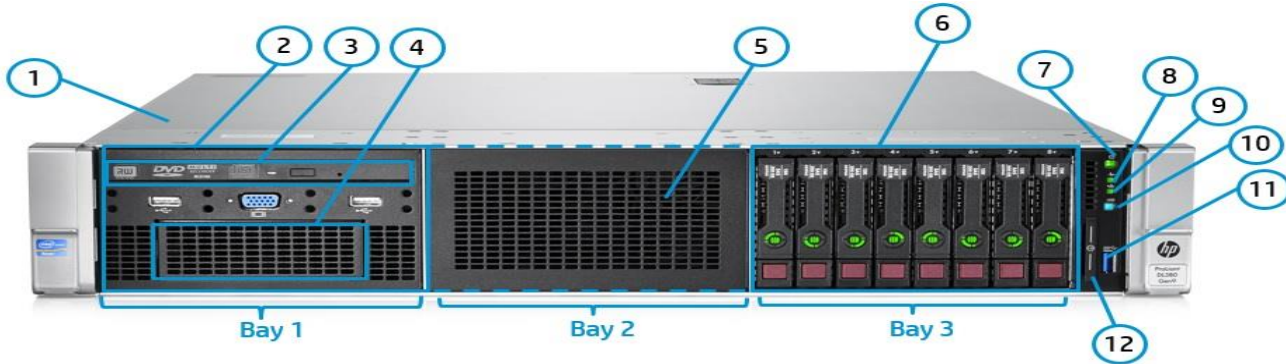


Overview

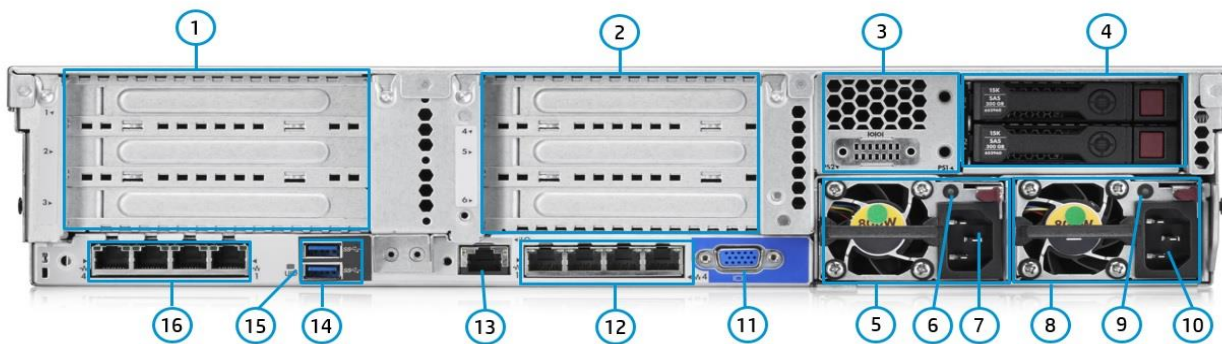
HP ProLiant DL380 Generation9 (Gen9)

The HP ProLiant DL380 Gen9 Server delivers the best performance and expandability in the HP 2P rack portfolio. Reliability, serviceability and near continuous availability, backed by a comprehensive warranty, make it ideal for any environment. Deploy the data center standard.



Front View - 8SFF Chassis with Optional Universal Media Bay shown

1. Quick removal access panel
2. Universal Media bay. 2 USB 2.0 and VGA standard (8SFF bay optional)
3. Optional Optical drive. Requires Universal Media bay
4. Optional 2 SFF HDD, blank shown. Requires Universal Media bay.
5. Drive Bay 2. Blank shown, 8SFF optional.
6. 8 SFF Drive Cage Bay
7. Power On/Standby button and system power LED button
8. Health LED
9. NIC status
10. UID button
11. USB 3.0
12. Serial label pull tag

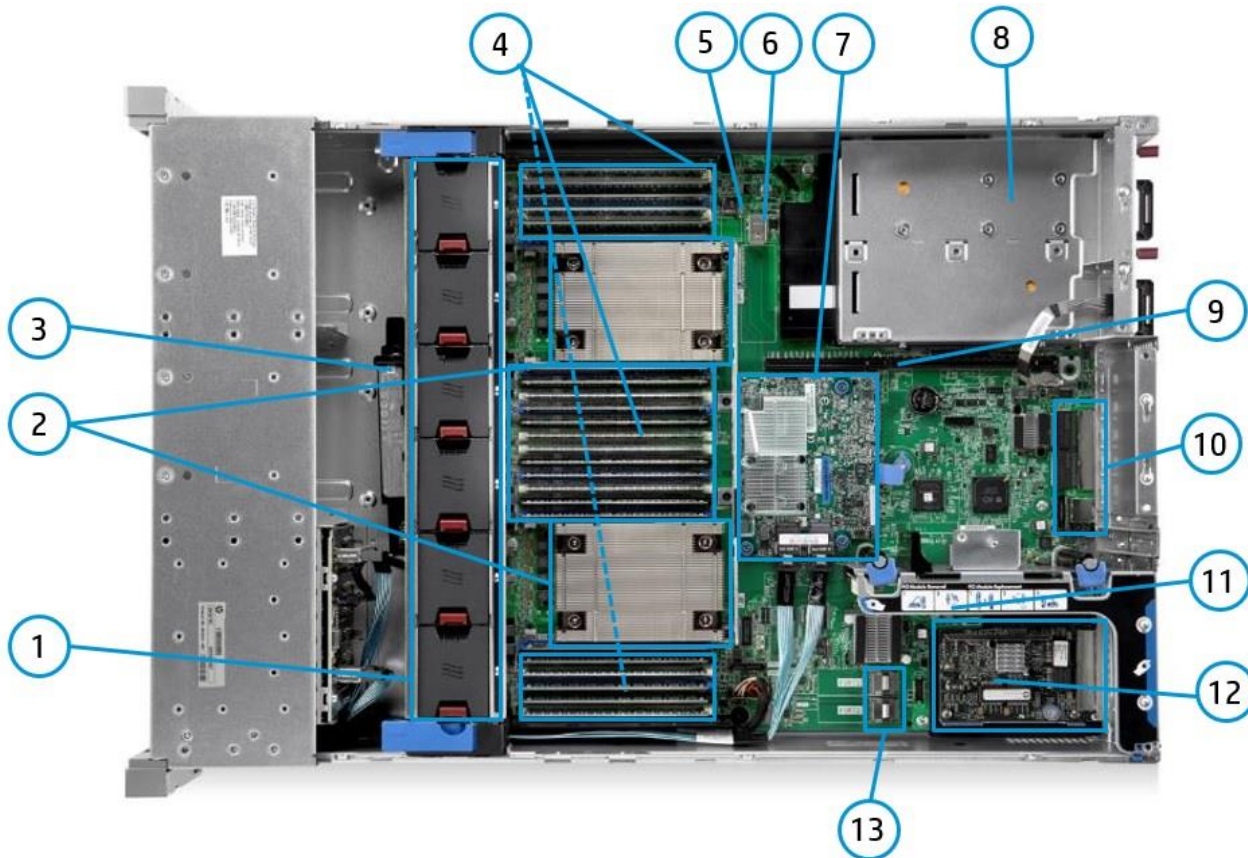


Rear view

1. PCI Slots (Slots 1-3 top to bottom, riser shipped standard)
2. PCI Slots (Slots 4-6 top to bottom, requires second riser card, and second processor)
3. Optional serial port
4. Optional rear 2 SFF HDD (supported in 24 SFF or 12 LFF front end)

Overview

5. HP Flexible Slot Power Supply bay 1 (800w shown)
6. Power supply Power LED
7. Power supply Power connection
8. HP Flexible Slot Power Supply bay 2 (800w shown)
9. Power supply Power LED
10. Power supply Power connection
11. VGA connector
12. Embedded 4 x 1GbE Network Adapter
13. Dedicated iLO connector
14. USB 3.0 connectors (2)
15. Unit ID LED
16. Optional FlexibleLOM ports (Shown: 4 x 1GbE)



Internal View

1. Fan cage shown with 6 standard Hot-plug fans (High Ambient temperature fans optional)
2. 2 Processors, heatsink showing, with HP Smart Socket Guide
3. Optional HP Smart Storage Battery
4. DDR4 DIMM slots. Shown fully populated in 24 slots (12 per processor)
5. MicroSD card slot
6. Internal USB 3.0 connector
7. Optional HP Flexible Smart Array or Smart HBA (H240ar shown)
8. (Under) Hot Plug redundant HP Flexible Slot Power supplies

Overview

9. Connection for second (optional) riser (Required second CPU)
 10. Embedded 4x1Gbe NIC
 11. Primary PCIe riser, standard (Optional double wide GPU riser)
 12. Optional Flexible LOM slot
 13. X4 SATA ports (1 and 2)
-

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 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
	E5-2687Wv3	3.1GHz	10	25MB	160W	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	25MB	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	25MB	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	25MB	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	8.0GT/s	1600
	E5-2603v3	1.6GHz	6	15MB	85W	6.4GT/s	1600

Note that all processors above 120W use a high efficiency Heatsink. Doublewide PCIe cards are only supported with this Heatsink. For processors with a standard Heatsink that require double wide cards we would need to leverage the Graphics Enablement kit (719082-B21)

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) 4GB NAND
NOTE: 1GB USB user space configurable via UEFI and accessible via iLO. Read and learn more in the [iLO QuickSpecs](#).

