QuickSpecs

Overview

HPE ProLiant BL465c Gen8 Server Blade
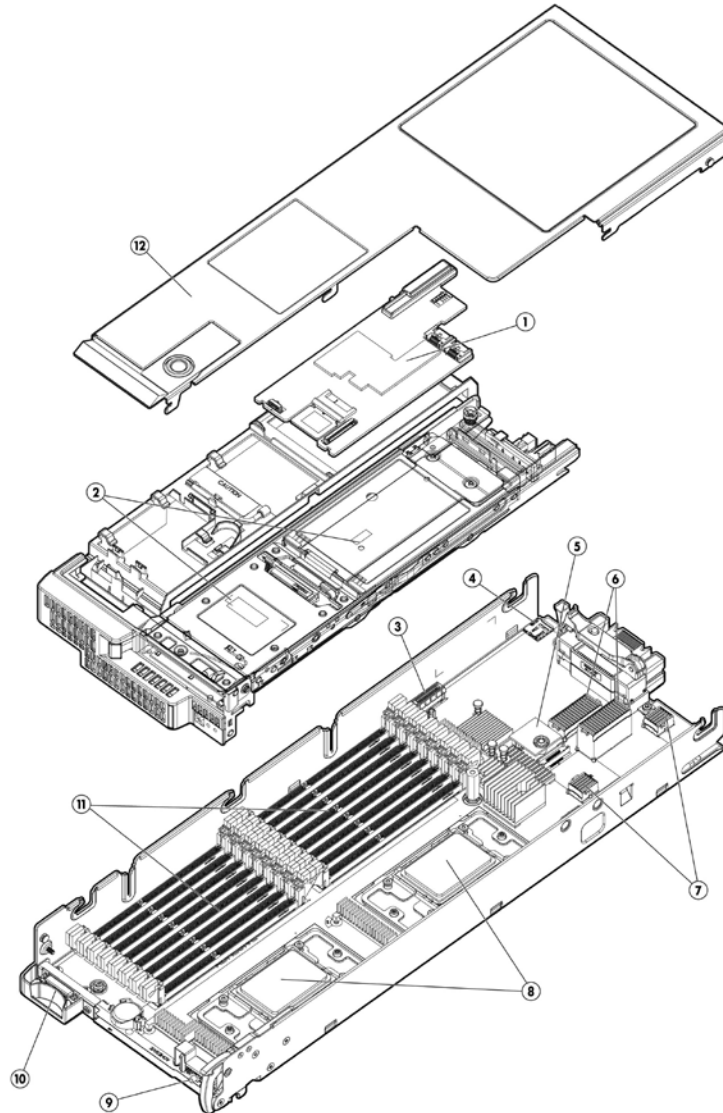
1. HPE Smart Array P220i Controller with 512MB FBWC
2. Two (2) small form factor (SFF) hot plug drive bays

3. Internal USB connector
4. Internal MicroSD card slot
5. TPM connector
6. Two (2) mezzanine I/O expansion slots

7. FlexibleLOM connector
8. Up to two (2) Multi-Core AMD Opteron™ 6300 Series processors
9. System power button and LED
10. Local I/O connector
11. Sixteen (16) DDR3 DIMM memory slots (8 per processor)
12. Access panel

Standard Features

NOTE: This document covers the HPE ProLiant BL465c Gen8 server blade only. For information on HPE BladeSystems c-Class Enclosures and HPE BladeSystem c-Class Interconnect and Mezzanine Components, please see the following:

HPE BladeSystem c-Class Enclosures QuickSpecs:
- HPE BladeSystem c3000 Enclosure QuickSpecs at
  http://h18000.www1.hp.com/products/QuickSpecs/12790_div/12790_div.html
  NOTE: The c3000 HPE c-Class enclosures have full backwards and forwards compatibility, existing server blades are supported in the new enclosures and any future server blades will be supported in the existing enclosures.
- HPE BladeSystem c7000 Enclosure QuickSpecs at
  http://h18000.www1.hp.com/products/QuickSpecs/12810_div/12810_div.html
  NOTE: The c7000 HPE c-Class enclosures have full backwards and forwards compatibility, existing server blades are supported in the new enclosures and any future server blades will be supported in the existing enclosures.
- HPE BladeSystem c-Class Interconnect and Mezzanine Components at
  http://h18004.www1.hp.com/products/blades/components/c-class-interconnects.html
  http://h18004.www1.hp.com/products/blades/components/c-class-adapters.html

NOTE: For proper BladeSystem operation, the minimum required versions of HPE Onboard Administrator and HPE Virtual Connect are required and available via the HPE Service Pack for ProLiant, please see: **http://www.hp.com/go/spp/download**

NOTE: For optimal cooling and system performance the BL465c Gen8 requires the c7000 enclosure to be configured with 10 fans and the c3000 enclosure to be configured with 6 fans.

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

Processor One of the following depending on Model	**Sixteen-Core Processors** AMD Opteron™ 6380 (2.5GHz/ 16-core/16MB/115W) Processor AMD Opteron™ 6378 (2.4GHz 16-core/16MB/115W) Processor AMD Opteron™ 6376 (2.3GHz 16-core/16MB/115W) Processor Low Power AMD Opteron™ 6366HE (1.8GHz/16-core/16MB/85W) Processor **Twelve-Core Processors** AMD Opteron™ 6348 (2.8GHz/12-core/16MB/115W) Processor AMD Opteron™ 6344 (2.6GHz/ 12-core/ 16MB/115W) Processor **Eight-Core Processors** AMD Opteron™ 6328 (3.2GHz/8-core/16MB/115W) Processor AMD Opteron™ 6320 (2.8GHz/8-core/16MB/115W) Processor **Quad-Core Processors** AMD Opteron™ 6308 (3.5GHz/4-core/16MB/115W) Processor **NOTE:** Processor wattage references reflect Thermal Design Power (TDP). For more information on TDP and Average CPU Power (ACP) visit: **http://www.amd.com/acp**
Cache Memory	16MB Level 3 cache memory
Chipset	AMD SR5690 and SP5100 **NOTE:** For more information regarding AMD chipsets, please see the following: **http://www.amd.com/us/products/Pages/chipsets.aspx**
Upgradeability	Upgradeable to two (2) processors

Standard Features

On System Management Chipset	HPE iLO (Firmware: HPE iLO 4)	
	NOTE: For more information, visit: http://www.hp.com/go/ilo	

Memory Protection	Advanced ECC
	Online spare mode

Memory	Type	HPE SmartMemory
		DDR3 Load Reduced (LRDIMM) or Registered (RDIMM)
	Standard (Pre-configured Models)	16GB (2 x 8 GB) DDR3 1333MHz RDIMMs at 1.35v
	Maximum (LRDIMM)	512GB (16 x 32GB) at 1333MHz
	Maximum (RDIMM)	256GB (16 x 16GB) up to 1600MHz

NOTE: HPE memory from previous generation servers are not qualified or warranted with this server. HPE SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HPE SmartMemory QuickSpecs at: http://h18000.www1.hp.com/products/QuickSpecs/14225_div/14225_div.html
NOTE: LRDIMM, RDIMM and UDIMMs are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen8 servers support RDIMM, UDIMM and LRDIMM.
NOTE: Depending on the memory configuration and processor model, the memory speed may run at 1600MHz, 1333MHz, or 1066MHz. Please see Memory Population Table or the Online Memory Configuration Tool at: http://www.hp.com/go/ddr3memory-configurator

Network Controller	One (1) FlexibleLOM connector for one dual-port FlexibleLOM

NOTE: FlexibleLOM options include 10Gb FlexFabric, 20Gb FlexFabric, 10Gb Flex-10, and 10Gb Ethernet.
NOTE: FlexFabric capabilities require the use of an HPE Virtual Connect FlexFabric module. Learn more at: http://www.hp.com/go/bladesystem/interconnects
NOTE: The server supports one FlexibleLOMs.
NOTE: For Pre-configured Model configurations, FlexibleLOM is already included.
NOTE: All FlexibleLOMs are dual port: one port is routed to interconnect module bay 1 and the other to bay 2.
NOTE: FlexibleLOMs are not compatible with prior generation c-Class server blades
Standard iLO Network Controller:
One (1) 10/100 Mbps port for the HPE iLO 4 On System Management Chipset
One (1) 10/100 Mbps port for the HPE iLO 4 to Onboard Administrator link. The Onboard Administrator (with 10/100/1000 Mbps) to BladeSystem link is 1Gbps.

Expansion Slots	Two (2) I/O expansion mezzanine slots:

- x8 PCIe 2.0 Type A (supports Type A mezzanine cards) (expansion slot 1).
  NOTE: This expansion slot supports dual-port mezzanine cards: one port is routed to interconnect module bay 3 and the other to bay 4.
- x16 PCIe 2.0 Type B (supports Type A and Type B mezzanine cards (expansion slot 2).
  NOTE: This expansion slot supports dual-port and quad-port mezzanine cards. For dual-port cards, one port is routed to interconnect module bay 5 and the other to bay 6. For quad-port cards, one port is routed to interconnect module bay 5, one to bay 6, one to bay 7, and one to bay 8.

