LFF or 8LFF Non Hot Plug	8LFF Hot Plug (+4LFF optional field upgradable)	8SFF Hot Plug (+8SFF Optional)	12LFF Hot Plug
Network Controller	HP Ethernet 1Gb 2-port i350 Adapter			
Fans	2 hot swap fans, non redundant			
Management	iLO Management (standard), Intelligent Provisioning (standard), iLO Essentials (optional)			
USB	1 front, 1 internal, 2 rear			
Ears	HP Thumbscrew Ears	HP Quick Release Ears	HP Thumbscrew Ears	HP Quick Release Ears

NOTE: HP ProLiant DL180 Gen9 Non-hot plug CTO Server (P/N- 754525-B21) supports both 4LFF and 8LFF configurations.

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

HP Processors

Entry Processors - E5-2600v3 series Processors

HP DL180 Gen9 Intel® Xeon® E5-2609v3 (1.9GHz/6-core/15MB/85W) FIO Processor Kit   733925-L21
HP DL180 Gen9 Intel® Xeon® E5-2603v3 (1.6GHz/6-core/15MB/85W) FIO Processor Kit   733929-L21

Base Processors - E5-2600v3 series Processors

HP DL180 Gen9 Intel® Xeon® E5-2640v3 (2.6GHz/8-core/20MB/90W) FIO Processor Kit   733916-L21
HP DL180 Gen9 Intel® Xeon® E5-2630v3 (2.4GHz/8-core/20MB/85W) FIO Processor Kit   733918-L21
HP DL180 Gen9 Intel® Xeon® E5-2620v3 (2.4GHz/6-core/15MB/85W) FIO Processor Kit   733921-L21
HP DL180 Gen9 Intel® Xeon® E5-2630Lv3 (1.8GHz/8-core/20MB/55W) FIO Processor Kit   763226-L21

Performance Processors - E5-2600v3 series Processors

HP DL180 Gen9 Intel® Xeon® E5-2660v3 (2.6GHz/10-core/25MB/105W) FIO Processor Kit   733912-L21
HP DL180 Gen9 Intel® Xeon® E5-2650v3 (2.3GHz/10-core/25MB/105W) FIO Processor Kit   733914-L21
HP DL180 Gen9 Intel® Xeon® E5-2650Lv3 (1.8GHz/12-core/30MB/65W) FIO Processor Kit   763222-L21

NOTE: If two processors are desired, select one xxxxxx-L21 and one xxxxxx-B21.
NOTE: Up to 2 processors supported. Mixing different processor models is not 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: 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, 4 is socket/segment designation, 00 = Processor SKU, x = L for low power SKUs and v# (not yet designated) = version number.

HP Memory

Registered DIMMs (RDIMMs) for E5-2600v3 Series
HP 8GB (1x8GB) Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit   726718-B21
HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit   726719-B21

Load Reduced DIMMs (LRDIMMs) for E5-2600v3 Series
HP 32GB (1x32GB) Quad Rank x4 DDR4-2133 CAS-15-15-15 Load Reduced Memory Kit   726722-B21

NOTE: Order quantity one or more of HP Memory Kit.
NOTE: LRDIMM, RDIMM are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen9 servers support LRDIMM and RDIMM.

Configuration Information - Factory Integrated Models

NOTE: 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.

NOTE: 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.

NOTE: 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.

NOTE: 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/ddr4memory-configurator

HP I/O Expansion Options	HP DL180 Gen9 3 Slot x8 PCI-E Riser Kit	725569-B21
	HP DL180 Gen9 x16 PCI-E Riser Kit	725570-B21

HP Power Supplies

NOTE: 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.

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: www.hp.com/go/hppoweradvisor.

HP Entry-Level Power Supplies

HP 550W FIO Power Supply Kit	730941-B21

HP Storage Controllers

NOTE: If 8SFF CTO Server is selected in Step 1 and SAS Drives desired, MUST select an HP Storage Controller listed below.

NOTE: If 12LFF CTO Server is selected in Step 1, MUST select HP Smart Array P840/4GB (PN: 761874-B21) below.

NOTE: If Non-Hot Plug LFF CTO Server is selected in Step 1, MUST select a Non-hot Plug FIO Cable Kit below.

SAS Controllers

HP Smart Array Controllers

HP Smart Array P440/4GB FBWC 12Gb 1-port Int FIO SAS Controller	761872-B21
HP Smart Array P840/4GB FBWC 12Gb 2-ports Int FIO SAS Controller	761874-B21

HP Host Bus Adapter

HP H240 12Gb 1-port Int FIO Smart Host Bus Adapter	761873-B21

HP Cable Options

HP DL180 Gen9 8LFF Hot Plug FIO Cable Kit	774868-B21

NOTE: Required for embedded B140i controller or H240 Smart Host Bus Adapter on 8LFF CTO Server.

HP DL180 Gen9 8LFF Non-hot Plug FIO Cable Kit	774869-B21

NOTE: Required for Non-hot Plug 8LFF CTO Server.

HP DL180 Gen9 8SFF Hot Plug Cbl FIO Kit	774870-B21

NOTE: Required for embedded B140i controller or H240 Smart Host Bus Adapter on 8SFF CTO Server.

HP DL180 Gen9 4LFF Non-hot Plug FIO Cable Kit	776447-B21

NOTE: Required for Non-hot Plug 4LFF CTO Server.