Memory Type:
 One of the following depending on Model HP SmartMemory
 DDR4 Registered (RDIMM) or Load Reduced (LRDIMM)

DIMM Slots Available	24	(12 DIMM slots per processor, 4 channels per processor, 3 DIMMs per channel)
Maximum Capacity (LRDIMM)	768GB	(24 x 32GB LRDIMM @2133MHz)
Maximum Capacity (RDIMM)	384GB	(24 x 16GB RDIMM @2133MHz)

Standard Features

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.

Expansion Slots

Primary Riser (Standard)

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
1	PCIe 3.0	x16	x8	7	Full-height, half-length Slot	Proc 1
2	PCIe 3.0	x16	x8	10	Full-height, half-length Slot	Proc 1
3	PCIe 3.0	x8	x8	13	Half Length, Full Height Slot	Chipset

- Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
** Indicates the number of physical electrical lanes running to the connector.
- **NOTE:** All slots support up to 150w PCIe cards, but an additional Power Cord Option is required (PN 669777-B21). See Option Section below for offering.

Slot 2 PCIe Riser (Optional 3-slot) 719073-B21

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Device Number	Form Factor	Notes
4	PCIe 3.0	x16	x16	16		Full Height, Full Length Slot	Proc 2
5	PCIe 3.0	x16	x16	20		Full Height, Full Length Slot	Proc 2
6	PCIe 3.0	x8	x8	23		Full-height, half-length Slot	Proc 2

- * Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
- ** Indicates the number of physical electrical lanes running to the connector.
- NOTE:** When populating the second optional riser slot, the second processor must be installed.
- NOTE:** All slots support up to 150w PCIe cards, but an additional Power Cord Option is required (669777-B21). See Option Section below for offering.

Slot 1 PCIe Riser (Optional 2-slot) 719076-B21

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Device Number	Form Factor	Notes
4	PCIe 3.0	x16	x16	16		Full Height, Full Length Slot	Proc 1
5	PCIe 3.0	x8	x8	16		Full-height, half-length Slot	Proc 1

- * Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
- ** Indicates the number of physical electrical lanes running to the connector.
- NOTE:** When populating the second optional riser slot, the second processor must be installed.
- NOTE:** All slots support up to 150w PCIe cards, but an additional Power Cord Option is required (669777-B21). See Option Section below for offering.

Storage Controller One of the following depending on Model

Entry Models	HP Dynamic Smart Array B140i Controller NOTE: The embedded B140i controller will operate in UEFI only mode. For legacy support an additional controller will be needed, and for CTO orders please also select the Legacy mode settings part, 758959-B22.
Base Models	HP Dynamic Smart Array B140i Controller HP Flexible Smart Array P440ar/2G FIO Controller HP Flexible Smart Array P840ar/4GB
Performance Models	HP Dynamic Smart Array B140i Controller HP Flexible Smart Array P440ar/2GB

Standard Features

Internal Storage Devices One of the following depending on Model	Optical Drive	Ships standard in Performance Models Optional: DVD-ROM, DVD-RW
	Hard Drives	None ship standard 8 SFF with optional Universal Media bay or 8SFF bay options 24 SFF plus optional 2 SFF drives rear 12 LFF plus optional 3 LFF drives rear 4 LFF drive bays total NOTE: The Universal Media Bay (724865-B21) not available with the LFF chassis or the 24SFF front end, and can only be populated in Bay1 NOTE: The 8SFF can be upgraded with a drive cage to 16 or 24 SFF with field upgrades. NOTE: The 4LFF chassis cannot be upgraded to 12LFF in the field. NOTE: All Pre-configured Chassis come with an embedded 10-Port SATA controller. Optional HP Flexible Smart Array and Smart SAS HBA Controllers can be added. NOTE: Only the 24SFF and 12LFF Chassis support rear drives. NOTE: Universal media bay is not supported in the LFF configurations. Optical support is offered via USB DVD-RW Drive (701498-B21)
	Hard Drive Bays	

Maximum Internal Storage	CAPACITY	CONFIGURATION
Hot Plug SFF SAS	31.2TB	24+2 x 1.2TB (with optional rear SFF drive cage)
Hot Plug SFF SATA	26.0TB	24+2 x 1TB (with optional SFF drive cage)
Hot Plug LFF SAS	90.0TB	12+3 x 6TB (with optional rear LFF drive cage)
Hot Plug LFF SATA	90.0TB	12+3 x 6TB (with optional rear LFF drive cage)
Hot Plug SFF SAS SSD	31.2TB	24+2 x 1.6TB (with optional rear SFF drive cage)
Hot Plug LFF SATA SSD	24.0TB	12+3 x 1.6TB (with optional rear LFF drive cage)

Power Supply	HP 500W Flex Slot Platinum Hot Plug Power Supply HP 800W Flex Slot Platinum Hot Plug Power Supply HP 1400W Flex Slot Platinum Plus Hot Plug Power Supply 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 (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 . 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.

System Fans One of the following depending on Model	Non-redundant	Redundant
	2P model NOTE: 1P models typically ship with 4 standard fans. The second processor option kit contains 2 additional fans.	



Standard Features

NOTE: High Performance Temperature Fan Kit is available to meet ambient temperature environments (719079-B21)

NOTE: the 12LFF and 24SFF chassis ship with 6 High Performance fans as standard

NOTE: High Performance Temperature Fan Kit is required for GPU support.

NOTE: Additional HP 12Gb SAS Expander Card (727250-B21) and the 8SFF Bay kit (719067-B21) will ship with 6 High efficiency fans

Interfaces	Serial	optional
	Video	2 (1 front, optional via Universal Media Bay, 724865-B21), 1 back not active simultaneously
	FlexibleLOM Network Ports	4 x 1Gb ports shipping standard with optional FlexibleLOM
	HP iLO Remote Management Network Port	1 Gb Dedicated
	Micro SD Slot	1 Micro SD
		NOTE: The Micro 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 3.0	Up to 5 total: 1 front, 2 rear, 2 internal (secure), 2 optional USB 2.0 front via Universal Media Bay
	SID (Systems Insight Display)	Optional
		Not shipping as standard. Available as a CTO option or as a field upgrade (768900-B21)

Operating Systems and Virtualization Software Support for ProLiant Servers

[Microsoft Windows Server](#)

[Canonical Ubuntu](#)

[Red Hat Enterprise Linux \(RHEL\)](#)

[SUSE Linux Enterprise Server \(SLES\)](#)

[Oracle Solaris](#)

[VMware](#)

[Citrix XenServer](#)

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/DL380Gen9>

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 24 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 10-Port SATA, B140i as standard

Optional 3 slot riser (x16, x16, x8), or 2 slot (x16, x8)

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

Redundant Power Supply

Optical Drive supported via Universal Media Bay

NOTE: The Universal Media bay provides front VGA and 2xUSB, plus ability to add 2SFF and Optical.

NOTE: Universal Media bay only available with 8 or 8+SFF chassis & can be populated in Bay1 only.

HP Legacy Mode (FIO only, 758959-B22)

NOTE: UEFI is the default model for CTO and BTO skus. Can change default to legacy via CTO.

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

NOTE: This support is on the optional Universal Media Bay

Energy Star

ASHRAE A3/A4



Standard Features

For details on configurations supporting ASHRAE A3/4 please see: www.hp.com/servers/ASHRAE

UEFI (Unified Extensible Firmware Interface Forum)

Note UEFI is the default for the DL380 Gen9. Legacy model can be selected in the field, or as a CTO option (758959-B22)

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

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 - 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.

NOTE: Legacy model can be enabled with a CTO build (758959-B22). All standard skus ship with UEFI as default.

Form Factor

One of the following depending on Model

2U Rack form factor
 8 SFF & 24SFF Drive Bay Version:
 3.44 x 17.54 x 26.75 in (8.73 x 44.55 x 67.94 cm)
 4 LFF & 12LFF Drive Bay Version:
 3.44 x 17.54 x 28.75 in (8.73 x 44.55 x 73.02 cm)

NOTE: Dimensions without bezel

Embedded Management

HP Integrated Lights-Out (HP iLO) Monitor your servers for ongoing management, service alerting, reporting and remote management with 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 www.hp.com/go/restfulapi .
Intelligent Provisioning	Provision servers by discovering and deploying 1 to few servers with Intelligent Provisioning. Learn more at www.hp.com/go/intelligentprovisioning .
Embedded Remote Support	HP's embedded remote support, 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
 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, 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 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>.