Mezzanine card options include:
- Dual-port 10Gb FlexFabric, 20Gb FlexFabric,10Gb Flex-10, 10Gb Ethernet options, and quad-port 1Gb Ethernet server adapter mezzanine options for additional network ports
- Dual-port 8Gb and 16Gb Fibre Channel HBA for SAN connectivity

Standard Features

- QDR and FDR InfiniBand for low latency and high bandwidth server interconnectivity
- I/O accelerator mezzanine options for high transaction rate local storage
- Smart Array SAS RAID controller mezzanine options for external direct attach and shared SAS storage

HPE Server ROM	HPE ROM (read only memory) is now digitally signed using the HPE Corporate Signing Service. This signature is verified before the flash process starts, reducing accidental programming and preventing malicious efforts to corrupt system ROM.

HPE ROM provides for essential initialization and validation of hardware components before control is passed to the customer-installed operating system. The ROM also provides the capability of booting from various fixed media (HDD, CD-ROM) and removable media (USB), to continue operation to the operating system. HPE ROM performs very early configuration of the video controller, to allow monitoring of initialization progress via an attached monitor. If configuration or hardware errors are discovered during this early phase of hardware initialization, suitable messages are now displayed on the connected monitor. Additionally, these configuration or hardware errors are logged to the Integrated Management Log (IML) to assist in diagnosis.

The HPE ProLiant ROM is used to configure the following:
- Processor and chipset status registers
- System memory, memory map, and memory initialization
- System hardware configuration (integrated PCI devices and optional PCIe cards).
- Customer-specific BIOS configuration using the HPE ROM-Based Setup Utility (RBSU).

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

Storage Controller	All Models	One (1) HPE Smart Array P220i Controller with 512MB FBWC, (RAID 0 and 1)

NOTE: Upgradeable firmware with recovery ROM.
NOTE: The HPE Smart Array P220i supports two (2) small form factor (SFF) hot plug drive bays.
NOTE: The HPE Smart Array P220i supports 6G SAS and 3G SATA data transfer rates.

Available Options: Smart Array Advanced Pack Software for enhanced performance, reliability, availability, and security of system data

Maximum Internal Storage	Hot Plug SFF SAS	2.4TB	2 x 1.2TB
	Hot Plug SFF SATA	2.0TB	2 x 1.0TB
	Hot Plug SFF SAS SSD	3.2TB	2 x 1.6GB
	Hot Plug SFF SATA SSD	3.2TB	2 x 1.6TB

NOTE: The ProLiant BL465c Gen8 server includes the new HPE small form factor (SFF) hot plug SmartDrive carrier for enhanced management and reduced maintenance errors. HPE drives from previous generation servers are not compatible with the ProLiant BL465c Gen8 drive bays.
NOTE: The mixing of standard SAS drives with SAS SSD drives is supported within the server, but limits the RAID configuration to two separate RAID 0 volumes. Mixing of other drives types is not supported.

Interfaces	Micro SDHC Slot	One (1) internal Micro Secure Digital High Capacity (Micro SDHC) card slot
	USB 2.0 Port	One (1) internal USB 2.0 connector for USB flash media drive keys

NOTE: The above options are for integrated hypervisor virtualization environments needing a low cost boot solution with the highest performance and reliability.

Industry Standard Compliance	ACPI 2.0 Microsoft® Logo certifications USB 2.0 Support

Standard Features

IPMI 2.0
Secure Digital 2.0
TPM 1.2 Support
IEEE (specific IEEE standards dependant on Ethernet adapter card(s) installed)
Advanced Encryption Standard (AES)
Triple Data Encryption Standard (3DES)
SNMP
PCIe 2.0

Operating Systems and Virtualization Software Support for ProLiant Servers	**Microsoft Windows Server** **Red Hat Enterprise Linux (RHEL)** **SUSE Linux Enterprise Server (SLES)** **Canonical Ubuntu** **Oracle Solaris** **VMware** **Citrix XenServer** **NOTE:** For more information on the HPE Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: **http://www.hp.com/info/ossupport** and our driver download page **http://www.hp.com/support/BL465cGen8**
Enclosures	Hewlett Packard Enterprise offers two different c-Class server blade enclosures to meet your individual needs: • The HPE BladeSystem c7000 rack enclosure is 10U high and holds up to sixteen (16) ProLiant BL465c Gen8 servers plugged vertically. • The HPE BladeSystem c3000 rack enclosure is 6U high and holds up to eight (8) HPE ProLiant BL465c Gen8 servers plugged horizontally. • Server blades, storage blades, interconnect modules, power supplies, fans, and redundant Onboard Administrator modules are all designed to fit into the c3000 and c7000 enclosures. **NOTE:** For additional enclosure information, please see: **http://h18004.www1.hp.com/products/blades/components/enclosures/c-class/index.html**
Graphics	Integrated Matrox G200 video standard • 1280 x 1024 (32 bpp) • 1920 x 1200 (16 bpp) HPE iLO 4 On System Management Memory • 16 MB Flash • 256 MB DDR 3 with ECC (112 MB after ECC and video)
Form Factor	HPE ProLiant BL465c Gen8 is a half-height server blade that plugs into the HPE BladeSystem c3000 and c7000 enclosures.
On System Management	HPE iLO Management Engine HPE iLO Management Engine is a comprehensive set of embedded management features supporting the complete lifecycle of the server, from initial deployment, through ongoing management, to service alerting and remote support. HPE iLO Management Engine comes standard on all HPE ProLiant Gen8 servers. The HPE iLO Management Engine portfolio includes: • **HPE iLO:** Provides remote embedded server management without OS-based management software • **HPE Agentless Management:** Provides remote embedded server management without OS-based management software • **HPE Active Health System:** Builds diagnostic support into the server. • **HPE Intelligent Provisioning:** Lets customers provision and configure a single server without any separate media. No more SmartStart CDs or Smart Update

Standard Features

Firmware DVD are needed.
- To start Intelligent Provisioning:
  - Press the F10 key during the ProLiant Gen8 server boot process (also known as power on self test or POST).
  - Please go to the Intelligent Provisioning website at **http://www.hp.com/go/intelligentprovisioning** for additional information and to view usage videos.
  - Use the Service Pack for ProLiant (SPP) at **http://www.hp.com/go/spp** to get firmware and software updates.
  - HPE iLO Mobile App: Enables the ability to access, deploy, and manage your server anytime from anywhere from select smartphones and mobile devices. For additional information please visit: **http://www.hp.com/go/ilo/mobileapp**

NOTE: For more information, visit: http://www.hp.com/go/ilo or HPE iLO Management Engine technologies whitepaper

HPE Insight management software	HPE Service Pack for ProLiant	HPE Service Pack for ProLiant (SPP) and HPE Smart Update Manager (HPE SUM) provide a comprehensive approach to firmware and system software maintenance. Together they provide better operating stability and ensure maximum uptime. The SPP will be updated at a predictable cadence, typically coinciding with new HPE server hardware launches. By enabling firmware to be updated online and integrating firmware and system software updates in one operation, HPE SUM and the SPP offer faster updates of individual servers and dramatically faster updates of entire BladeSystem enclosures. Further improving system uptime and stability is the fact that Hewlett Packard Enterprise provides 12 months of support for each Service Pack for ProLiant release.

The user experience around HPE SUM and the SPP has been improved in several ways, starting with the web download. A single web page provides access to a single download containing both the latest version of HPE SUM and the latest SPP. Optional smaller subsets with only specific types of servers or specific operating systems are offered to save on download time. The HPE SUM application provides a straightforward, intuitive user interface that guides the user through the steps of discovery, analyses and update, providing comprehensive information on available updates, criticality and interdependencies. This information is also available in reports. By providing the option of multiple local or shared repositories which can be easily updated from hp.com, HPE SUM provides the tools to optimize stability and consistency throughout the company. While HPE SUM and the SPP recommend the combinations of firmware and system software that Hewlett Packard Enterprise has found to be the best practice, the application gives customers the flexibility to set their own specific baseline.