Step 3: Choose Additional Factory Integratable Options (only one of the following from each list unless otherwise noted)

HP Cooling Options	HP DL180 Gen9 Redundant Fan FIO Kit	779841-B21
	NOTE: Upgrades a non-redundant server with one additional hot-plug fan (FIO only).	
HP Insight Software	**HP Insight Control**	
	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License	C6N36A
HP Converged Infrastructure Management Software	**HP OneView**	
	HP OneView for ProLiant DL Server incl 3yr 24x7 Supp FIO Bundle Physical 1 Svr Lic	E5Y43A
HP Security	HP DL180 Gen9 Thumbscrew Ear FIO Kit	782641-B21

Configuration Information - Factory Integrated Models

NOTE: Can only be selected with NHP CTO Server model. Must select either Thumbscrew Ear or Quick-release Latch Rack Ears Kit for the NHP CTO Server model.

HP Quick-release Latch Rack Ears FIO Kit   725579-B21

NOTE: Can only be selected with Hot-Plug SFF or NHP CTO Server model.
NOTE: This option kits required for Security Bezel. This option also provides with One Front USB 3.0.

Step 4: Choose Additional Options for Factory Integration from Core and Additional Options Sections

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	HP DL180 Gen9 Dedicated iLO Management Port Kit	725581-B21
	HP DL180 Gen9 8SFF Hard Drive Cage/Backplane Kit	725572-B21
	HP DL180 Gen9 12LFF Hot Plug Enablement Kit	725574-B21
	NOTE: This can be used only with 8LFF Hot Plug Chassis and contains the controller cables required for upgrade.	
	HP DL180 Gen9 3 Slot x8 PCI-E Riser Kit	725569-B21
	HP DL180 Gen9 x16 PCI-E Riser Kit	725570-B21

HP Processors	**Entry Processors - E5-2600v3 series Processors**	
	HP DL180 Gen9 Intel® Xeon® E5-2609v3 (1.9GHz/6-core/15MB/85W) Processor Kit	733925-B21
	HP DL180 Gen9 Intel® Xeon® E5-2603v3 (1.6GHz/6-core/15MB/85W) Processor Kit	733929-B21
	Base Processors - E5-2600v3 series Processors	
	HP DL180 Gen9 Intel® Xeon® E5-2640v3 (2.6GHz/8-core/20MB/90W) Processor Kit	733916-B21
	HP DL180 Gen9 Intel® Xeon® E5-2630v3 (2.4GHz/8-core/20MB/85W) Processor Kit	733918-B21
	HP DL180 Gen9 Intel® Xeon® E5-2620v3 (2.4GHz/6-core/15MB/85W) Processor Kit	733921-B21
	HP DL180 Gen9 Intel® Xeon® E5-2630Lv3 (1.8GHz/8-core/20MB/55W) Processor Kit	763226-B21
	Performance Processors - E5-2600v3 series Processors	
	HP DL180 Gen9 Intel® Xeon® E5-2660v3 (2.6GHz/10-core/25MB/105W) Processor Kit	733912-B21
	HP DL180 Gen9 Intel® Xeon® E5-2650v3 (2.3GHz/10-core/25MB/105W) Processor Kit	733914-B21
	HP DL180 Gen9 Intel® Xeon® E5-2650Lv3 (1.8GHz/12-core/30MB/65W) Processor Kit	763222-B21

HP Memory	**Registered DIMMs (RDIMMs) for E5-2600v3 Series**	
	HP 8GB (1x8GB) Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit	726718-B21
	HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit	726719-B21
	Load Reduced DIMMs (LRDIMMs) for E5-2600v3 Series	
	HP 32GB (1x32GB) Quad Rank x4 DDR4-2133 CAS-15-15-15 Load Reduced Memory Kit	726722-B21

HP Optical Drives	HP DL180 Gen9 Optical Disk Drive Enablement Kit	725582-B21
	HP 9.5mm SATA DVD-ROM JackBlack Gen9 Optical Drive	726536-B21
	HP 9.5mm SATA DVD-RW JackBlack G9 Optical Drive	726537-B21
	HP Mobile USB Non Leaded System DVD RW Drive	701498-B21
	NOTE: Optical drive is not supported on LFF models	

HP Drives	**SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives**	
	HP 900GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652589-B21
	HP 600GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759212-B21
	HP 600GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652583-B21
	HP 450GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759210-B21
	HP 450GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652572-B21
	HP 300GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759208-B21
	HP 300GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652564-B21
	SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives	
	HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652745-B21
	SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives	
	HP 600GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive	765424-B21
	HP 450GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive	737394-B21
	HP 300GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive	737261-B21

Core Options

SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives

HP 6TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	761477-B21
HP 4TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	695510-B21
HP 3TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652766-B21
HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652757-B21
HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652753-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 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	753874-B21
HP 4TB 6G SATA 7.2k rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	693687-B21
HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	628061-B21
HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658079-B21
HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	657750-B21
HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658071-B21

SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives

HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	628065-B21
HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	659339-B21
HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	659337-B21
HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	659341-B21