HP OneView

Powerful converged management of servers, storage, and network for IT service automation and infrastructure simplicity, see www.hp.com/go/oneview.

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 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](http://www.hp.com/go/rackandpower).

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 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.

Optional Features

- **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 turn a set of heterogeneous and disconnected physical disk drives in your servers and storage devices into a single pool of logical storage capacity.

NOTE: For more information available 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 - Call to Repair commitment, 24x7 coverage, 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 and the industry's highest level of hardware support commitment – hardware will be returned to operating conditions within six (6) hours after you open your case. Comes with collaborative software call management with two hour call back to reduce troubleshooting.

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 Proactive Care - 24x7 coverage, three year Care Pack Service
This service helps prevent problems and stabilize IT by utilizing secure, real-time, predictive analytics and proactive consultations when your products are connected to HP. Includes four hour response for hardware, and collaborative call management for software with a two hour callback. <http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

HP ProLiant ML350 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>

HP Foundation Care

Hardware and software support services provide easy connection to HP to resolve support issues quickly. Includes collaborative call management for industry leading software; full software support may also be purchased, giving you one place to call for help. www.hp.com/services/foundationcare

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.



Service and Support

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 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 (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.

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

[SKU Number]	766342-B21	752686-B21	752688-B21	752687-B21
Model Name	HP ProLiant DL380 Gen9 E5-2609v3 1P 8GB-R B140i 4LFF SATA 500W PS Entry Server	HP ProLiant DL380 Gen9 E5-2609v3 1P 8GB-R B140i 8SFF SATA 500W PS Entry Server	HP ProLiant DL380 Gen9 E5-2620v3 1P 16GB-R P440ar 12LFF 2x800W PS Base Server	HP ProLiant DL380 Gen9 E5-2620v3 1P 16GB-R P440ar 8SFF 500W PS Base Server
Processor	Intel® Xeon® E5-2609v3	Intel® Xeon® E5-2609v3	Intel® Xeon® E5-2620v3	
Number of Processors	One			
Memory	8GB (1x8GB Registered DIMMs, 2133 MHz) NOTE: with the E5-2609v3 this memory DIMM will only operate at 1600MHz	8GB (1x8GB Registered DIMMs, 2133 MHz) NOTE: with the E5-2609v3 this memory DIMM will only operate at 1600MHz	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 4-port 331i Adapter			
Storage Controller	HP Dynamic Smart Array B140i		HP Flexible Smart Array P440/4G Controller	HP Flexible Smart Array P440ar/2GB
Hard Drive	None ship standard		None ship standard; includes 10 LFF hard drive blanks	None ship standard
Internal Storage	4 LFF HDD Bays	8 SFF HDD Bays	12 LFF HDD Bays	8 SFF HDD Bays
Optical Drive Bay	Optional via HP Mobile USB DVDRW Drive (701498-B21)	Optional via Universal Media Bay	Optional via HP Mobile USB DVDRW Drive (701498-B21)	Optional via Universal Media Bay
Optical Drive				
PCI-Express Slots	3 PCIe slots (+3 PCI slots available with upgrade option, second processor required)			
Power Supply	(1) HP 500W Flex Slot Platinum Power Supply		(2) HP 800W Flex Slot Platinum Power Supply	(1) HP 500W Flex Slot Platinum Power Supply
Fans	4 hot plug fans, redundant	4 hot plug fans, redundant	6 hot plug high performance temperature fans, redundant	4 hot plug fans, redundant
Management	iLO Management (standard), Intelligent Provisioning (standard), iLO Advanced (optional), Insight Control (optional), HP OneView (optional)	iLO Management (standard), Intelligent Provisioning (standard), iLO Advanced (optional), Insight Control (optional), HP OneView (optional)		
Energy Star				
Accessories				
Integrated Lights Out				
Form Factor	Rack (2U), HP Easy Install Rails		Rack (2U), HP Easy Install Rails with CMA	

Pre-configured Models

Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response
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Performance Models

[SKU Number]	752689-B21
Model Name	HP ProLiant DL380 Gen9 E5-2650v3 2P 32GB-R P440ar 8SFF 2x10Gb 2x800W Perf Server
Processor	Intel® Xeon® E5-2650v3
Number of Processors	Two
Memory	32GB (2x16GB Registered DIMMs, 2133 MHz)
Network Controller	HP Embedded 4x1Gb, plus 2x10Gb-T Flexible LOM
Storage Controller	HP Flexible Smart Array P440ar/2GB
Hard Drive	None ship standard
Internal Storage	8 SFF HDD Bays
Optical Drive Bay	---Request to add Override Item or delete Item
Optical Drive	HP Half-Height SATA DVD-RW Optical Drive
PCI-Express Slots	6 PCIe slots (includes second riser slot upgrade option)
Power Supply	(2) HP 800W Flex Slot Platinum Power Supply
Fans	4 hot plug fans, redundant
Management	iLO Management (standard), Intelligent Provisioning (standard), iLO Advanced (standard), HP OneView (optional)
Energy Star	Meets Energy Star requirements
Form Factor	Rack (2U), HP Easy Install Rails with CMA
Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

Note that UEFI is the standard default for all Predefined models

Country Code Key	xx1 = B21	Worldwide
	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 ProLiant DL380 Gen9 8SFF Configure-to-order Server	HP ProLiant DL380 Gen9 24SFF Configure-to-order Server	HP ProLiant DL380 Gen9 12LFF Configure-to-order Server
SKU Number	719064-B21	767032-B21	719061-B21
Processor	2 (optional) x HP Smart Socket Guides		
DIMMSlots	24 DIMM slots for RDIMM, LRDIMM DDR4 Memory		
Storage Controller	HP Dynamic Smart Array B140i, plus optional HP Flexible Smart Array or Smart HBA controller		
PCIe	3 PCIe slots (+3 PCI slots available with upgrade option, second processor required)		
Drive Cage	8SFF Hot Plug	24SFF Hot Plug	12LFF Hot Plug
Network Controller	HP Embedded 1Gb Ethernet 4-port 331i Adapter, plus optional HP Flexible LOM		
Fans	4 hot plug fans, redundant	6 hot plug high performance temperature fans, redundant	
Management	iLO Management (standard), Intelligent Provisioning (standard), iLO Advanced (optional), Insight Control (optional), HP OneView (optional)	iLO Management (standard), Intelligent Provisioning (standard), iLO Advanced (optional), Insight Control (optional), HP OneView (optional)	
USB	1 front, 1 internal, 2 rear, (2 front optional)	1 front, 1 internal, 2 rear	
Ears	HP Quick Release Ears		

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, 4 is socket/segment designation, 00 = Processor SKU, x = L for low power SKUs and v# (not yet designated) = version number.

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.

Configuration Information - Factory Integrated Models

- 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: 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: www.hp.com/go/ddr4memory-configurator

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: 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 Integratable 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 one or more 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.
- Please see the QuickSpecs for Technical Specifications and additional information: 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: www.hp.com/go/ProLiantNICs
- These options are upgradeable and can be changed from the original configuration after the server is shipped.



Configuration Information - Factory Integrated Models

- 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 embedded B140i controller will operate in UEFI only mode. For legacy support an additional controller will be needed, and for CTO orders please also select the Legacy mode settings part, 758959-B22
- 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.

HP Graphics Options Select one or more graphics adapter from Additional options section below.

- Please see the HP Power Advisor for estimated power consumption of your individual system configuration prior to installing GPUs. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor
- This section may contain FIO options, please see HP Computation & Graphics Accelerators section below.

HP Cooling Options Select one or more Fan Kits 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.

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 (p/n 695539-001).
- 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 DL380 Gen9 Universal Media Bay Kit 724865-B21 NOTE: The HP DL380 Gen9 Universal Media bay provides front VGA and 2xUSB 3.0; plus support for 2xSFF front drives (724864-B21) and ODD support (No included); and can only be located in Bay1 in either a 8SFF or 8+8SFF front end. NOTE: This can only be populated in Bay1</p> <p>HP DL380 Gen9 Graphics Enablement Kit 719082-B21 NOTE: This kit includes alternative 2 Heatsinks plus 6 cables to enable GPU support with a 2P configuration. Other limitations apply, see Graphic section for more details.</p> <p>HP DL380 Gen9 High Performance Temperature Fan Kit 719079-B21 NOTE: This kit is required for specific Ambient temperature environments, more details here: www.hp.com/go/proliant/Ashrae NOTE: This kit is required for some GPGPU options, please see Graphics section for more details by card.</p> <p>HP DL380 Gen9 2SFF Front/Rear SAS/SATA Kit 724864-B21 NOTE: For 2SFF front the Universal Media Bay (724865-B21) is required. NOTE: 2SFF in the rear is only supported with a 24SFF or 12LFF (719061-B21) front end.</p> <p>HP DL380 Gen9 3LFF Rear SAS/SATA Kit 768856-B21 NOTE: This is only supported in the 12LFF chassis (719061-B21) NOTE: 3LFF rear drives will consume the 2nd riser expansion slot.</p> <p>HP DL380 Gen9 Primary 2 Slot GPU Ready Riser Kit 719076-B21 Slot1: 1x Gen3 x16 FH/FL, 1xGen3 x8 FH/HL</p> <p>HP DL380 Gen9 Secondary 3 Slot GPU Ready Riser Kit 719073-B21 Slot2: 2xGen3 x16 FH/FL, 1xGen3 x8 FH/HL</p> <p>HP DL380 Gen9 8SFF Bay1 Cage/Backplane Kit 719067-B21 NOTE: To add an additional 8SFF drive cage in Bay1. NOTE: This ships with 6 High Efficiency Fans. NOTE: Selecting this option does not allow you to select the Universal Media Bay.</p> <p>HP DL380 Gen9 Additional 8SFF Bay2 Cage/Backplane Kit 768857-B21 NOTE: To add an additional 8SFF drive cage in Bay 2.</p> <p>HP 12Gb SAS Expander Card with Cables for DL380 Gen9 727250-B21 NOTE: SAS expander to enable 24SFF field upgrade NOTE: This kit included 6 High Efficiency Fans.</p> <p>HP DL380 Gen9 Systems Insight Display Kit 768900-B21 NOTE: The Systems Insight Display no longer ships as standard, but is available as a Factory Integrated, or field upgrade option.</p> <p>HP Legacy FIO Mode Setting 758959-B22 NOTE: UEFI is the default, this FIO part can be used for CTO to enable Legacy mode.</p>
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HP Processors