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

NOTE: The Service Pack for ProLiant (which includes HPE SUM) can be downloaded from http://www.hp.com/go/spp/download. More information can be found: http://www.hp.com/go/SmartUpdate, http://www.hp.com/go/spp and http://www.hp.com/go/hpsum

Standard Features

Security

- Power-on password
- Administrator's password
- Keyboard password (QuickLock)
- HPE iLO 4 On System Management Chipset with:
    - SSL encryption
    - Secure Shell version 2
    - Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser, CLP and XML scripting interface
    - AES and RC4 encryption of video
- External USB port enable/disable
- Network server mode
- Serial interface control
- TPM (Trusted Platform Module) 1.2 option
- Advanced Encryption Standard (AES)

Availability

Memory

- Advanced ECC uses single device data correction (SDDC) to detect and correct single and all multi-bit error that occurs within a single DRAM chip. Both x4 and x8 SDDC are supported
- Memory online spare mode (also known as rank spare mode) detects a rank that is degrading and switches operation to the spare rank.
- Memory demand and patrol scrubbing to prevent accumulation of correctable errors and reducing the likelihood of unplanned downtime.
- Failed DIMM isolation improves the service time thus improving the overall system availability.
- Address parity protection available on RDIMMs and LRDIMMs detects address bit errors improving service time and overall system availability.

Mezzanine options and I/O

- FlexibleLOM connector supporting two (i.e. redundant) Ethernet ports.
- Multiple mezzanine I/O expansion slots that support a wide variety of mezzanine cards each supporting multiple data paths routed to redundant interconnect modules.
- Network Adapter Teaming (bonding) provides network fault tolerance, transmit load balancing, and switch-assisted load balancing.

Storage

- Two (2) Small Form Factor hot-plug SAS/SATA/SSD drive bays.
- Integrated HPE Smart Array P220i Controller with 512MB FBWC, RAID 0 and 1 support, and upgradeable firmware with recovery ROM capability.
- Optional HPE D2200sb or D2220sb Storage Blade for direct attached and shared storage within the c-Class enclosure.
- Optional dual-port Fibre Channel mezzanine cards for redundant SAN connections.

Processor/Chipset

- Processor internal sensors & thermal control protection against over-temperature conditions.
- Cache parity/ECC protects cache data from accidental data corruption.
- Machine Check Architecture (MCA) detects and captures hardware errors such as system bus, memory ECC, parity, and cache, and improves service time.

Server Blade Enclosure Infrastructure

- Pooled power for true N+N power redundancy through up to six (6) hot-plug, high-efficiency, enclosure-based power supplies (configuration dependant).
- Up to ten (10) redundant enclosure-based hot-plug HPE Active Cool fans that scale to meet future demands and optimize airflow, reduce power draw, and improve acoustic performance.
- Dual grid power providing redundant rack enclosure power feeds to the server blade enclosure.
- HPE Dynamic Power Saver Mode the total enclosure power consumption is monitored in real time and automatically adjusted with changes in demand for improved efficiency and reliability.

Standard Features

- HPE Dynamic Power Capping safely limits power usage without impacting performance by capping peak instead of average power usage, removes risk to electrical infrastructure with fast-acting, hardware-based capping algorithm, and reclaims more power by dynamically controlling power limits based on workload demand.
- Up to eight interconnect modules per server blade enclosure providing four simultaneous redundant fabrics for FlexFabric, Virtual Connect Ethernet, Fibre Channel, InfiniBand, iSCSI, etc.
- Enclosure crosslinks between adjacent to provide interconnect module-to-module connections or as Virtual Connect module stacking links.
- Optional enclosure redundant Onboard Administrator system management module.

Warranty
This product is covered by a global limited warranty and supported by HPE Services and a worldwide network of Hewlett Packard Enterprise Authorized Channel Partners. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HPE Pointnext operational services or customized service agreements. Certain restrictions and exclusions apply. Hard drives have either a one year or three year warranty; refer to specific hard drive QuickSpecs for details.
NOTE: Server warranty includes 3 year Parts, 3 year Labor, 3-year on-site support. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have Hewlett Packard Enterprise replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at
http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

Optional Features

Fibre Channel Support	Up to two (2) optional Fibre Channel mezzanine HBAs are supported on the HPE ProLiant BL465c Gen8.
Compatible SAN	HPE ProLiant BL465c Gen8 server blades are optimized for HPE MSA, EVA and XP. HPE ProLiant BL465c Gen8 server blades are compatible with select 3rd party SANs. Please see blade storage page for more details at **http://h18004.www1.hp.com/products/blades/components/c-class-sans.html**
HPE Virtual Connect	HPE Virtual Connect is an interconnect option for BladeSystem c-Class that simplifies server connectivity to data and storage networks, and reduces costs. Unique HPE Flex-10 technology makes maximum use of network bandwidths, provide dynamic tuning and enable extreme flexibility to meet individual server and infrastructure requirements by allocating up to 4 network connections per server port. Virtual Connect FlexFabric modules extend those capabilities to allocate one function per port to storage connections. HPE Virtual Connect Enterprise Manager (VCEM) provides server management software with a central console to administer network connections and workloads for thousands of servers. For more information on Virtual Connect Enterprise Manager, see **http://www.hp.com/go/vcem**. For more information on Virtual Connect Ethernet, Fibre Channel, Converged Network and management options, see **http://www.hp.com/go/virtualconnect**

HPE Insight management software	HPE Insight Control	HPE Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. For more information, see **http://www.hp.com/go/insightcontrol** HPE Insight Control includes one year of 24 x 7 HPE Software Technical Support and Update Service ensuring rapid access to Hewlett Packard Enterprise support staff and proactive delivery of software updates. For more information about this service, see: **http://www.hp.com/services/insight**
	HPE Matrix Operating Environment	The HPE Matrix Operating Environment (Matrix OE) for ProLiant and Integrity servers is an integrated command center that helps you instantly adjust to dynamic business demands. This advanced infrastructure management software lets you reduce the cost of common data center tasks by up to 40 percent while keeping pace with your changing business. The HPE Matrix OE includes the automated provisioning, optimization, and recovery management capabilities for HPE CloudSystem Matrix, the ideal platform for private cloud and Infrastructure as a Service (IaaS). For more information, see **http://www.hp.com/go/matrixoe**
	HPE iLO Scale-Out	The HPE iLO Scale-Out license ideal for web/hosting/cloud service providers and High Performance Computing environments. This license is a specific subset of iLO Advanced functionality, provides fast remote access through Text Console via SSH, lower operational cost with Dynamic power capping, and faster time to resolution through Email-based Alerting and proactive notifications. With this newly designed HPE iLO Scale-Out license HPC customers now have a server management package solely design and priced for their massive data environments. HPE iLO Scale-Out is available on all HPE ProLiant Gen8 BL and SL platforms. For more information, see: **http://www.hp.com/go/iLO/scale-out**
	HPE iLO Advanced	HPE Integrated Lights-Out Advanced License a product option, providing smart remote server management without compromise. iLO Advanced unlocks the full set of remote administration functionality for all HPE ProLiant servers by activating the full Virtual Keyboard Video and Mouse remote console, multi-user collaboration, console record and replay, GUI-based and scripted virtual media and virtual folders, and enhanced security and power management functionality. For more information, see:

Optional Features

http://www.hp.com/go/iloadvance

HPE iLO Advanced License for ProLiant Servers

HPE iLO management processors for HPE ProLiant Gen8 servers virtualizes system controls to help simplify server setup, engage health monitoring and power and thermal control, and promote remote administration. HPE iLO functions out-of-the-box without additional software installation and functions regardless of the servers' state of operation. The HPE iLO can be accessed from any location via a web browser and works hand-in-hand with HPE Systems Insight Manager, Insight Control, and Matrix Operating Environment, helping customers unleash the value of the ProLiant platform and deliver the highest possible quality of IT service to the business.

Advanced functionality, such as graphical remote console, multi-user collaboration, and video record/playback can be activated with the optional HPE iLO Advanced or HPE iLO Advanced for BladeSystem licenses. The Advanced licensed features offer sophisticated remote administration of servers in dynamic data center and remote locations and can help significantly reduce cost associated with IT-related travel and unplanned downtime.

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

HPE OneView

The HPE OneView architecture combines server, storage, and networking with control of datacenter environmentals into a single, integrated management platform. Architected to deliver lifecycle management for the complete Converged Infrastructure, it facilitates collaboration, removes friction, collapses cycle times, eliminates error-prone work, and accelerates time to value. HPE OneView v1.0 combines management of servers and virtual connect with open integration to automate and customize existing tools and processes. With OneView, you'll work smarter-with greater visibility and control-and fully capitalize on the benefits of a Converged Infrastructure.