12G SAS Hot Plug SFF (2.5-inch) Enterprise Performance Solid State Drives

HP 800GB 12G SAS High Endurance SFF 2.5-in SC Enterprise Performance 3yr Wty Solid State Drive	741159-B21
HP 400GB 12G SAS High Endurance SFF 2.5-in SC Enterprise Performance 3yr Wty Solid State Drive	741155-B21
HP 200GB 12G SAS High Endurance SFF 2.5-in SC Enterprise Performance 3yr Wty Solid State Drive	741151-B21

12G SAS Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives

HP 800GB 12G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	741146-B21
HP 400GB 12G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	741142-B21
HP 200GB 12G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	741138-B21

12G SAS Hot Plug SFF (2.5-inch) Enterprise Value Solid State Drives

HP 800GB 12G SAS Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	762261-B21

12G SAS Hot Plug LFF (3.5-inch) Enterprise Value Solid State Drives

HP 800GB 12G SAS Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	762270-B21

6G SATA Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives

HP 800GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691868-B21
HP 400GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691866-B21
HP 200GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691864-B21
HP 100GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691862-B21

6G SATA Hot Plug SFF (2.5-inch) Enterprise Value Solid State Drives

HP 800GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	717973-B21
HP 600GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	739898-B21

Core Options

HP 480GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	717971-B21
HP 300GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	739888-B21
HP 240GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	717969-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 SATA Hot Plug LFF (3.5-inch) Enterprise Mainstream Solid State Drives	
HP 800GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691860-B21
HP 400GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691856-B21
HP 200GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691854-B21
HP 100GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691852-B21
6G SATA Hot Plug LFF (3.5-inch) Enterprise Value Solid State Drives	
HP 800GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	718189-B21
HP 600GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	739900-B21
HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	718183-B21
HP 300GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	739890-B21
HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	718177-B21
6G SATA Hot Plug LFF (3.5-inch) Enterprise Boot Solid State Drives	
HP 120GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Boot 3yr Wty Solid State Drive	718171-B21
HP 80GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Boot 3yr Wty Solid State Drive	734362-B21
Hard Drive Blank Kits	
HP Large Form Factor Hard Drive Blank Kit	666986-B21
HP Small Form Factor Hard Drive Blank Kit	666987-B21
Hard Drive Kits	
HP DL180 Gen9 8SFF Hard Drive Cage/Backplane Kit	725572-B21
HP DL180 Gen9 12LFF Hot Plug Enablement Kit	725574-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
	HP Ethernet 1Gb 2-port 361T Adapter	652497-B21
	10 Gigabit Ethernet adapters	
	HP Ethernet 10Gb 2-port 530SFP Adapter	652503-B21
	HP Ethernet 10Gb 2-port 530T Adapter	656596-B21
	HP Ethernet 10Gb 2-port 561T Adapter	716591-B21
	HP Ethernet 10Gb 2-port 560SFP+ Adapter	665249-B21

HP I/O Expansion Options	HP DL180 Gen9 3 Slot x8 PCI-E Riser Kit	725569-B21
	HP DL180 Gen9 x16 PCI-E Riser Kit	725570-B21

HP Cooling Options	HP DL180 Gen9 Redundant Fan Kit	725571-B21
	NOTE: Customers can upgrade to a redundant fan configuration with the purchase of above option kit (contains 2 Fans).	

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
	HP Insight Control Upgrade from iLO Advanced including 1yr 24x7 Support Flexible Quantity License	464063-B21

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_na/12631_na.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 Electronic License with 3yr 24x7 Tech Support and Updates	BD506AAE
	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
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Electronic License	TA850AAE
	HP iLO Essentials	
	HP Integrated Lights-Out Essentials including 3yr 24x7 Tech Support and Updates Single Svr License	BD774A
	HP Integrated Lights-Out Essentials including 3yr 24x7 Tech Support and Updates E-LTU	BD774AAE
	HP Integrated Lights-Out Essentials including 1yr 24x7 Tech Support and Updates Single Svr License	BD775A
	HP Integrated Lights-Out Essentials including 1yr 24x7 Tech Support and Updates E-LTU	BD775AAE
	HP Integrated Lights-Out Essentials including 3yr 24x7 Technical Support and Updates E-LTU	E6U61ABE
	HP Integrated Lights-Out Essentials including 1yr 24x7 Technical Support and Updates E-LTU	E6U62ABE
	HP iLO Scale-out	
	HP Integrated Lights-Out Scale-Out 3yr 24x7 Tech Support and Updates Flex Quantity License	BD776A
	HP Integrated Lights-Out Scale-Out including 3yr 24x7 Tech Support and Updates Flex Qty E-LTU	BD776AAE
	HP Integrated Lights-Out Scale-Out including 3yr 24x7 Tech Support and Updates Tracking License	BD777A
	HP Integrated Lights-Out Scale-Out 1yr 24x7 Tech Support and Updates Flex Quantity License	BD778A
	HP Integrated Lights-Out Scale-Out including 1yr 24x7 Tech Support and Updates Flex Qty E-LTU	BD778AAE
	HP Integrated Lights-Out Scale-Out including 1yr 24x7 Tech Support and Updates Tracking License	BD779A

HP Converged Infrastructure Management Software	**HP OneView**	
	HP OneView incl 3yr 24x7 Supp Phys 1 Svr Lic	E5Y34A
	HP OneView incl 3yr 24x7 Supp Flex Qty E-LTU	E5Y35AAE
	HP OneView Media Kit Phys No Lic	E5Y37A
	HP OneView incl 3yr 24x7 Supp Bundle 1 Svr E-LTU	E5Y43AAE
	HP OneView with iLO Advanced	
	HP OneView w/o iLO Adv incl 3yr 24x7 Supp Phys 1 Svr Lic	E5Y38A
	HP OneView w/o iLO Adv inc 3yr 24x7 Supp Flex Qty E-LTU	E5Y39AAE

QuickSpecs

HP ProLiant DL180 Generation9 (Gen9)

Additional Options

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	BD476A

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.