Entry Processors - E5-2600v3 series Processors

HP DL380 Gen9 Intel® Xeon® E5-2603v3 (1.6GHz/6-core/15MB/85W) FIO Processor Kit	719053-L21
HP DL380 Gen9 Intel® Xeon® E5-2603v3 (1.6GHz/6-core/15MB/85W) Processor Kit	719053-B21
HP DL380 Gen9 Intel® Xeon® E5-2609v3 (1.9GHz/6-core/15MB/85W) FIO Processor Kit	719052-L21
HP DL380 Gen9 Intel® Xeon® E5-2609v3 (1.9GHz/6-core/15MB/85W) Processor Kit	719052-B21

Base Processors - E5-2600v3 series Processors

HP DL380 Gen9 Intel® Xeon® E5-2620v3 (2.4GHz/6-core/15MB/85W) FIO Processor Kit	719051-L21
HP DL380 Gen9 Intel® Xeon® E5-2620v3 (2.4GHz/6-core/15MB/85W) Processor Kit	719051-B21
HP DL380 Gen9 Intel® Xeon® E5-2623v3 (3GHz/4-core/10MB/105W) FIO Processor Kit	779556-L21
HP DL380 Gen9 Intel® Xeon® E5-2623v3 (3GHz/4-core/10MB/105W) Processor Kit	779556-B21
HP DL380 Gen9 Intel® Xeon® E5-2630v3 (2.4GHz/8-core/20MB/85W) FIO Processor Kit	719050-L21
HP DL380 Gen9 Intel® Xeon® E5-2630v3 (2.4GHz/8-core/20MB/85W) Processor Kit	719050-B21
HP DL380 Gen9 Intel® Xeon® E5-2630Lv3 (1.8GHz/8-core/20MB/55W) FIO Processor Kit	719060-L21
HP DL380 Gen9 Intel® Xeon® E5-2630Lv3 (1.8GHz/8-core/20MB/55W) Processor Kit	719060-B21

Core Options

HP DL380 Gen9 Intel® Xeon® E5-2637v3 (3.5GHz/4-core/15MB/135W) FIO Processor Kit Ships with a High Performance Heatsink	719058-L21
HP DL380 Gen9 Intel® Xeon® E5-2637v3 (3.5GHz/4-core/15MB/135W) Processor Kit Ships with a High Performance Heatsink	719058-B21
HP DL380 Gen9 Intel® Xeon® E5-2640v3 (2.6GHz/8-core/20MB/90W) FIO Processor Kit	719049-L21
HP DL380 Gen9 Intel® Xeon® E5-2640v3 (2.6GHz/8-core/20MB/90W) Processor Kit	719049-B21
Performance Processors - E5-2600v3 series Processors	
HP DL380 Gen9 Intel® Xeon® E5-2643v3 (3.4GHz/6-core/20MB/135W) FIO Processor Kit Ships with a High Performance Heatsink	719057-L21
HP DL380 Gen9 Intel® Xeon® E5-2643v3 (3.4GHz/6-core/20MB/135W) Processor Kit Ships with a High Performance Heatsink	719057-B21
HP DL380 Gen9 Intel® Xeon® E5-2650v3 (2.3GHz/10-core/25MB/105W) FIO Processor Kit	719048-L21
HP DL380 Gen9 Intel® Xeon® E5-2650v3 (2.3GHz/10-core/25MB/105W) Processor Kit	719048-B21
HP DL380 Gen9 Intel® Xeon® E5-2650Lv3 (1.8GHz/12-core/30MB/65W) FIO Processor Kit	719059-L21
HP DL380 Gen9 Intel® Xeon® E5-2650Lv3 (1.8GHz/12-core/30MB/65W) Processor Kit	719059-B21
HP DL380 Gen9 Intel® Xeon® E5-2660v3 (2.6GHz/10-core/25MB/105W) FIO Processor Kit	762764-L21
HP DL380 Gen9 Intel® Xeon® E5-2660v3 (2.6GHz/10-core/25MB/105W) Processor Kit	762764-B21
HP DL380 Gen9 Intel® Xeon® E5-2667v3 (3.2GHz/8-core/20MB/135W) FIO Processor Kit Ships with a High Performance Heatsink	719056-L21
HP DL380 Gen9 Intel® Xeon® E5-2667v3 (3.2GHz/8-core/20MB/135W) Processor Kit Ships with a High Performance Heatsink	719056-B21
HP DL380 Gen9 Intel® Xeon® E5-2670v3 (2.3GHz/12-core/30MB/120W) FIO Processor Kit Ships with a High Performance Heatsink	719046-L21
HP DL380 Gen9 Intel® Xeon® E5-2670v3 (2.3GHz/12-core/30MB/120W) Processor Kit Ships with a High Performance Heatsink	719046-B21
HP DL380 Gen9 Intel® Xeon® E5-2680v3 (2.5GHz/12-core/30MB/120W) FIO Processor Kit Ships with a High Performance Heatsink	762766-L21
HP DL380 Gen9 Intel® Xeon® E5-2680v3 (2.5GHz/12-core/30MB/120W) Processor Kit Ships with a High Performance Heatsink	762766-B21
HP DL380 Gen9 Intel® Xeon® E5-2683v3 (2GHz/14-core/35MB/120W) FIO Processor Kit Ships with a High Performance Heatsink	719055-L21
HP DL380 Gen9 Intel® Xeon® E5-2683v3 (2GHz/14-core/35MB/120W) Processor Kit Ships with a High Performance Heatsink	719055-B21
HP DL380 Gen9 Intel® Xeon® E5-2690v3 (2.6GHz/12-core/30MB/135W) FIO Processor Kit Ships with a High Performance Heatsink	719044-L21
HP DL380 Gen9 Intel® Xeon® E5-2690v3 (2.6GHz/12-core/30MB/135W) Processor Kit Ships with a High Performance Heatsink	719044-B21
HP DL380 Gen9 Intel® Xeon® E5-2695v3 (2.3GHz/14-core/35MB/120W) FIO Processor Kit Ships with a High Performance Heatsink	762760-L21
HP DL380 Gen9 Intel® Xeon® E5-2695v3 (2.3GHz/14-core/35MB/120W) Processor Kit Ships with a High Performance Heatsink	762760-B21
HP DL380 Gen9 Intel® Xeon® E5-2697v3 (2.6GHz/14-core/35MB/145W) FIO Processor Kit Ships with a High Performance Heatsink	719054-L21
HP DL380 Gen9 Intel® Xeon® E5-2697v3 (2.6GHz/14-core/35MB/145W) Processor Kit Ships with a High Performance Heatsink	719054-B21
HP DL380 Gen9 Intel® Xeon® E5-2698v3 (2.3GHz/16-core/40MB/135W) FIO Processor Kit Ships with a High Performance Heatsink	781913-L21
HP DL380 Gen9 Intel® Xeon® E5-2698v3 (2.3GHz/16-core/40MB/135W) Processor Kit Ships with a High Performance Heatsink	781913-B21
HP DL380 Gen9 Intel® Xeon® E5-2699v3 (2.3GHz/18-core/45MB/145W) FIO Processor Kit Ships with a High Performance Heatsink	781915-L21
HP DL380 Gen9 Intel® Xeon® E5-2699v3 (2.3GHz/18-core/45MB/145W) Processor Kit Ships with a High Performance Heatsink	781915-B21
HP DL380 Gen9 Intel® Xeon® E5-2687Wv3 (3.1GHz/10-core/25MB/160W) FIO Processor Kit	762768-L21

Core Options

HP DL380 Gen9 Intel® Xeon® E5-2687Wv3 (3.1GHz/10-core/25MB/160W) Processor Kit 762768-B21

NOTE: Up to 2 processors supported. Performance and Energy Star Model configurations include two processors.