For more information on HPE OneView management, see: **http://www.hp.com/go/oneview**

High Performance Clusters

HPE Cluster Platforms	HPE Cluster Platforms are specifically engineered, factory-integrated large-scale ProLiant clusters optimized for High Performance Computing, with a choice of servers, networks and software. Operating system options include specially priced offerings for Red Hat Enterprise Linux and SUSE Linux Enterprise Server, as well as Microsoft Windows HPC Server. A Cluster Platform Configurator simplifies ordering. **http://www.hp.com/go/clusters**	
HPE HPC Interconnects	High Performance Computing (HPC) interconnect technologies are available for this server as part of the HPE Cluster Platform portfolio. These high-speed InfiniBand and Gigabit interconnects are fully supported by Hewlett Packard Enterprise when integrated within an HPE cluster. Flexible, validated solutions can be defined with the help of configuration tools. **http://www.hp.com/techservers/clusters/ucp/index.html**	
HPE Insight Cluster Management Utility	HPE Insight Cluster Management Utility (CMU) is an HPE-licensed and HPE-supported suite of tools that are used for lifecycle management of hyperscale clusters of Linux ProLiant systems. CMU includes software for the centralized provisioning, management and monitoring of nodes. CMU makes the administration of clusters user friendly, efficient, and effective. **http://www.hp.com/go/cmu**	

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 HPE 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, HPE data protection and recovery software will cost-effectively protect you against disaster and ensure business continuity.
- Data Archive and Migration Software

  The HPE storage software enables you to comply with data retention and retrieval requirements, improve application performance, and reduce costs by efficiently migrating infrequently accessed or less valuable data to lower cost storage.

Optional Features

- Storage Resource Management Software (SRM)
  The HPE 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
  Hewlett Packard Enterprise offers array-based and host-based replication software for use in disaster recovery, testing, application development and reporting.
- Storage Device Management Software
  Maximize your investment in HPE storage and networking with software that enables hardware-specific configuration, performance tuning and connectivity management.
- HPE StoreVirtual VSA
  With HPE 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:**
  http://www.hp.com/go/storage/software

HPE Insight Online	HPE Insight Online is a new addition to the HPE Support Center for one stop, secure access to product and HPE support information personalized to your IT environment. Insight Online can automatically display devices remotely monitored by HPE Insight Remote Support. With Insight Online's easy navigation you can efficiently track your IT support contracts and device status from anywhere and at anytime. **http://www.hp.com/go/insightonline**
Expansion Blade Support	Supports one (1) optional storage, tape, or PCI expansion blade.
Factory Express Portfolio for Servers and Storage	HPE Factory Express offers configuration, customization, integration and deployment services for Hewlett Packard Enterprise servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed. Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. Hewlett Packard Enterprise products supported through Factory Express include a wide array of servers and storage: HPE Integrity, HPE ProLiant, HPE ProLiant Server Blades, HPE BladeSystem, HPE 9000 servers as well as the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches. For more information on Factory Express services on your specific server model please contact your sales representative or go to: **http://www8.hp.com/us/en/campaigns/factory-express/server-storage-networking.html**
HPE Simple Configurator	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 the HPE Customer Business Center or an Authorized Partner for assistance. **https://h22174.www2.hp.com/SimplifiedConfig/Index**

Service and Support

Service and Support **HPE Technology Services for Industry Standard Servers**

HPE Technology Services delivers confidence, reduces risk and helps customers realize agility and stability. Connect to Hewlett Packard Enterprise to help prevent problems and solve issues faster. Our support technology lets you to tap into the knowledge of millions of devices and thousands of experts to stay informed and in control, anywhere, any time.

Protect your business beyond warranty with HPE Pointnext operational services

HPE Pointnext operational services enable you to order the right service level, length of coverage and response time as you purchase your new server, giving you full entitlement for the term you select.

Recommended HPE Pointnext operational services for your HPE product

Optimized Care **HPE Proactive Care Advanced** - 24x7 coverage, three year Care Pack Service

Achieve a higher return on your product investment with the personal attention from a locally assigned Account Support Manager who delivers recommendations designed to improve availability and performance. Leverage your system's ability to connect to Hewlett Packard Enterprise for automated problem detection and rapid critical event management to increase stability and reduce unplanned downtime. This recommendation provides 24x7 coverage with four-hour response for hardware and two-hour callback for supported software. Collaborative call management comes with Proactive Care Advanced or you may choose full support from Hewlett Packard Enterprise where we own all cases through to resolution. Hewlett Packard Enterprise is a leading provider of support services for most operating systems used on HPE BladeSystem with long, successful partnerships with vendors such as Microsoft, Red Hat, VMware, SUSE and others. Purchasing software support from Hewlett Packard Enterprise simplifies troubleshooting and shortens time to resolution with one call for hardware or software questions.
https://www.hpe.com/h20195/V2/GetDocument.aspx?docname=4AA5-3259ENW&cc=us&lc=en

Standard Care **HPE Proactive Care with 24x7 coverage, three year Care Pack Service**

HPE Proactive Care helps prevent problems and stabilize IT by utilizing secure, real-time, predictive analytics and proactive consultations when your products are connected to Hewlett Packard Enterprise. This Care Pack Service combines three years' proactive reporting and advice with our 24x7 coverage and enhanced escalation management, four hour hardware response time and two hour call back for software questions on leading industry standard software running on your HPE ProLiant server.
https://www.hpe.com/h20195/v2/getpdf.aspx/4aa3-8855enw.pdf

Related Services **HPE ProLiant Server Hardware Installation**

Provides for the basic hardware installation of Hewlett Packard Enterprise branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf

Factory Express for Servers and storage

HPE Factory Express offers configuration, customization, integration and deployment services for Hewlett Packard Enterprise servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed. For more information on Factory Express services for your specific server model please contact your sales representative or go to: **http://www.hp.com/go/factory-express**.

Data Privacy Services

Protect your data through better media management. HPE Data privacy services help manage and protect sensitive data to reduce the risk of unauthorized access to private information and help meet compliance requirements. Our retention services allow you to keep drives and other devices upon failure, our removal services provide convenient data sanitization and our recovery services allow you to safely retire IT assets and capture any remaining value from the hardware. **http://www.hp.com/services/dataprivacy**

Service and Support

Additional HPE Pointnext operational services can be found at: **http://www.hp.com/go/cpc**

Get connected to Hewlett Packard Enterprise to improve your support experience	Connecting products to Hewlett Packard Enterprise will help prevent problems with 24x7monitoring, prefailure alerts, automatic call logging, and parts dispatch, plus current data will be available for the proactive reports that are part of Proactive Care Services. With Connected products, you can have a dashboard to manage your IT anywhere, anytime, from any device.
HPE Support Center	Personalized online support portal with access to information, tools and experts to support Hewlett Packard Enterprise business products. Submit support cases online, chat with Hewlett Packard Enterprise experts, access support resources or collaborate with peers. Learn more **http://www.hp.com/go/hpsc** The HPE Support Center Mobile App allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime. HPE Insight Remote Support and HPE Support Center are available at no additional cost with a Hewlett Packard Enterprise warranty, HPE Care Pack or Hewlett Packard Enterprise contractual support agreement. **NOTE: HPE Support Center Mobile App is subject to local availability.**
Parts and Materials	Hewlett Packard Enterprise will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements. Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product quick-specs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services. The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.
For more information	To learn more on HPE ProLiant servers and HPE BladeSystem servers, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Or visit: **http://www.hp.com/services/bladesystem**

Models

NOTE: Not all models are available in all regions. Check with your local country Hewlett Packard Enterprise offices for availability.

HP ProLiant BL465c Gen8 6380 1P 16GB-R P220i Server 699045-B21	**Processor(s)**	(1) AMD Opteron™ 6380 (2.5GHz/16-core/16MB/115W) Processor
	Cache Memory	16MB Level 3 cache memory
	Memory	16GB (2 x 8 GB) DDR3 1333MHz RDIMMs at 1.35v **NOTE:** Total of 16 DIMM slots.
	Network Controller	One (1) HPE FlexFabric 10Gb 2-port 554FLB FlexibleLOM
	Storage Controller	HPE Smart Array P220i Controller with 512MB FBWC RAID 0,1
	Hard Drive	None ship standard Supports up to two (2) HPE SFF hot-plug SAS/SATA/SDD drives
	Internal Storage	SAS: 2.4TB; SATA: 2.0TB; SAS SSD: 3.2TB; SATA SSD: 3.2TB
	Optical Drive Bay	None
	Expansion Slots	2 standard - Slot 1 supports Type A mezzanine Cards. Slot 2 supports Type A and Type B mezzanine cards.
	Management	HPE iLO Management Engine (standard) Optional: HPE iLO Scale-Out or HPE Insight Control
	Form Factor	Up to eight (8) half-height blades supported in the HPE BladeSystem c3000 Enclosure Up to sixteen (16) half-height blades supported in HPE BladeSystem c7000 Enclosure
	Warranty	Server warranty includes 3 year Parts, 3 year Labor, 3-year on-site support.
HP ProLiant BL465c Gen8 6344 1P 16GB-R P220i Server 708931-B21	**Processor(s)**	(1) AMD Opteron™ 6344 (2.6GHz/12-core/16MB/115W) Processor
	Cache Memory	16MB Level 3 cache memory
	Memory	16GB (2 x 8 GB) DDR3 1333MHz RDIMMs at 1.35v **NOTE:** Total of 16 DIMM slots.
	Network Controller	One (1) HPE FlexFabric 10Gb 2-port 554FLB FlexibleLOM
	Storage Controller	HPE Smart Array P220i Controller with 512MB FBWC RAID 0,1
	Hard Drive	None ship standard Supports up to two (2) HPE SFF hot-plug SAS/SATA/SDD drives
	Internal Storage	SAS: 2.4TB; SATA: 2.0TB; SAS SSD: 3.2TB; SATA SSD: 3.2TB
	Optical Drive Bay	None
	Expansion Slots	2 standard - Slot1 supports Type A mezzanine Cards. Slot 2 supports Type A and Type B mezzanine cards.
	Management	HPE iLO Management Engine (standard) Optional: HPE iLO Scale-Out or HPE Insight Control
	Form Factor	Up to eight (8) half-height blades supported in the HPE BladeSystem c3000 Enclosure Up to sixteen (16) half-height blades supported in HPE BladeSystem c7000 Enclosure
	Warranty	Server warranty includes 3 year Parts, 3 year Labor, 3-year on-site support.