	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_na/12612_na.html.

HP Security	HP 2U Security Bezel Kit	666988-B21

NOTE: Quick Release Ear option kit (P/N 725579-B21) is required for installing security bezel.

	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: 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.

HP Storage Controllers	**SAS Controllers**	
	HP Smart Array Controllers	
	HP Smart Array P440/4GB FBWC 12Gb 1-port Int SAS Controller	726821-B21
	HP Smart Array P840/4GB FBWC 12Gb 2-ports Int SAS Controller	726897-B21
	HP Smart Array P441/4GB FBWC 12Gb 2-ports Ext SAS Controller	726825-B21
	HP Smart Host Bus Adapters	
	HP H240 12Gb 1-port Int Smart Host Bus Adapter	726907-B21
	HP Cable Options	
	HP DL180 Gen9 8LFF Smart Array Cable Kit	725577-B21
	HP DL180 Gen9 8SFF Smart Array Cable Kit	725578-B21

NOTE: One of the above cables is required to be selected depending on the combination of chassis and storage controller. Cable option kit descriptions include the right chassis and storage controllers names.

NOTE: FIO indicates that this option is only available as a factory installable option. Please select FIO option if you want the option to be factory installed.

NOTE: NHP server chassis (Mod-x) includes SATA cables required to connect drives to embedded B140i SATA controller.

	Optional Upgrades	
	HP 96W Smart Storage Battery with 145mm Cable for DL/ML/SL Servers	727258-B21

NOTE: This option is mandatorily required with HP Smart Array controllers. One server can accommodate only 1 Smart Storage Battery that would suffice the requirement of all HP Smart Array controllers.

HP Tape Backup		

NOTE: For the complete range of tape drives, autoloaders, libraries and media see: http://www.hp.com/go/tape. For hardware and software compatibility of HP tape backup products see: http://www.hp.com/storage/SPOCK and www.hp.com/go/ebs.

NOTE: For Internal drives to be connected to DL servers please make sure that you order rack mount kit as well.

Tape Drives		
	HP StoreEver LTO-6 Ultrium 6250 Internal Tape Drive	EH969A
	HP StoreEver LTO-6 Ultrium 6650 SAS External Tape Drive	EH964A
	HP StoreEver LTO-6 Ultrium 6250 External Tape Drive	EH970A

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Additional Options

HP StoreEver LTO-4 Ultrium 1760 SAS External Tape Drive	EH920B
HP StoreEver LTO-5 Ultrium 3280 SAS External Tape Drive	EH900B
HP StoreEver LTO-5 Ultrium 3000 SAS External Tape Drive	EH958B
Tape Libraries	
HP MSL2024 0-Drive Tape Library	AK379A
HP MSL4048 0-Drive Tape Library	AK381A
HP Tape Storage Systems	
HP StoreEver 1U SAS Rack-mount Kit	AE459B
HP StoreEver LTO-4 Ultrium 1760 SAS (1) in 1U Rack-mount Kit	EH946C
HP StoreEver LTO-5 Ultrium 3280 SAS Tape Drive in 3U Rack-mount	EJ013B
HP StoreEver LTO-5 Ultrium 3000 SAS Tape Drive in 1U Rack-mount	EJ014B
HP StoreEver LTO-6 Ultrium 6250 Tape Drive in 1U Rack-mount Kit	C0L99A
HP StoreEver 1/8 G2 LTO-6 Ultrium 6250 FC Tape Autoloader	C0H19A
HP StoreEver MSL6480	
HP StoreEver MSL6480 Scalable Base Module	QU625A
HP StoreEver MSL6480 Scalable Expansion Module	QU626A
HP MSL Library Extender Kit	AQ746A

HP Disk Storage Systems	**Disk Enclosures**	
	HP D6000 Dual I/O Module Disk Enclosure	QQ695A
	HP D6000 w/35 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 140TB Bundle	E7W30A
	HP D6000 w/70 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 280TB Bundle	E7W31A
	HP D6000 w/70 3TB 6G SAS 7.2K LFF Dual port MDL HDD 210TB Bundle	QQ700A
	HP D6000 w/70 2TB 6G SAS 7.2K LFF Dual port MDL HDD 140TB Bundle	QQ698A
	HP D6000 w/35 3TB 6G SAS 7.2K LFF Dual port MDL HDD 105TB Bundle	QQ699A
	HP D6000 w/35 2TB 6G SAS 7.2K LFF Dual port MDL HDD 70TB Bundle	QQ697A

HP Data Center Racks	**HP 11000 G2 Series Racks**	
	HP 11648 1075mm Pallet Universal Rack	H6J87A
	HP 11648 1075mm Shock Universal Rack	H6J88A
	HP 11642 1075mm Pallet Universal Rack	H6J65A
	HP 11642 1075mm Shock Universal Rack	H6J66A
	HP 11642 1200mm Pallet Universal Rack	H6J67A
	HP 11642 1200mm Shock Universal Rack	H6J68A
	HP 11636 1075mm Pallet Universal Rack	H6J77A
	HP 11636 1075mm Shock Universal Rack	H6J78A
	HP 11622 G2 1075mm Pallet Universal Rack	H6J83A
	HP 11622 G2 1075mm Shock Universal Rack	H6J84A
	HP 11614 1075mm Shock Universal Rack	H6J82A

NOTE: Please see the HP 11000 G2 Series Racks QuickSpecs for information on additional racks options and rack specifications.