NOTE: HT indicates that the processor model supports Intel® Hyper-Threading Technology

NOTE: Turbo2: Intel® Turbo Boost Technology 2.0 provides more computing power when you need it with performance that adapts to spikes in your workload and delivers more performance upside than then previous generation turbo technology.

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 2 additional FANs for factory of field installation.

NOTE: Double wide PCIe cards are only supported in risers with the Processors leveraging the High Performance Heatsink. For Processors requiring double wide GPU support please order the GPU enablement kit (719082-B21)

HP Memory

Registered DIMMs (RDIMMs) for E5-2600v3 Series

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

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

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

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

HP Optical Drives

HP 9.5mm SATA DVD-ROM JackBlack Gen9 Optical Drive 726536-B21
NOTE: The Universal Media Bay (724865-B21) is required for this option

HP 9.5mm SATA DVD-RW JackBlack G9 Optical Drive 726537-B21
NOTE: The Universal Media Bay (724865-B21) is required for this option

HP Mobile USB Non Leaded System DVD RW Drive 701498-B21

HP Drives

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

HP 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Dual Port Enterprise 3yr Warranty Hard Drive 718162-B21

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 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive 765424-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

HP 146GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 652605-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

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 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

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 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

Core Options

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

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 4TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive 695510-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

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 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

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

HP 1.6TB 12G SAS Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive 762272-B21

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

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



Core Options

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
Disk Enclosures	
HP D2600 w/12 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 48TB Bundle	E7W32A
Hard Drive Kits	
HP DL380 Gen9 8SFF Bay1 Cage/Backplane Kit	719067-B21
HP DL380 Gen9 Additional 8SFF Bay2 Cage/Backplane Kit	768857-B21
HP DL380 Gen9 2SFF Front/Rear SAS/SATA Kit	724864-B21
HP DL380 Gen9 3LFF Rear SAS/SATA Kit	768856-B21
Media Bay Kits	
HP DL380 Gen9 Universal Media Bay Kit	
NOTE: The Universal Media Bay offers front VGA and 2xUSB 3.0, plus ability to add optional Optical drive, or 2SFF.	724865-B21
NOTE: This is only compatible with the 8SFF or 8+8 SFF front end configurations.	
HP Networking	
1 Gigabit Ethernet adapters	
HP Ethernet 1Gb 4-port 331T Adapter	647594-B21
HP Ethernet 1Gb 2-port 361T Adapter	652497-B21
HP Ethernet 1Gb 2-port 332T Adapter	615732-B21
HP Ethernet 1Gb 4-port 366FLR FIO Adapter	684217-B21
HP Ethernet 1Gb 4-port 331FLR Adapter	629135-B22
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 560SFP+ Adapter	665249-B21
HP Ethernet 10Gb 2-port 561T Adapter	716591-B21
HP Ethernet 10Gb 2-port 570SFP+ Adapter	718904-B21



Core Options

HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter 727060-B21

HP StoreFabric CN1200E 10Gb Converged Network Adapter E7Y06A

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: www.hp.com/go/ProLiantNICs.

FlexibleLOM Adapters

HP Ethernet 1Gb 4-port 366FLR Adapter 665240-B21

HP FlexFabric 10Gb 2-port 533FLR-T Adapter 700759-B21

HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter 665243-B21

HP Ethernet 10Gb 2-port 561FLR-T Adapter 700699-B21

NOTE: 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.

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: www.hp.com/go/ProLiantNICs.

HP InfiniBand HP InfiniBand FDR 2-port 545QSFP Adapter 702211-B21

HP I/O Expansion Options HP DL380 Gen9 Primary 2 Slot GPU Ready Riser Kit
NOTE: This is for slot 2 and supports double wide GPGPUs
 Slot1: 1x Gen3 x16 FH/FL, 1xGen3 x8 FH/HL 719076-B21

HP DL380 Gen9 Secondary 3 Slot GPU Ready Riser Kit
NOTE: This is for slot 2 and supports double wide GPGPUs
 Slot2: 2x Gen3 x16 FH/FL, 1xGen3 x8 FH/HL 719073-B21

NOTE: To support Graphics cards please also order the DL380 Gen9 Graphics Enablement kit, 719082-B21 that ships with 2 Performance Heatsinks and 6 cables. 1 kit needed for a 2P unit.

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 Flex Slot Platinum Hot-plug Power supplies

HP 500W Flex Slot Platinum Hot Plug Power Supply Kit 720478-B21

HP 800W Flex Slot Platinum Hot Plug Power Supply Kit 720479-B21

HP 1400W Flex Slot Platinum Plus Hot Plug Power Supply Kit 720620-B21

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 www.hp.com/go/proliant/powersupply.

NOTE: Maximum of 2 Flex Slot PS per platform

HP Computation and Graphics Accelerators **HP DL380 Gen9 Graphics Enablement Kit** 719082-B21

NOTE: This GPU enablement kit includes 2 Heatsinks and 6 cables to enable double wide GPUs to be supported.

NOTE: For doublewide GPU support you are required to have at least 1x1400W Power Supply (720620-B21), per card.

NOTE: There are limitations on the chassis and processor supported when adding Graphics accelerators

NOTE: Some cards will require the addition of the High Performance Ambient Temperature Fan Kit (719079-B21)

HP NVIDIA GRID K1 Quad GPU PCIe Graphics Accelerator J0G94A

NOTE: This GPU enablement kit includes 2 Heatsinks and 6 cables to enable double wide GPUs to be supported.

NOTE: Is supported in all chassis with either increased or Max cooling settings

Core Options

<p>NOTE: The Primary GPU riser (719076-B21) is required to support this in slot1</p> <p>NOTE: The secondary GPU riser (719073-B21) is required to support this in slot2 (2nd processor required).</p> <p>NOTE: For doublewide GPU support you are required to have at least 1x1400W Power Supply (720620-B21), per card.</p>	
NVIDIA GRID K2 Reverse Air Flow Dual GPU PCIe Graphics Accelerator	753958-B21
<p>NOTE: This GPU enablement kit includes 2 Heatsinks and 6 cables to enable double wide GPUs to be supported.</p> <p>NOTE: For doublewide GPU support you are required to have at least 1x1400W Power Supply (720620-B21), per card.</p> <p>NOTE: There are limitations on the chassis and processor supported when adding Graphics accelerators</p> <p>NOTE: This card will require the addition of the High Performance Ambient Temperature Fan Kit (719079-B21)</p>	
NVIDIA Tesla K40C 12GB Computational Accelerator	753960-B21
<p>NOTE: This GPU enablement kit includes 2 Heatsinks and 6 cables to enable double wide GPUs to be supported.</p> <p>NOTE: This is supported in all chassis.</p> <p>NOTE: The Primary GPU riser (719076-B21) is required to support this in slot1</p> <p>NOTE: The secondary GPU riser (719073-B21) is required to support this in slot2 (2nd processor required).</p> <p>NOTE: For doublewide GPU support you are required to have at least 1x1400W Power Supply (720620-B21), per card.</p>	
HP NVIDIA Quadro K2200 Graphics Accelerator	J0G89A
<p>NOTE: This GPU enablement kit includes 2 Heatsinks and 6 cables to enable double wide GPUs to be supported.</p> <p>NOTE: This is supported in all chassis.</p> <p>NOTE: The Primary GPU riser (719076-B21) is required to support this in slot1</p> <p>NOTE: The secondary GPU riser (719073-B21) is required to support this in slot2 (2nd processor required).</p> <p>NOTE: For doublewide GPU support you are required to have at least 1x1400W Power Supply (720620-B21), per card.</p>	
HP NVIDIA Quadro K4200 Graphics Accelerator	J0G90A
<p>NOTE: This GPU enablement kit includes 2 Heatsinks and 6 cables to enable double wide GPUs to be supported.</p> <p>NOTE: This is supported in all chassis.</p> <p>NOTE: The Primary GPU riser (719076-B21) is required to support this in slot1</p> <p>NOTE: The secondary GPU riser (719073-B21) is required to support this in slot2 (2nd processor required).</p> <p>NOTE: For doublewide GPU support you are required to have at least 1x1400W Power Supply (720620-B21), per card.</p>	
NVIDIA Quadro K6000 PCI-E Graphics Adapter	730874-B21
<p>NOTE: This GPU enablement kit includes 2 Heatsinks and 6 cables to enable double wide GPUs to be supported.</p> <p>NOTE: This is supported in all chassis.</p> <p>NOTE: The Primary GPU riser (719076-B21) is required to support this in slot1</p> <p>NOTE: The secondary GPU riser (719073-B21) is required to support this in slot2 (2nd processor required).</p> <p>NOTE: For doublewide GPU support you are required to have at least 1x1400W Power Supply (720620-B21), per card.</p>	
HP 150W PCI-E Power Cable Kit	669777-B21
<p>NOTE: Each DL380 Gen9 server will accommodate up to three single-width or two double width PCIe cards for Computational Graphics support</p> <p>NOTE: The NVIDIA Tesla, GRID and Quadro modules are supported only on 64-bit versions of Linux and Windows operating systems as well as on Virtual Machine client operating systems. The supported bare metal operating systems are RHEL6, SLES 11 and Windows Server 2012 R2</p> <p>NOTE: There are limitations on fan types, setting, and chassis support by card.</p>	

HP Cooling Options

HP DL380 Gen9 High Performance Temperature Fan Kit	719079-B21
<p>NOTE: High Performance Temperature Fan kit consists of 6 fans, these will need to replace all the standard Fans in the unit, and fill all 6-Fan cages</p>	



Core Options

NOTE: the 12LFF and 24SFF chassis (including field upgrades to 24SFF) will already include 6 High Performance Fan kits.