Configuration Information - Factory Integrated Models

HP ProLiant BL465c Gen8 6328 1P 16GB-R P220i Server 699047-B21	**Processor(s)**	(1) AMD Opteron™ 6328 (3.2GHz/8-core/16MB/115W) Processor
	Cache Memory	16MB Level 3 cache memory
	Memory	16GB (2 x 8 GB) DDR3 1333MHz RDIMMs at 1.35v **NOTE: Total of 16 DIMM slots.**
	Network Controller	One (1) HPE FlexFabric 10Gb 2-port 554FLB FlexibleLOM
	Storage Controller	HPE Smart Array P220i Controller with 512MB FBWC RAID 0,1
	Hard Drive	None ship standard Supports up to two (2) HPE SFF hot-plug SAS/SATA/SDD drives
	Internal Storage	SAS: 2.4TB; SATA: 2.0TB; SAS SSD: 3.2TB; SATA SSD: 3.2TB
	Optical Drive Bay	None
	Expansion Slots	2 standard - Slot1 supports Type A mezzanine Cards. Slot 2 supports Type A and Type B mezzanine cards.
	Management	HPE iLO Management Engine (standard) Optional: HPE iLO Scale-Out or HPE Insight Control
	Form Factor	Up to eight (8) half-height blades supported in the HPE BladeSystem c3000 Enclosure Up to sixteen (16) half-height blades supported in HPE BladeSystem c7000 Enclosure
	Warranty	Server warranty includes 3 year Parts, 3 year Labor, 3-year on-site support.

NOTE: This section lists some of the steps required to configure a Factory Integrated Model (configure-to-order or CTO server). To ensure only valid configurations are ordered, Hewlett Packard Enterprise recommends the use of an Hewlett Packard Enterprise approved configurator. Contact your local sales representative for information on CTO product offerings and requirements.

NOTE: Configure-to-order server blades must start with a CTO Blade Server.

NOTE: FIO indicates that this option is only available as a factory installable option.

Step 1: Base Server Blade Configuration (Select a configurable Blade)

HPE Models	HP ProLiant BL465c Gen8 10Gb FlexibleLOM Configure-to-order Blade Server	634975-B21

Configurable Model ships with:

One (1) FlexibleLOM connector providing a choice of supported FlexibleLOMs (see Step 2)

One (1) HPE Smart Array P220i Controller with 512MB FBWC and RAID 0 and 1 support

Two (2) HPE small form factor hot-plug SAS/SATA/SSD hard drive bays

One (1) x8 PCIe I/O expansion slot (Type A)

One (1) x16 PCIe I/O expansion slot (Type A or Type B)

One (1) integrated USB connector and one (1) Micro SDHC connector

One (1) TPM connector

HPE iLO Management Engine (standard)

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

HPE Processors   **For single processor configuration choose:**

Core Processor Option Kits

NOTE: The BL465c Gen8 supports one or two processors.

NOTE: All configure-to-order processor kits (i.e. xxxxxx-L21) contain one (1) processor.

NOTE: If two processors are desired, select one xxxxxx-L21 here in Step 2 and one xxxxxx-B21 in Step 3.

Configuration Information - Factory Integrated Models

NOTE: All processors within the server must be identical.
NOTE: The letters "HE" following the model number denotes lower wattage.
NOTE: The processor model as well as the memory configuration determines the maximum speed memory can operate. Please see the see the "Memory" section later in this document.

Sixteen-Core Processors

HP BL465c Gen8 AMD Opteron 6380 (2.5GHz/16-core/16MB/115W) FIO Processor Kit	699048-L21
HP BL465c Gen8 AMD Opteron 6378 (2.4GHz/16-core/16MB/115W) FIO Processor Kit	699049-L21
HP BL465c Gen8 AMD Opteron 6376 (2.3GHz/16-core/16MB/115W) FIO Processor Kit	699050-L21
HP BL465c Gen8 AMD Opteron 6366HE (1.8GHz/16-core/16MB/85W) FIO Processor Kit	699056-L21

Twelve-Core Processors

HP BL465c Gen8 AMD Opteron 6348 (2.8GHz/12-core/16MB/115W) FIO Processor Kit	699051-L21
HP BL465c Gen8 AMD Opteron 6344 (2.6GHz/12-core/16MB/115W) FIO Processor Kit	699052-L21

Eight-Core Processors

HP BL465c Gen8 AMD Opteron 6328 (3.2GHz/8-core/16MB/115W) FIO Processor Kit	699053-L21
HP BL465c Gen8 AMD Opteron 6320 (2.8GHz/8-core/16MB/115W) FIO Processor Kit	699054-L21

Quad-Core Processors

HP BL465c Gen8 AMD Opteron 6308 (3.5GHz/4-core/16MB/115W) FIO Processor Kit	699055-L21

HPE Memory

NOTE: To realize the performance memory capabilities listed in this document, HPE SmartMemory is required. For additional information, please see the HPE SmartMemory QuickSpecs at:
http://h18000.www1.hp.com/products/QuickSpecs/14225_div/14225_div.html (Worldwide)
NOTE: HPE memory from previous generation servers are not fully compatible with Smart Memory features in Gen8 Servers.
NOTE: A minimum of one DIMM per processor is required.
NOTE: For additional memory rules and guidelines, see the "Memory" section later in this document.

HPE SmartMemory

Registered DIMMs (RDIMMs)

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 LV Memory Kit	647871-B21
HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647873-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Memory Kit	695793-B21

Configuration Information - Factory Integrated Models

HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 LV Memory Kit	647877-B21
HPE 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647879-B21
HPE 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 LV Memory Kit	647883-B21
HPE 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory	672633-B21

Load Reduced DIMMs (LRDIMMs)

HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) LR CAS-9 LV Memory Kit	647885-B21

NOTE: Depending on the memory configuration and processor model, 1600MHz and 1333MHz memory may operate at a lower speed. Please see the see the "Memory" section later in this document and the Online Memory Configuration Tool for details at **http://www.hp.com/go/ddr3memory-configurator**

HPE Networking

FlexibleLOM Adapters

NOTE: The server requires one FlexibleLOM that is installed in the FlexibleLOM connector. All FlexibleLOMs are dual port: One port is routed to interconnect module bay 1 and the other to bay 2.

10/20Gb FlexibleLOM Adapters

HPE FlexFabric 20Gb 2-port 630FLB FIO Adapter	700066-B21
HP FlexFabric 10Gb 2-port 554FLB FIO Adapter	684212-B21
HPE Ethernet 10Gb 2-port 560FLB FIO Adapter	684214-B21
HP Flex-10 10Gb 2-port 530FLB FIO Adapter	684211-B21
HPE BL e-Class Special Enclosure	700742-B21

NOTE: HPE ProLiant BL465c Gen8 10Gb FlexibleLOM Configure-to-order Blade Server (634975-B21) must be selected in order to select one of the 10/20Gb FlexibleLOM adapters.