HP Intelligent Series Rack	
HP 647 1075mm Pallet Intelligent Series Rack	BW911A
HP 647 1075mm Shock Intelligent Series Rack	BW912A
HP 647 1200mm Pallet Intelligent Series Rack	BW913A
HP 647 1200mm Shock Intelligent Series Rack	BW914A
HP 642 1075mm Pallet Intelligent Series Rack	BW903A
HP 642 1075mm Shock Intelligent Series Rack	BW904A
HP 642 1200mm Pallet Intelligent Series Rack	BW907A
HP 642 1200mm Shock Intelligent Series Rack	BW908A

Additional Options

HP 636 1075mm Pallet Intelligent Series Rack	BW895A
HP 636 1075mm Shock Intelligent Series Rack	BW896A
HP 842 1075mm Pallet Intelligent Series Rack	BW917A
HP 842 1075mm Shock Intelligent Series Rack	BW918A

NOTE: Please see the HP Intelligent Series Racks QuickSpecs for information on additional racks options and rack specifications.

HP Value Series Rack

HP V142 1075mm deep Pallet 100 series Rack	AF046A

NOTE: Please see the HP Value Series Rack QuickSpecs for information on additional racks options and rack specifications.

HP Power Distribution Units (PDUs)

HP Basic Power Distribution Unit (bPDU)

HP 4.9kVA 24A High Voltage NA/JP Core Modular Power Distribution Unit	252663-D74
HP 8.3kVA 40A High Voltage NA/JP Core Modular Power Distribution Unit	252663-D75
HP 17.3kVA 48A Three Phase NA/JP Modular Power Distribution Unit	AF511A
HP 3.6kVA 200-240 Volt Detachable C20 Input (12xC13) WW Basic PDU	H5M56A
HP 4.9kVA 208 Volt L6-30 Input (20xC13) NA/JP Basic PDU	H5M58A

NOTE: To learn more about HP Basic Power Distribution Units (bPDU), please visit the HP website at www.hp.com/go/pdu.

HP Monitored Power Distribution Units (mPDU)

HP 2.8kVA 120 Volt L5-30 Input (12xNEMA 5-20R)NA/JP Monitored PDU	D9N43A
HP 3.6kVA 200-240 Volt Detachable C20 Input (16xC13) WW Monitored PDU	D9N45A
HP 4.9kVA 208 Volt L6-30 Input (20xC13/4xC19) NA/JP Monitored PDU	D9N47A
HP 17.3kVA 208 Volt IEC309 60A 3-Phase Input (12xC13/12xC19) NA/JP Monitored PDU	D9N59A

NOTE: Please see the HP Monitored Power Distribution Units QuickSpecs for information on additional options and product specifications.

HP Intelligent Power Distribution Units (iPDU)

HP 4.9kVA 24A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF520A
HP 8.3kVA 40A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF521A
HP 8.6kVA 24A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF522A
HP 17.3kVA 48A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF523A
HP 17.3kVA 48A 208V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit	AF535A
HP 4.9kVA 24A Single Phase NA/JP Intelligent Modular Power Distribution Kit	AF531A
HP 8.6kVA 24A Three Phase NA/JP Intelligent Modular Power Distribution Kit	AF532A

NOTE: Please see the HP Intelligent Power Distribution Units QuickSpecs for information on additional options and product specifications.

HP Rack Mount Consoles, KVM Switches, and Keyboards

Rail Kits

HP 2U Small Form Factor Easy Install Rail Kit	733660-B21

NOTE: This applies for both LFF & SFF models and it does not include cable management arm.

HP 2U Cable Management Arm for Easy Install Rail Kit	733664-B21

HP Rack Mount Consoles

HP TFT7600 G2 KVM Console Rackmount Keyboard US Monitor	AZ870A

NOTE: Please see the HP Rack Console QuickSpecs for information on additional options and product specifications.