NOTE: The High Performance Temperature Fan Kit is needed to support certain GPGPU (Graphics cards) configurations; or ASHRAE operating environments.

NOTE: For elevated ambient temperature support please see:
www.hp.com/servers/ASHRAE

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
	NOTE: The Electronic software license is available in EMEA only.	
	HP Insight Control Server Provisioning Media Kit	BD883A
	HP Insight Management Media Kit	
	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 .	C6N31A
HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License	C6N36A	
HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle FIO Electronic License	C6N36ABE	

Embedded Management	HP iLO Advanced	
	HP iLO Advanced Electronic License with 3yr 24x7 Tech Support and Updates	BD506AAE
	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
HP iLO Advanced including 1yr 24x7 Technical Support and Updates Electronic License	TA850AAE	

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 2U Security Bezel Kit	666988-B21
	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.	



Additional Options

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 Flexible Smart Array Controllers	
HP Smart Array P440ar/2GB FBWC 12Gb 2-ports Int SAS Controller	726736-B21
NOTE: Includes the HP Smart Storage Battery	
HP Smart Array P440ar/2GB FBWC 12Gb 2-ports Int FIO SAS Controller	749974-B21
NOTE: Includes the HP Smart Storage Battery	
HP H240ar 12Gb 1-port Int Smart Host Bus Adapter	726757-B21
HP H240ar 12Gb 1-port Int FIO Smart Host Bus Adapter	749976-B21

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 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 Cable Options

HP DL380 Gen9 P840/440 SAS Cable Kit	783007-B21
HP DL380 Gen9 2SFF Front SAS x4 Cable Kit	783008-B21
HP DL380 Gen9 8SFF SAS Cable Kit	783009-B21
HP DL380 Gen9 2SFF x8 Front Cable Kit	785989-B21
HP DL380 Gen9 12LFF SAS Cable Kit	785991-B21
HP DL380 Gen9 8SFF H240 Cable Kit	786092-B21
HP DL380 Gen9 12LFF H240 SAS Cable Kit	786215-B21

For details on cabling options, additional information available here: [Cabling Matrix](#)

Optional Upgrades

HP 96W Smart Storage Battery with 145mm Cable for DL/ML/SL Servers	727258-B21
NOTE: Provide backup power for multiple HP Smart Array controllers or other devices (up to 16)	
HP 12Gb SAS Expander Card with Cables for DL380 Gen9	727250-B21

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

Tape Drives

HP StoreEver LTO-6 Ultrium 6650 SAS External Tape Drive	EH964A
HP StoreEver 1/8 G2 LTO-6 Ultrium 6250 FC Tape Autoloader	COH19A
HP StoreEver LTO-6 Ultrium 6250 Tape Drive in 1U Rack-mount Kit	COL99A
HP StoreEver LTO-4 Ultrium 1760 SAS External Tape Drive	EH920B
HP StoreEver LTO-4 Ultrium 1760 SAS (1) in 1U Rack-mount Kit	EH946C
HP StoreEver LTO-5 Ultrium 3000 SAS External Tape Drive	EH958B
HP StoreEver LTO-5 Ultrium 3000 SAS Tape Drive in 1U Rack-mount	EJ014B
HP StoreEver LTO-5 Ultrium 3280 SAS External Tape Drive	EH900B
HP StoreEver LTO-5 Ultrium 3280 SAS Tape Drive in 3U Rack-mount	EJ013B
HP StoreEver LTO-6 Ultrium 6250 External Tape Drive	EH970A
HP StoreEver 1U SAS Rack-mount Kit	AE459B
HP StoreEver LTO-4 Ultrium 1760 SCSI External Tape Drive	EH922B

HP Tape Storage Systems

HP StoreEver MSL6480



Additional Options

HP StoreEver MSL6480 Scalable Expansion Module	
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14604_div/14604_div.html (Worldwide).	QU626A
HP StoreEver MSL6480 Scalable Base Module	QU625A
HP MSL2024 0-Drive Tape Library	AK379A
HP MSL4048 0-Drive Tape Library	AK381A
HP MSL Library Extender Kit	AQ746A

HP Storage Options **NOTE:** For the complete listing of Fibre Channel Host Bus Adapters for Windows 2000, Windows Server 2003 and Linux, please see: <http://h18006.www1.hp.com/storage/saninfrastructure/hba.html>.

Emulex Fibre Channel HBAs

HP 81E 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AJ762B
HP 82E 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ763B
HP StoreFabric SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter	C8R38A
HP StoreFabric SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter	C8R39A

QLogic Fibre Channel HBAs

HP 81Q 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AK344A
HP 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ764A
HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter	QW971A
HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter	QW972A

Converged Network Adapter

HP StoreFabric CN1100R Dual Port Converged Network Adapter	QW990A
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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/35 2TB 6G SAS 7.2K LFF Dual port MDL HDD 70TB Bundle	QQ697A
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/70 3TB 6G SAS 7.2K LFF Dual port MDL HDD 210TB Bundle	QQ700A

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 QuickSpec](#) for information on additional racks options and rack specifications.

HP Intelligent Series Racks

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



Additional Options

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
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 QuickSpec](#) for information on additional racks options and rack specifications.

HP Value Series Rack

HP V142 1075mm deep Pallet 100 series Rack	AF046A
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NOTE: Please see the [HP Value Series Rack QuickSpec](#) 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 7.3kVA 32A High Voltage INTL Core Modular Power Distribution Unit	252663-B33
HP 17.3kVA 48A Three Phase NA/JP Modular Power Distribution Unit	AF511A
HP 22kVA 32A Three Phase INTL Core Modular Power Distribution Unit	AF518A
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
HP 7.3kVA 230 Volt IEC309 32A Input (20xC13) INTL Basic PDU	H5M68A
HP 7.3kVA 230 Volt IEC309 32A Input (24xC13/6xC19) INTL Basic PDU	H5M70A

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 7.3kVA 230 Volt IEC309 32A Input (20xC13/4xC19) INTL Monitored PDU	D9N48A
HP 7.3kVA 230 Volt IEC309 32A Input (32xC13/4xC19) INTL Monitored PDU	D9N50A
HP 11kVA 400 Volt IEC309 16A 3-Phase Input (18xC13/3xC19) INTL Monitored PDU	D9N55A
HP 11kVA 400 Volt IEC309 16A 3-Phase Input (30xC13/3xC19) INTL Monitored PDU	D9N57A
HP 17.3kVA 208 Volt IEC309 60A 3-Phase Input (12xC13/12xC19) NA/JP Monitored PDU	D9N59A
HP 22kVA 400 Volt IEC309 32A 3-Phase Input (30xC13/3xC19) INTL Monitored PDU	D9N56A
HP 22kVA 400 Volt IEC309 32A 3-Phase Input (12xC13/12xC19) INTL Monitored PDU	D9N60A

NOTE: Please see the [HP Monitored Power Distribution Units QuickSpec](#) 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
HP 7.3kVA 32A Single Phase INTL Core Intelligent Modular Power Distribution Unit	AF525A
HP 7.3kVA 32A Single Phase INTL Intelligent Modular Power Distribution Kit	AF534A

NOTE: Please see the [HP Intelligent Power Distribution Units QuickSpec](#) for information on additional options and product specifications.

Additional Options

HP Rack Mount Consoles, KVM Switches, and Keyboards

HP Rack Mount Consoles

HP TFT7600 G2 KVM Console Rackmount Keyboard US Monitor AZ870A

HP TFT7600 G2 KVM Console Rackmount Keyboard Intl Monitor
NOTE: Please see the [HP Rack Console QuickSpec](#) for information on additional options and product specifications. AZ884A

Rail Kits

NOTE: Gen9 rail kits have changed significantly from prior generation rail kits. Please take a moment to review the installation documentation that comes with the server to help you with the installation of your Gen9 server.

NOTE: Rail kits are optional for DL380 Gen9 and are no longer included standard with the server. Customers have the option to purchase their server without a rail kit.

NOTE: Ball bearing and Easy Install rail kits contain telescoping rails which allow for in-rack serviceability.

NOTE: To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001).