NOTE: HPE FlexFabric 10Gb 2-port 534FLB FlexibleLOM and HPE FlexFabric 20Gb 2-port 630FLB FlexibleLOM do not support iSCSI or FCoE boot from SAN on the BL465c Gen8

NOTE: Please see the QuickSpecs for Technical Specifications and additional information: **http://www.hp.com/go/ProLiantNICs**

Step 3: Choose Additional Factory Integration Options

HPE Insight Software	HPE Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO LTU	C6N36A
Converged Infrastructure Management	**HPE OneView with iLO Advanced - Server hardware required on same purchase order**	
	HPE OneView for Blade Server including 3yr 24x7 Support FIO Bundle Physical 1-server	F6Q89A

Configuration Information - Factory Integrated Models

Software   LTU

HPE Storage Blades HPE D2220sb Configure-to-order Storage Blade   QW918A

Step 4: Choose Additional Options for Factory Integration

NOTE: For additional options, please refer to the "Core Options" and "Additional Options" section below. For additional options, including server blade enclosures interconnect, mezzanine options and power subsystem options; please see the Core Options and Additional sections below; or the following:

- HPE BladeSystem c3000 Enclosure QuickSpecs:
  http://h18000.www1.hp.com/products/QuickSpecs/12790_div/12790_div.html
  NOTE: The c3000 HPE c-Class enclosures have full backwards and forwards compatibility, existing server blades are supported in the new enclosures and any future server blades will be supported in the existing enclosures.
- HPE BladeSystem c7000 Enclosure QuickSpecs:
  http://h18000.www1.hp.com/products/QuickSpecs/12810_div/12810_div.html
  NOTE: The c7000 HPE c-Class enclosures have full backwards and forwards compatibility, existing server blades are supported in the new enclosures and any future server blades will be supported in the existing enclosures.
- HPE BladeSystem c-Class Interconnect and Mezzanine Components:
  http://h18004.www1.hp.com/products/blades/components/c-class-interconnects.html and
  http://h18004.www1.hp.com/products/blades/components/c-class-adapters.html

NOTE: For optimal cooling and system performance the BL465c Gen8 requires the c7000 enclosure to be configured with 10 fans and the c3000 enclosure to be configured with 6 fans.

Core Options

HPE Networking	**10/20Gb Ethernet Mezzanine**

NOTE: Each adapter requires a minimum of 2GB of server memory.
NOTE: A 10 Gigabit Ethernet adapter supports linking at 1Gbps or 10Gbps when connected to an interconnect module with 10Gb Ethernet downlinks.
NOTE: A 10 Gigabit Ethernet adapter supports linking at only 1Gbps when connected to an interconnect module with 1Gb Ethernet downlinks.
NOTE: The mezzanine adapters on each server blade connects to an interconnect in bays 3-8 (HPE BladeSystem c7000 Enclosure) or bays 2-4 (HPE BladeSystem c3000 Enclosure).

HPE FlexFabric 20Gb 2-port 630M Adapter	700076-B21

NOTE: Please see QuickSpecs for technical specifications and additional information at: http://www8.hp.com/h20195/v2/GetDocument.aspx?docname=c04312720

HP Flex-10 10Gb 2-port 530M Adapter	631884-B21

 NOTE: Please see QuickSpecs for technical specifications and additional information at: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111538**

HPE FlexFabric 10Gb 2-port 534M Adapter	700748-B21

NOTE:NOTE: Please see QuickSpecs for technical specifications and additional information at: https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111368

HP Flex-10 10Gb 2-port 552M Adapter	674764-B21

NOTE: Please see QuickSpecs for technical specifications and additional information at: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111477**

HP FlexFabric 10Gb 2-port 554M Adapter	647590-B21

NOTE: Please see QuickSpecs for technical specifications and additional information at: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111536**

HPE Ethernet 10Gb 2-port 560M Adapter	665246-B21

NOTE:NOTE: Please see QuickSpecs for technical specifications and additional information at: http://h18000.www1.hp.com/products/QuickSpecs/14478_div/14478_div.html

1Gb Ethernet Mezzanine

HPE Ethernet 1Gb 4-port 366M Adapter	615729-B21

NOTE: Please see QuickSpecs for technical specifications and additional information at: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111456**

FlexibleLOM Adapters
NOTE: The server supports one FlexibleLOM that is installed in the FlexibleLOM connector and is already included in Pre-configured Models and added per Step 2 for Factory Integrated Models. The FlexibleLOM options below are used to change these original FlexibleLOMs.

10/20Gb FlexibleLOM

HPE FlexFabric 20Gb 2-port 630FLB Adapter	700065-B21

NOTE: HPE FlexFabric 20Gb 2-port 630FLB FlexibleLOM does not support iSCSI or FCoE boot from SAN on the BL465c Gen8
NOTE: Please see QuickSpecs for technical specifications and additional information

Core Options

at: http://www8.hp.com/h20195/v2/GetDocument.aspx?docname=c04312719

HPE Flex-10 10Gb 2-port 530FLB Adapter NOTE:NOTE: Please see QuickSpecs for technical specifications and additional information at: https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111539	656590-B21
HPE BL e-Class Special Enclosure NOTE:NOTE: HPE FlexFabric 10Gb 2-port 534FLB FlexibleLOM does not support iSCSI or FCoE boot from SAN on the BL465c Gen8 NOTE:NOTE: Please see QuickSpecs for technical specifications and additional information at: https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=c04111370	700742-B21
HPE FlexFabric 10Gb 2-port 554FLB Adapter NOTE:NOTE: Please see QuickSpecs for technical specifications and additional information at: https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111537	647586-B21
HPE Ethernet 10Gb 2-port 560FLB Adapter NOTE:NOTE: Please see QuickSpecs for technical specifications and additional information at: https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111516	655639-B21

HPE Fibre Channel	HPE LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class	659818-B21
	NOTE: Please see QuickSpecs for technical specifications and additional information at: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04163733**	
	HPE QMH2572 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class	651281-B21
	NOTE: Please see QuickSpecs for technical specifications and additional information at: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04126040**	
	HPE QMH2672 16Gb Fibre Channel Host Bus Adapter	710608-B21
	NOTE: Please see QuickSpecs for technical specifications and additional information **at: http://h18000.www1.hp.com/products/QuickSpecs/14622_div/14622_div.html**	

HPE Processors	**NOTE:** The BL465c Gen8 supports one or two processors. **NOTE:** All processors within the server must be identical. **NOTE:** The letters "HE" following the model number denotes lower wattage. **NOTE:** The memory configuration determines the maximum speed memory can operate. Please see the see the "Memory" section later in this document.	
	Sixteen-Core Processors	
	HPE BL465c Gen8 AMD Opteron 6380 (2.5GHz/16-core/16MB/115W) Processor Kit	699048-B21
	HPE BL465c Gen8 AMD Opteron 6378 (2.4GHz/16-core/16MB/115W) Processor Kit	699049-B21
	HPE BL465c Gen8 AMD Opteron 6376 (2.3GHz/16-core/16MB/115W) Processor Kit	699050-B21
	HPE BL465c Gen8 AMD Opteron 6366HE (1.8GHz/16-core/16MB/85W) Processor Kit	699056-B21
	Twelve-Core Processors	
	HPE BL465c Gen8 AMD Opteron 6348 (2.8GHz/12-core/16MB/115W) Processor Kit	699051-B21

Core Options

HPE BL465c Gen8 AMD Opteron 6344 (2.6GHz/12-core/16MB/115W) Processor Kit	699052-B21

Eight-Core Processors

HPE BL465c Gen8 AMD Opteron 6328 (3.2GHz/8-core/16MB/115W) Processor Kit	699053-B21
HPE BL465c Gen8 AMD Opteron 6320 (2.8GHz/8-core/16MB/115W) Processor Kit	699054-B21

Quad-Core Processors

HPE BL465c Gen8 AMD Opteron 6308 (3.5GHz/4-core/16MB/115W) Processor Kit	699055-B21

HPE Memory

NOTE: To realize the performance memory capabilities listed in this document, HPE SmartMemory is required. For additional information, please see the HPE SmartMemory QuickSpecs at:
http://h18000.www1.hp.com/products/QuickSpecs/14225_div/14225_div.html (Worldwide)
NOTE: HPE memory from previous generation servers are not fully compatible with Smart Memory features in Gen8 Servers.
NOTE: A minimum of one DIMM per processor is required.
NOTE: For additional memory rules and guidelines, see the "Memory" section later in this document.

HPE SmartMemory

Registered DIMMs (RDIMMs)

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 LV Memory Kit	647871-B21
HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647873-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Memory Kit	695793-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 LV Memory Kit	647877-B21
HPE 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647879-B21
HPE 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 LV Memory Kit	647883-B21
HPE 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory	672633-B21

Load Reduced DIMMs (LRDIMMs)

HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) LR CAS-9 LV Memory Kit	647885-B21

NOTE: Depending on the memory configuration, 1600MHz and 1333MHz memory may operate at a lower speed. Please see the see the "Memory" section later in this document and the Online Memory Configuration Tool for details at:
http://www.hp.com/go/ddr3memory-configurator

HPE Hard Drives

NOTE: The ProLiant BL465c Gen8 server includes the new HPE hot-plug small form

Core Options

factor (SFF) SmartDrive carrier for enhanced management and reduced maintenance errors. HPE drives from previous generation servers are not compatible with the BL465c Gen8 drive bays.

NOTE: The mixing of standard SAS drives with SAS SSD drives is supported within the server, but limits the RAID configuration to two separate RAID 0 volumes. Mixing of other drives types is not supported.

NOTE: HPE hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

NOTE: The hard drive options are not required when configuring a drive-less model.

NOTE: The HPE Smart Array P220i supports 6G SAS and 3G SATA data transfer rates. 12G SAS and 6G SATA drives will negotiate to the maximum data transfer rate supported by the controller.