HP KVM Switches

HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software	AF620A
HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software	AF621A
HP Server Console 0x2x8 Port Analog Switch	AF616A
HP Server Console 0x2x16 Port Analog Switch	AF617A
HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software	AF618A
HP 1x4 USB/PS2 KVM Console Switch	AF611A

NOTE: To learn more, please visit the HP KVM Switches web page.
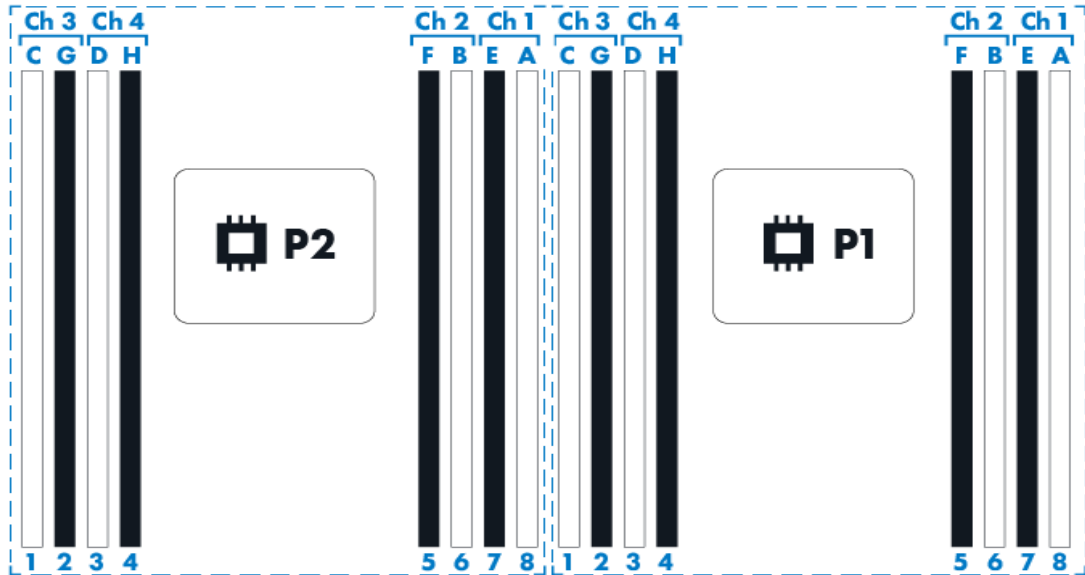
HP 1U Rackmount Keyboard with USB

Additional Options

	HP 1U US Rackmount Keyboard with USB	AG072A

NOTE: Please see the HP 1U Rackmount Keyboard QuickSpecs for information on additional options and product specifications.

HP USB Keyboard and Mouse

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

NOTE: Please see the HP USB Keyboard and Mouse QuickSpecs for information on additional options and product specifications.

HP Uninterruptible Power Systems (UPS)	**HP Rack-mountable UPS**	
	HP R/T3000 G2 2U L530 Low Voltage NA/JP Uninterruptible Power System	AF466A

NOTE: To learn more, please visit the HP Uninterruptible Power Systems (UPS) web page.

HP Care Pack Services	**Foundation Care**	
	HP 3 year 24x7 DL180 Gen9 Foundation Care Service	U7AT3E
	HP 3 year 24x7 with Defective Media Retention DL180 Gen9 Foundation Care Service	U7AT4E
	HP 3 year 24x7 with Comprehensive Defective Material Retention DL180 Gen9 Foundation Care Service	U7AT5E
	Proactive Care	
	HP 3 year 24x7 DL180 Gen9 Proactive Care Service	U7AT6E
	HP 3 year 24x7 with Defective Media Retention DL180 Gen9 Proactive Care Service	U7AT7E
	HP 3 year 24x7 with Comprehensive Defective Material Retention DL180 Gen9 Proactive Care Service	U7AT8E
	Installation & Start-up Services	
	HP Installation ProLiant DL180/DL380e Service	U6E81E
	HP Startup ProLiant DL180/DL380e Service	U6E83E

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

General Memory Population Rules and Guidelines:

- 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 load the channels similarly whenever possible.
- When two processors are installed, balance the DIMMs across the two processors.
- White DIMM slots denote the first slot to be populated in a channel.
- Place the DIMMs with the highest number of ranks in the white slot when mixing DIMMs of different ranks on the same channel.
- Do not mix RDIMMs or LRDIMMs.
- Quad rank RDIMMs are not supported in HP ProLiant DL180 Gen9 servers.
- Quad rank LRDIMMs are capable of up to two 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.
- To realize the performance memory capabilities listed in this document, HP SmartMemory is required.

Memory

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

Memory Bandwidth and Capacity			

[DIMM Type]	Registered Dimms (RDIMMs)		Load Reduced (LRDIMMs)
DIMM Rank	Single Rank	Dual Rank	Quad Rank
DIMM Capacity	8GB	16GB	32GB
Voltage	Std Voltage 1.2V		
SLOTS THAT CAN BE POPULATED			
16 slot servers	16		
MAXIMUM CAPACITY (GB)			
	128	256	512
1 DIMM Per Channel	2133		
2 DIMM Per Channel	2133		

DIMM slot and configuration diagram

Basic memory slot & population diagram
- Population order; start with "A" first, "B" second, "C" third, etc.
- When one processor is installed, install DIMMs in sequential alphabetic order: A, B, C, D, E, F ...
- When two processors are installed, install DIMMs in sequential
- alphabetic order: CPU1-A, CPU2-A,CPU1-B,CPU2-B,CPU1-C, CP2-C

CPU #1 IS PROCESSOR ON RIGHT - LOOKING FROM FRONT OF SERVER

		CPU 1		CPU 2		
	Slot #	population order	Slot #	population order		
Chnl 3	1	C	1	C		Chnl 3
	2	G	2	G		

		CPU 1		CPU 2		
	Slot #	population order	Slot #	population order		
Chnl 4	3	D	3	D		Chnl 4
	4	H	4	H		