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 Small Form Factor Easy Install Rail Kit
 NOTE: Does not include CMA (733664-B21) 733660-B21

HP 2U Large Form Factor Easy Install Rail Kit
 NOTE: Does not include CMA (733664-B21) 733662-B21

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

HP 2U Small Form Factor Ball Bearing Rail Kit
 NOTE: Does not include CMA (720865-B21) 720863-B21

HP 2U Large Form Factor Ball Bearing Rail Kit
 NOTE: Does not include CMA (720865-B21) 720864-B21

HP 2U Cable Management Arm for Ball Bearing Rail Kit 720865-B21

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 USB Keyboard and Mouse

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

HP USB BFR with PVC Free Intl Keyboard/Mouse Kit
NOTE: Please see the [HP USB Keyboard and Mouse QuickSpec](#) for information on additional options and product specifications. 672097-B33

HP 1U Rackmount Keyboard with USB

HP 1U US Rackmount Keyboard with USB AG072A

HP 1U INT Rackmount Keyboard with USB

NOTE: Please see the [HP 1U Rackmount Keyboard QuickSpec](#) for information on additional options and product specifications. AG086A

HP Uninterruptible Power Systems (UPS)

HP Rack-mountable UPS

HP R1.5kVA G3 1U INTL Uninterruptible Power System AF471A

HP R1.5kVA G3 1U JP/TW Uninterruptible Power System AF470A

HP R/T3000 G2 2U L530 Low Voltage NA/JP Uninterruptible Power System AF466A

HP R/T3000 G2 2U Detachable Cord High Voltage INTL Uninterruptible Power System AF468A

HP R5KVA 3U IEC309-32A High Voltage INTL Uninterruptible Power System AF461A

HP R7KVA 4U IEC-32A High Voltage INTL Uninterruptible Power System AF463A

HP Parallel UPS

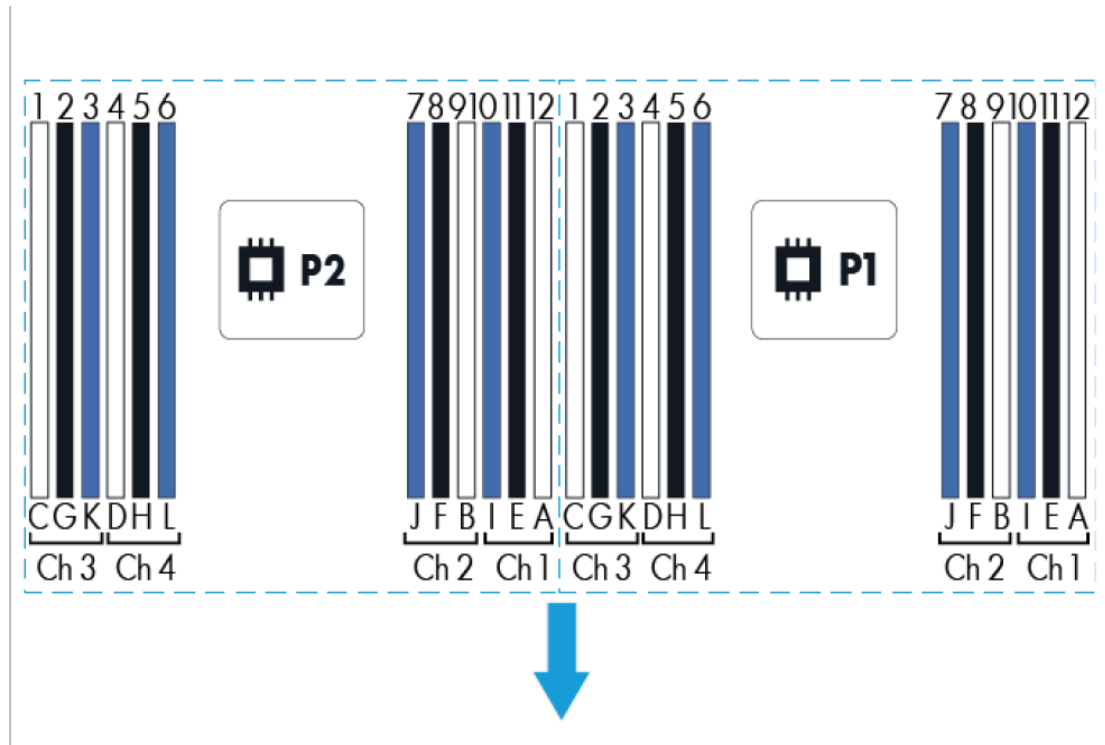
HP RP12000/3 6U International (INTL) Uninterruptible Power System Module AF437A

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

Memory

Memory Subsystem Architecture Each Intel® Xeon® E5-2600v3 family processor socket contains four memory channels per installed processor with three DIMMs per channel for a total of twelve (12) DIMMs or a grand total of twenty-four (24) DIMMs for the server.

Memory Population guidelines



DIMM population order												
	1st slot of channel			2nd slot of channel			3rd slot of channel					
	A	B	C	D	E	F	G	H	I	J	K	L
Number of DIMMs to install	4											
	8											
	12											

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.
- RDIMMs operating at either 1.35V or 1.5V may be mixed in any order, but the system will power them at the higher voltage.
- Do not mix RDIMMs or LRDIMMs.
- LRDIMMs are supported up to 3 DIMMs per channel.
- Using the HP RBSU, 1.35V DIMMs can be changed to operate at 1.5V.
- DIMMs of different speeds may be mixed in any order; the server will select a common optimal speed.

Memory

- 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 DL380 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 DL380 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 three (3) DIMM slots for each memory channel; twenty four (24) total slots for 2 processor server.
- Memory channels 1 and 3 consists of the three (3) DIMMs that are furthest from the processor.
- Memory channel 2 and 4 consists of the three (3) DIMMs that are closest to the processor.

Intel Gen9 Supported Memory Bandwidth for HP ProLiant Gen8 Intel® Xeon® E5-2600v3 Series Processor Family

Memory Bandwidth and Capacity

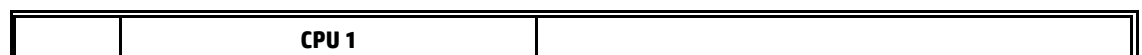
[DIMM Type]	Registered DIMMs (RDIMMs)		Load Reduced (LRDIMMs)
	Single Rank	Dual Rank	Quad Rank
DIMM Rank			
DIMM Capacity	8GB	16GB	32GB
DIMM Native Speed (MT/s)			
Voltage	Std Voltage 1.2V		
SLOTS THAT CAN BE POPULATED			
24 slot servers	24		
MAXIMUM CAPACITY (GB)			
	192	384	768
1 DIMM Per Channel	2133		
2 DIMM Per Channel	2133		
3 DIMM Per Channel	1600	1600	1600

DIMM slot and configuration diagram

DIMM slot and configuration diagrams

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, CPU2-C



Memory

Slot #	population order	CPU 2	
		Slot #	population order
1		1	

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, E5-2687Wv3,	2133MHz

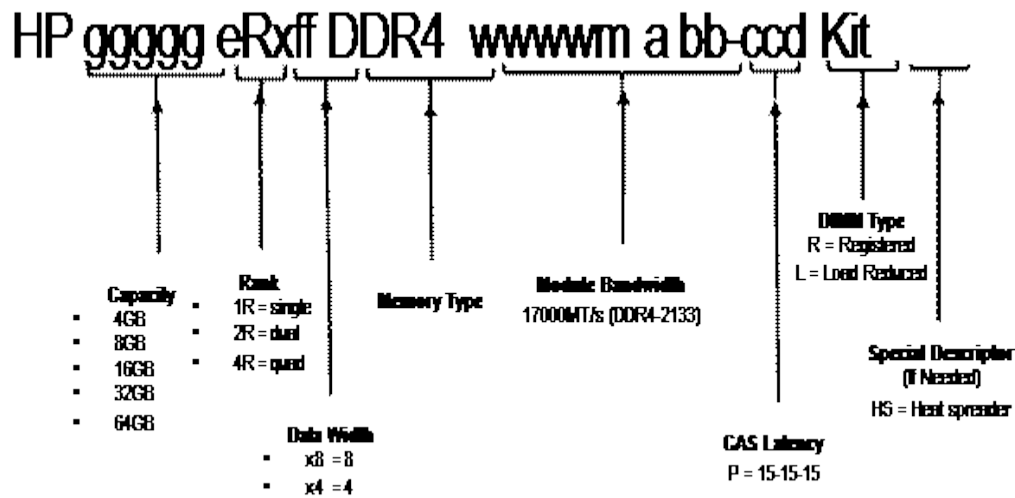
Standard and Maximum Memory Capacity (Pre-configured Models)

Pre-Configured Models	Standard Memory	Maximum Memory Plus Optional Memory	Standard Memory Replaced with Optional Memory
E5-2609v3,	8GB (1x8GB)	376GB (23x16GB, 1x8GB)	768GB (24x32GB)
E5-2620v3,	16GB (1x16GB)	384GB (23x16GB, 1x16GB)	768GB (24x32GB)
E5-2650v3,	32GB (2x16GB)	384GB (22x16GB, 2x16GB)	768GB (24x32GB)

DDR4 memory options part number decoder

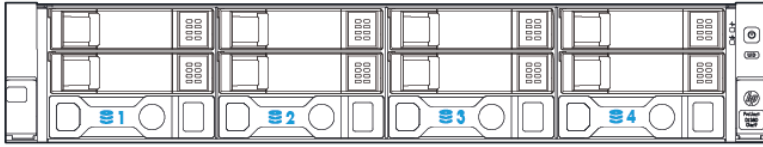
NOTE: Capacity references are rounded to the common gigabyte (GB) values.