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

HP 120GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Boot 3yr Wty Solid State Drive	717965-B21
HP 80GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Boot 3yr Wty Solid State Drive	734360-B21

6G SATA Value Endurance 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

NOTE: Please see the QuickSpecs for technical specifications and information at: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04154378**

6G SATA Hot Plug with SmartDrive SFF (2.5-inch) Midline (MDL) Drives

HPE 1TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty Digitally Signed Firmware HDD	655710-B21
HPE 500GB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655708-B21

NOTE: Please see the QuickSpecs for technical specifications and additional information at: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111725**

6G SATA (2.5-inch) 512e SC HDD

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

12G SAS (2.5-inch) 512e SC HDD

Core Options

HPE 600GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty 512e HDD	748387-B21
HPE 1TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD	765464-B21
HPE 1.8TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty 512e HDD	791034-B21
HPE 2TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e HDD	765466-B21

6G SATA 2.5in WI-PLP SC SSD

HPE 1.2TB SATA 6G Write Intensive SFF (2.5in) SC 3yr Wty SSD	804677-B21
HPE 800GB SATA 6G Write Intensive SFF (2.5in) SC 3yr Wty SSD	804671-B21
HPE 400GB SATA 6G Write Intensive SFF (2.5in) SC 3yr Wty SSD	804665-B21
HPE 200GB SATA 6G Write Intensive SFF (2.5in) SC 3yr Wty SSD	804639-B21

6G SATA 2.5in MU-PLP SC SSD

HPE 1.6TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty SSD	804631-B21
HPE 800GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty SSD	804625-B21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty SSD	832414-B21
HPE 200GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty SSD	804613-B21

6G SATA 2.5in RI-PLP SC SSD

HPE 1.6TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty SSD	804605-B21
HPE 800GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty SSD	804599-B21
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty SSD	804593-B21
HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty SSD	804587-B21
HPE 120GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty SSD	804581-B21
HPE 80GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty SSD	804575-B21

6G SATA Value Endurance SFF (2.5-inch) SC Enterprise Value M1 Solid State Drives

HPE 120GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty SSD	764923-B21
HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty SSD	764925-B21
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty SSD	764927-B21
HPE 800GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty SSD	764929-B21

Core Options

6G SATA VE Hot Plug SFF (2.5-inch) SC EV G1 Solid State Drives

HP 1.6TB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	757339-B21
HP 480GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty G1 Solid State Drive	756657-B21
HP 240GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty G1 Solid State Drive	756636-B21
HP 120GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty G1 Solid State Drive	756621-B21

6G SATA LE Hot Plug SFF (2.5-inch) SC EL G1 Solid State Drives

HP 960GB 6G SATA Light Endurance SFF 2.5-in SC Enterprise Light 3yr Wty G1 Solid State Drive	756601-B21

6G SATA 2.5in SFF RI-3 SC SSD

HPE 3.84TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty SSD	816929-B21
HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty SSD	816919-B21
HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty SSD	816909-B21
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty SSD	816899-B21
HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty SSD	816889-B21
HPE 120GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty SSD	816879-B21

6G SATA 2.5in SFF MU-3 SC SSD

HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty SSD	817011-B21
HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty SSD	816995-B21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty SSD	816985-B21
HPE 240GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty SSD	816975-B21
HPE 120GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty SSD	816965-B21

12G SAS SFF (2.5in) RI-3 SC SSD

HPE 3.84TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty SSD	816576-B21
HPE 1.92TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty SSD	816572-B21
HPE 960GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty SSD	816568-B21
HPE 480GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty SSD	816562-B21

12G SAS SFF (2.5in) MU-3 SC SSD

HPE 3.2TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty SSD	822567-B21

Core Options

HPE 1.6TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty SSD	822563-B21
HPE 800GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty SSD	822559-B21
HPE 400GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty SSD	822555-B21

SAS Hot Plug with SmartDrive SFF (2.5-inch) Enterprise 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 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652583-B21
HP 450GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652572-B21
HP 300GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652564-B21
HP 300GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652611-B21
HP 146GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652605-B21
HPE 600GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty HDD	759212-B21
HPE 450GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty HDD	759210-B21
HPE 300GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty HDD	759208-B21

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

HPE 1TB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652749-B21
HPE 500GB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652745-B21

NOTE: Please see QuickSpecs for technical specifications and additional information at: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111744**

12G SAS Write Intensive SFF (2.5-inch) SC 3yr Wty H2 Solid State Drive

HPE 200GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty SSD	802578-B21
HPE 400GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty SSD	802582-B21
HPE 800GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty SSD	802586-B21
HPE 1.92TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty SSD	802891-B21

6G SATA ME 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

NOTE: Please see the QuickSpecs for technical specifications and information at: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04154378**

Core Options

6G SATA Read Intensive (2.5-inch) SC G2 Solid State Drive

HP 240GB 6G SATA Read Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	789135-B21
HP 480GB 6G SATA Read Intensive SFF 2.5-in SC 3yr Wty Solid State Drive	789145-B21

12G SAS SFF (2.5-inch) SC ENT HDD

HPE 1.2TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty HDD	781518-B21
HPE 900GB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty HDD	785069-B21
HPE 600GB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty HDD	781516-B21
HPE 300GB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty HDD	785067-B21

12G SAS ME SFF (2.5-inch) SC Enterprise Mainstream H2 Solid State Drives

HPE 1.6TB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty SSD	779176-B21
HPE 200GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty SSD	779164-B21
HPE 400GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty SSD	779168-B21
HPE 800GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty SSD	779172-B21

12G SAS VE SFF (2.5-inch) SC EV Solid State Drives

HP 1.6TB 12G SAS Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	762263-B21
HPE 800GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty SSD	762261-B21

NOTE: Please see the QuickSpecs for technical specifications and information at:
https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04154378

Additional Options

HPE Insight software	**HPE Insight Control**	
	HPE Insight Control including 1yr 24x7 Technical Support and Updates 1-server LTU	C6N27A
	HPE Insight Control including 1yr 24x7 TSU E-LTU	C6N28ABE
	HPE Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle FIO E-LTU	C6N36ABE
	HP Insight Control Server Provisioning Media Kit	BD883A
	HPE Insight Management Media Kit	C6N31A

NOTE:NOTE: HPE Insight Management Media Kit contains DVDs without licenses. Contains HPE Systems Insight Manager, HPE Insight Control, HPE Matrix Operating Environment, and Virtual Connect Enterprise Manager software. Uses an integrated installer to perform quick and accurate software installation and updates.

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, which must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HPE Software Technical Support Service.

NOTE: Licenses ship without media. The HPE Insight Management Media Kit can be ordered separately, or can be downloaded at: **http://www.hp.com/go/insightupdates**

NOTE: For additional license kits, please see the QuickSpecs at: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04123391**

HPE iLO Advanced License HPE Integrated Lights-Out (iLO) Advanced for ProLiant BladeSystem

HPE iLO Advanced for BladeSystem including 1yr 24x7 Technical Support and Updates E-LTU	E6U60ABE
HPE iLO Advanced for BladeSystem including 1yr 24x7 Support 1-server LTU	512488-B21
HPE iLO Advanced for BladeSystem including 3yr 24x7 Technical Support and Updates E-LTU	E6U63ABE
HPE iLO Advanced for BladeSystem including 1yr 24x7 Support 8-server LTU	512489-B21

HPE Integrated Lights-Out (iLO)

HPE iLO Scale Out

HPE iLO Scale-Out 3yr 24x7 Tech Support and Updates Flexible Quantity LTU	BD776A
HPE iLO Scale-Out 1yr 24x7 Tech Support and Updates Flexible Quantity LTU	BD778A
HPE iLO Scale-Out including 3yr 24x7 Tech Support and Updates Flex Qty E-LTU	BD776AAE
HPE iLO Scale-Out including 1yr 24x7 Tech Support and Updates Flex Qty E-LTU	BD778AAE

Additional Options

HPE iLO Scale-Out including 3yr 24x7 Tech Support and Updates Tracking LTU	BD777A
HPE iLO Scale-Out including 1yr 24x7 Tech Support and Updates Tracking LTU	BD779A

NOTE: Customer will receive a license entitlement certificate, which must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HPE Software Technical Support Service.
NOTE: For additional license kits, including electronic delivery options, please see the iLO QuickSpecs at http://www.hp.com/go/iLO

Converged Infrastructure Management Software	**HPE OneView**	
	HPE OneView with iLO Advanced	
	HPE OneView including 3yr 24x7 Support Physical 1-server LTU	E5Y34A
	HPE OneView including 3yr 24x7 Support Flexible Quantity E-LTU	E5Y35AAE
	HPE OneView Physical Media Kit LTU	E5Y37A
	HPE OneView w/o iLO including 3yr 24x7 Support 1-server LTU	P8B24A
	HPE OneView w/o iLO including 3yr 24x7 Support Flexible Quantity E-LTU	P8B26AAE
	HPE OneView w/o iLO including 3yr 24x7 Support 1-server FIO LTU	P8B31A