		CPU 1		CPU 2		
	Slot #	population order	Slot #	population order		
Chnl 2	5	F	5	F		Chnl 2
	6	B	6	B		

		CPU 1		CPU 2		
	Slot #	population order	Slot #	population order		
Chnl 1	7	E	7	E		Chnl 1
	8	A	8	A		

Memory Speed by Processor Model

Processor Models	Supported Memory Speeds
E5-2609v3, E5-2603v3,	1600MHz
E5-2640v3, E5-2630v3, E5-2620v3, E5-2630Lv3,	1866MHz
E5-2660v3, E5-2650v3, E5-2650Lv3,	2133MHz

Standard and Maximum Memory

Pre-Configured Models	Standard Memory	Maximum Memory Plus Optional Memory	Standard Memory Replaced with Optional Memory

Memory

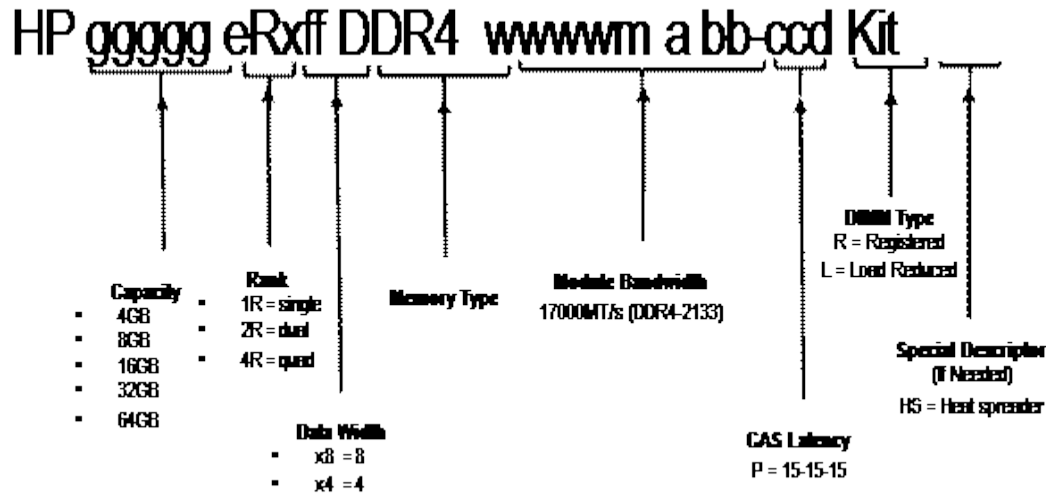| Capacity (Pre-configured Models)	E5-2603v3, E5-2609v3,	8GB (1x8GB)	248GB (15x16GB, 1x8GB)	512GB (16x32GB)

DDR4 memory options part number decoder

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

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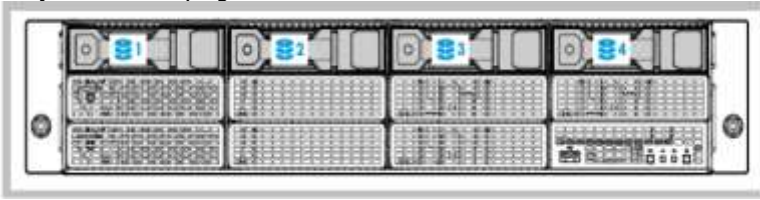- 4GB = 4,096MB
- 8GB = 8,192MB
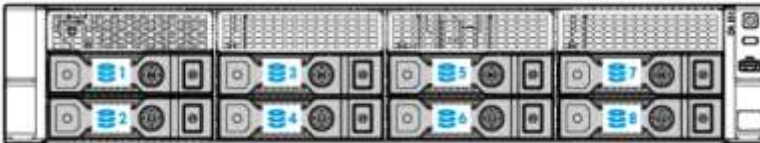- 16GB = 16,384MB
- 32GB = 32,768MB
- 64GB = 65,536MB

HP ggggg eRxff DDR4 wwwwm a bb-ccd Kit __

Capacity
- 4GB
- 8GB
- 16GB
- 32GB
- 64GB

Rank
- 1R = single
- 2R = dual
- 4R = quad

Data Width
- x8 = 8
- x4 = 4

Memory Type

Module Bandwidth
17000MT/s (DDR4-2133)

CAS Latency
P = 15-15-15

DIMM Type
R = Registered
L = Load Reduced

Special Descriptor (If Needed)
HS = Heat spreader

Storage

4-bay LFF non-hot-plug drive model

1-4   4 x LFF SATA Non-Hot Pluggable Hard Drive Bays

8-bay LFF hot-plug drive model

1-8   8 x LFF SATA/SAS/SDD Hot Pluggable Hard Drive Bays
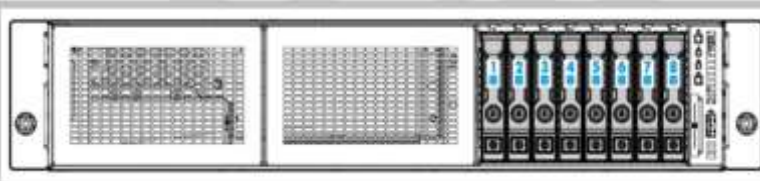
12-bay LFF hot-plug drive model