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



Storage

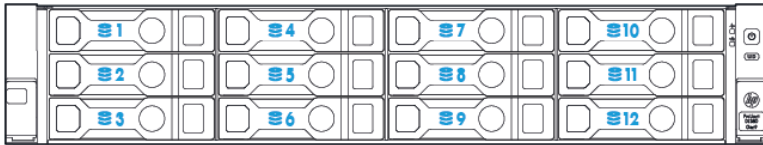
4LFF hot-plug drive model



1-4

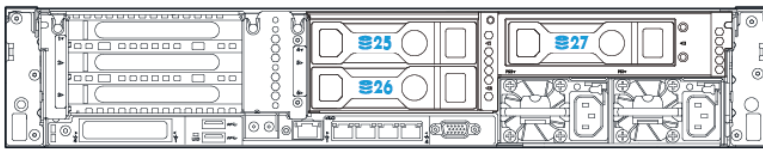
4 x LFF SATA/SAS/SSD Hot Pluggable Hard Drive Bays

12 LFF + 3 rear LFF hot-plug drive model



1-12

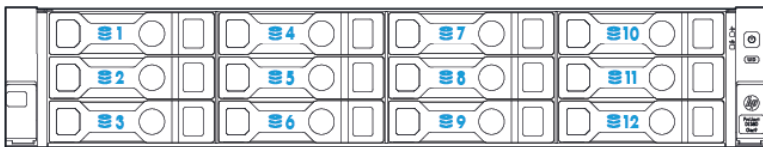
12 x LFF SATA/SAS/SSD Hot Pluggable Hard Drive Bays



1-3

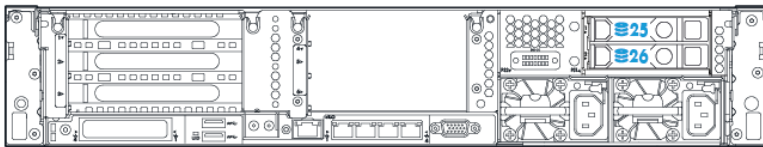
3 x LFF SATA/SAS/SSD Hot Pluggable Rear Hard Drive Bays

12 LFF + 2 rear SFF hot-plug drive model



1-12

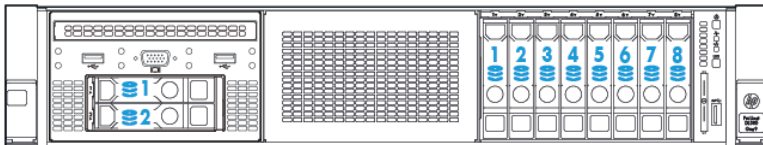
12 x LFF SATA/SAS/SDD Hot Pluggable Hard Drive Bays



1-2

2 x SFF SATA/SAS/SSD Hot Pluggable Rear Hard Drive Bays

8 SFF (+2 SFF) hot-plug drive model with Universal Media Bay



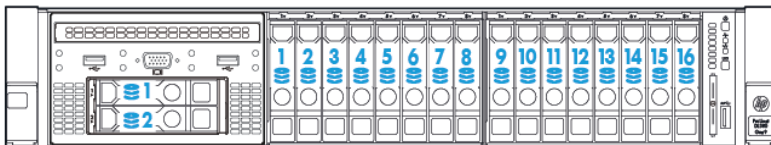
1-8

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

1-2

2 x SFF SATA/SAS/SSD Hot Pluggable Hard Drive Bays

16 SFF (+2 SFF) hot-plug drive model with Universal Media Bay



1-16

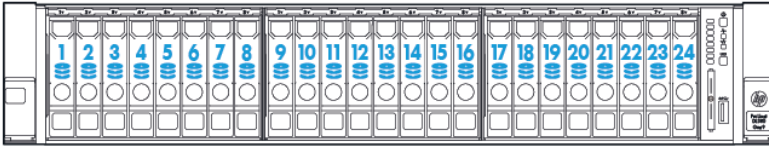
16 x SFF SATA/SAS/SDD Hot Pluggable Hard drive bays

1-2

2 x SFF SATA/SAS/SSD Hot Pluggable Hard Drive Bays

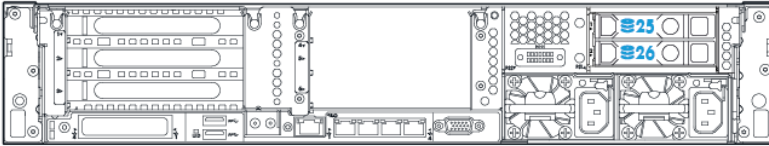
Storage

24 SFF + rear 2 SFF hot-plug drive model



1-24

24 x SFF SATA/SAS/SDD Hot Pluggable Hard drive bays



1-2

2 x SFF SATA/SAS/SSD Hot Pluggable Rear Hard Drive Bays

Technical Specifications

System Unit	Dimensions	SFF Drives: 3.44 x 17.54 x 26.75 in (8.73 x 44.55 x 67.94 cm) LFF Drives: 3.44 x 17.54 x 28.75 in (8.73 x 44.55 x 73.02 cm) NOTE: Dimensions without Bezel
	Weight (approximate)	Minimum: 32.6 lb (14.759 kg) (Minimum - 8SFF chassis with 1xSFF HDD and 7 HDD blanks, 1x processor, 1x power supply (plus blank), 1x Flexible Smart Array, 1x Riser installed) Maximum: 51.5 lb (23.6 kg) (Maximum - 12 LFF hard drives (No rear drives), 2x processors, 2x power supplies, 1x Flexible Smart Array, 2x Risers installed)
	Input Requirements (per power supply)	Range Line Voltage 100 to 120 VAC 200 to 240 VAC
	BTU Rating	Maximum For 800W Power Supply: 3207 BTU/hr (at 100 VAC), 3071 BTU/hr (at 200 VAC), 3112 BTU/hr (at 240 VAC) for China Only For 500W Power Supply: 1979 BTU/hr (at 100 VAC), 1911 BTU/hr (at 200 VAC), 1965 BTU/hr (at 240 VAC) for China Only
	Power Supply Output (per power supply)	Rated Steady-State Power For 1400W Power Supply: 1400W (at 100 VAC), 1400W (at 240 VAC), 1400W (at 240 VAC) For 800W Power Supply: 800W (at 100 VAC), 800W (at 240 VAC), 800W (at 240 VAC) input for China only For 500W Power Supply: 500W (at 100 VAC), 500W (at 240 VAC), 500W (at 240 VAC) input for China only Maximum Peak Power For 1400W Power Supply: 1400W (at 100 to 127 VAC), 1400W (at 200 to 240 1VAC), 1400W (at 240 VAC) input for China only For 800W Power Supply: 800W (at 100 to 127 VAC), 800W (at 200 to 240 1VAC), 800W (at 240 VAC) input for China only For 500W Power Supply: 500W (at 100 to 127 VAC), 500W (at 200 to 240 VAC), 500W (at 240 VAC) input for China only
	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. For approved hardware configurations, the supported system inlet range is extended to be: 5° to 40°C (41° 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: 5° to 45°C (41° 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 Extended Ambient Operating Support Non-operating -30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).

Technical Specifications

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	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	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	4.0 B Entry LFF 4.1 B Entry 4.2 B Base 5.7 B Base LFF 4.3 B Perf
	L pAm	23 dBA Entry LFF 24 dBA Entry 24 dBA Base 39 dBA Base LFF 25 dBA Perf
	Operating	
	L WAd	4.3 B Entry LFF 4.6 B Entry 4.8 B Base 5.9 B Base LFF 5.6 B Perf
	L pAm	25 dBA Entry LFF 29 dBA Entry 30 dBA Base 31 dBA Base LFF 39 dBA Perf
	NOTE: The Listed sound levels apply to standard shipping configurations (Entry LFF, Entry, Base, Base LFF and Performance models) Additional options may result in increased sound levels. The Base LFF model leverages our High Efficiency Fans, other models are shipping with standard fan options	
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.	
	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 transfer 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 Ethernet 1Gb 4-port 331i 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		
	Ports			
	Data Transfer Method	PCI Express, two lanes (x2)		
	Controller	BCM5719		
	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		
1000Base-TX (Full-Duplex)		2000Mb/s per port, 8000 Mb/s combined		
Connector	Four 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.



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