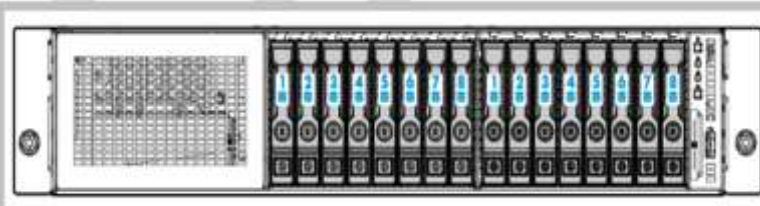1-12   12 x LFF SATA/SAS/SDD Hot Pluggable Hard Drive Bays

8-bay SFF hot-plug drive model

1-8   8 x SFF SATA/SAS/SDD Hot Pluggable Hard drive bays

16-bay SFF hot-plug drive model

1-16   16 x SFF SATA/SAS/SDD Hot Pluggable Hard drive bays

QuickSpecs

Technical Specifications

System Unit		
Dimensions (with bezel)		SFF Drives: 3.44 x 17.54 x 23.9 in (8.75 x 44.55 x 60.7cm) LFF Drives: 3.44 x 17.54 x 23.9 in (8.75 x 44.55 x 60.7 cm)
Weight (approximate)	Maximum: (all hard drives: front + rear, full power supply, and processor installed)	47/6 lb (21.59 kg)
	Minimum: (one SFF hard drive, single power supply, and processor installed. HDD not installed)	36.58 lb (16.59 kg)
Input Requirements	Rated Line Voltage	100 to 240 VAC
	Rated Input Current	For 550W Power Supply: 6.7 A (at 100 VAC) 3.3 A (at 200 VAC)
	Rated Input Frequency	47 to 63 Hz
	Rated Input Power	For 550 W Power Supply: < 670 W (at 100 VAC), < 660 W (at 200 VAC),
BTU Rating	Maximum	For 550 W Power Supply: 2201 BTU/hr (at 100 VAC), 2153 BTU/hr (at 200 VAC)
Power Specifications		To review typical system power ratings use the Power Advisor which is available via the online tool located at URL: www.hp.com/go/proliant-energy-efficient or http://www.hp.com/go/hppoweradvisor - Click on the system of interest. Example: DL180 Gen9- Follow the instructions of the next screens.
Power Supply Output	Rated Steady-State Power	For 550 W Power Supply: 550 W (at 100 VAC), 550 W (at 200 VAC),
	Maximum Peak Power	For 550 W Power Supply: 550 W (at 100 VAC), 550 W (at 200 VAC),
System Inlet Temperature	Standard Operating Support	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 20°C/hr (36°F/hr). The upper limit and rate of change may be limited by the type and number of options installed. System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F).
	Extended Ambient Operating Support	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: www.hp.com/go/proliant/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: www.hp.com/go/proliant/ashrae

Technical Specifications

System performance may be reduced if operating in the extended ambient operating range or with a fan fault.

NOTE: Supports A3 extended ambient, A4 extended ambience will be available in early 2015.

	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
Relative Humidity	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-condensing)	Non-operating	5% to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
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	Entry: 5.4 B
	Base: 5.5 B
	Storage: 6.3 B
	Performance: 5.5 B
L pAm	Entry: 39 dBA
	Base: 39 dBA
	Storage: 46 dBA
	Performance: 38 dBA

Operating

L WAd	Entry: 5.5 B
	Base: 5.6 B
	Storage: 6.3 B
	Performance: 5.5 B
L pAm	Entry: 40 dBA
	Base: 40 dBA
	Storage: 46 dBA
	Performance: 38 dBA

NOTE: The listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.

Emissions Classification (EMC)	FCC Rating	Class A
	Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS14336-1; CNS13438; GB4943; GB9254; 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.
NOTE: The listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.

HP Dynamic Smart Array B140i Controller	**Number of PCI links**	Four
	PCI link rate	4 Gb/s
	Storage protocol support	SATA

Technical Specifications

SAS/SATA peak data tranfer rate	6 Gb/s
Number of SAS/SATA links	10 links
SAS/SATA connectivity	2x4 connectors; 2x1 connectors
Expander support	No
Drives supported (max)	Up to 10 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

HP Embedded Dual Port 361i Adapter	**Network Interface**	10Base-T/100Base-TX/1000Base-TX	
	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)	
	Ports		
	Data Transfer Method	PCI Express v 2.0, 5.0 GT/s, two lanes (x2)	
	Controller	Intel I350 Powerville	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s per port, 40 Mb/s combined
		10Base-T (Full-Duplex)	20 Mb/s per port, 80 Mb/s combined
		100Base-TX (Half-Duplex)	100 Mb/s per port, 400 Mb/s combined
		100Base-TX (Full-Duplex)	200 Mb/s per port, 800 Mb/s combined
		1000Base-TX (Half and Full-Duplex)	1000Mb/s per port, 4000 Mb/s combined
	Connector	Two RJ-45	
	Cable Support	10 Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
		10/100/1000 Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)

Environment-friendly Products and Approach	**End-of-life Management and Recycling**	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. 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:

Technical Specifications

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.

Summary of Changes

Date	Version History	Action	Description of Change
9/19/2014	From Version 1 to 2	Changed	Changes made throughout the entire QuickSpecs.

hp.com/qref/dl180gen9