NOTE: For additional license kits please see the QuickSpecs at https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111367

Cloud Management Software	**Helion Software**	
	HPE Helion OpenStack	
	HPE Helion OpenStack 5yr 9x5 Support RTU	P9A13A
	HPE Helion OpenStack 5yr 9x5 Support E-RTU	P9A13AAE
	HPE Helion OpenStack 5yr 24x7 Support RTU	P9A14A
	HPE Helion OpenStack 5yr 24x7 Support E-RTU	P9A14AAE
	HPE Helion Platform	
	HPE Helion Platform 5yr 9x5 Support RTU	P9A15A
	HPE Helion Platform 5yr 9x5 Support E-RTU	P9A15AAE
	HPE Helion Platform 5yr 24x7 Support RTU	P9A16A
	HPE Helion Platform 5yr 24x7 Support E-RTU	P9A16AAE
	HPE Helion Dev Plat	
	HPE Helion Development Platform 5yr 9x5 Support RTU	P9A17A
	HPE Helion Development Platform 5yr 9x5 Support E-RTU	P9A17AAE
	HPE Helion Development Platform 5yr 24x7 Support RTU	P9A18A
	HPE Helion Development Platform 5yr 24x7 Support E-RTU	P9A18AAE

NOTE: For additional information on HPE Helion Portfolio please go to: http://www8.hp.com/us/en/cloud/helion-portfolio.html#!&pd1=2&pd3=2&pd5=2

High Performance	**HPE Cluster Management Utility**

Additional Options

Clusters	HPE Insight Cluster Management Utility 1yr 24x7 Flexible LTU	QL803B

HPE Insight Cluster Management Utility 3yr 24x7 Flexible LTU — BD476A
NOTE: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.

HPE Insight Cluster Management Utility Media — BD477A
NOTE:NOTE: For additional license kits please see the QuickSpecs at:
https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111735

HPE I/O Accelerator Options	HPE 1.2TB Read Intensive Mezzanine PCIe Workload Accelerator for BladeSystem c-Class	794603-B21
	HPE 1.6TB Read Intensive Mezzanine PCIe Workload Accelerator for BladeSystem c-Class	794605-B21

HPE Security	HPE 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 and 2012. 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 and 2012 has not been tampered with while the system was offline.
NOTE: For more information about TPM, including a white paper, go to **https://www.hpe.com/h20195/v2/getpdf.aspx/4aa5-4782enw.pdf**
NOTE: ProLiant OS pre-installed units will come with the partition required for TPM deployment.
NOTE: The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.

HPE Storage Controllers	**HPE Smart Array P731m Controller**	
	HP Smart Array P731m/2GB FBWC 6Gb 4-ports Ext Mezzanine SAS Controller	698535-B21
	HP Smart Array P731m/512 FBWC 6Gb 4-ports Ext Mezzanine SAS Controller	698536-B21

NOTE: This option is a Type B mezzanine and is only supported on mezzanine slot 2.
NOTE: Please see the QuickSpecs for Technical Specifications and additional information at:
https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111381
(Smart Array P731m Controller)

HPE Smart Array P721m Controller		
HP Smart Array P721m/2GB FBWC 6Gb 4-ports Ext Mezzanine SAS Controller		650072-B21
HP Smart Array P721m/512 FBWC 6Gb 4-ports Ext Mezzanine SAS Controller		655636-B21

NOTE: This option is a Type B mezzanine and is only supported on mezzanine slot 2.
NOTE: Please see the QuickSpecs for Technical Specifications and additional information at:

Additional Options

https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111449
(Smart Array P721m Controller)

HPE Secure Encryption	HP Secure Encryption per Svr Entitlement	C9A82AAE

HPE InfiniBand Mezzanines	**NOTE:** When an InfiniBand adapter is installed in mezzanine slot 1, only one port is active (regardless of operating mode). When installed in any other mezzanine slot, both ports are active.	
	NOTE: On PCIe 2.0 based servers like BL465 Gen8, InfiniBand FDR speeds are not feasible.	
	NOTE: InfiniBand QDR and FDR speeds are only supported on the HPE BladeSystem c7000 Enclosure. For additional information, please see the HPE BladeSystem c7000 Enclosure and InfiniBand QuickSpecs at: **http://h18004.www1.hp.com/products/QuickSpecs/12586_div/12586_div.html** **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04154440**	
	HP Infiniband QDR/Ethernet 10Gb 2-port 544M Adapter	644160-B21
	NOTE: The QDR InfiniBand adapter may be installed in any mezzanine slot of the server.	
	HP Infiniband FDR/Ethernet 10Gb/40Gb 2-port 544M Adapter	644161-B22
	NOTE: The FDR InfiniBand adapter must be installed in mezzanine slot 1 for FDR mode and may be installed in any mezzanine slot if operated in any other mode.	
	HP InfiniBand FDR 2-port 545M Adapter	702213-B21

HPE Ultrium Tape Blades	HP StoreEver LTO-5 Ultrium SB3000c Tape Blade	BS580B
	NOTE: LTO-5 Ultrium tape technology.	
	NOTE: For the above Ultrium tape drives, please see the QuickSpecs for technical specifications and additional information at: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04154444**	

	HPE D2220sb Build-to-order Storage Blade NOTE:NOTE: For additional information, please see the QuickSpecs for technical specifications and additional information at: https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111399	QW917A

HPE Expansion Blade	HPE BLc PCI Expansion Blade NOTE:NOTE: The PCI Expansion Blade provides PCI card slots for an adjacent c-Class Server Blade. Order one PCI expansion Blade for each server blade needing standard PCI-X or PCIe expansion slots. NOTE:NOTE: Ships with one pre-installed PCI-X connect board. Also includes one PCIe connect board which requires installation. NOTE:NOTE: Please see the QuickSpecs for technical specifications and additional information at: https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04123380	448018-B21

HPE Flash Media Kits for USB Drives	**HPE Enterprise Mainstream Flash Media Kits for Memory Cards**	
	HPE 8GB USB Enterprise Mainstream Flash Media Drive Key Kit	737953-B21
	HPE 8GB microSD Enterprise Mainstream Flash Media Kit	726116-B21

Additional Options

HPE 32GB microSD Mainstream Flash Media Kit	700139-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04123175

HPE Pointnext operational services

Proactive Care - Collaborative Support plus Proactive services delivered by the on shore/near shore Advanced Solution Center (ASC) and backed by the global delivery organization, end-to-end case ownership from a Technical Solution Specialists and Technical Account Manager who remotely delivers firmware/software revision management, proactive scans and incident trend reports. Recommended for customers running a virtualized infrastructure and/or customers who desire an enhanced call support experience.

HPE 3 year Proactive Care Call to Repair 24x7 with DMR ProLiant BL4xxc Service	U3B23E
HPE 3 year Proactive Care 24x7 ProLiant BL4xxc Service	U3B14E
HPE 3 year Proactive Care 24x7 with DMR ProLiant BL4xxc Service	U3B17E
HPE 3 year Proactive Care Call to Repair ProLiant BL4xxc Service	U3B20E

Installation Services - reduce the time required to get your system up and running and help minimize disruptions to your business.

HPE Install c-Class Server Blade Service	UE493E
HPE Hardware Installation during Non Standard Hours c-Class Server Blade Service	UG869E

NOTE: Additional HPE Pointnext operational services can be found at:
http://www.hp.com/go/cpc

Memory

For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool:
http://www.hp.com/go/ddr3memory-configurator

Memory Subsystem Architecture

The memory subsystem in this server blade is divided into four memory channels that support two DIMMs each for a total of eight (8) DIMM per installed processor or a grand total of sixteen (16) DIMMs for the server. Up to 32GB capacity DIMMs are supported for 512GB of memory (16 DIMM slots x 32GB per DIMM).

Memory Population Rules and Guidelines:

- A minimum of one DIMM per processor is required.
- 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.
- 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.
- RDIMMs and LRDIMMs cannot be mixed.
- DIMMs of different speeds may be mixed in any order; the server will select a common optimal speed.
- The maximum memory speed is a function of the memory type, memory configuration, and processor model.
- The maximum memory capacity is a function of the memory type and number of installed processors.
- HPE memory from previous generation servers is not compatible with the BL465c Gen8 Server Blade.
- To realize the performance memory capabilities listed in this document, HPE SmartMemory is required. For additional information, please see the HPE SmartMemory QuickSpecs at:
  http://h18000.www1.hp.com/products/QuickSpecs/14225_div/14225_div.html
- For memory population rules and additional memory guidelines, please see the BL465c Gen8 user guide at
  http://www.hp.com/support

NOTE: Mixing 1.25V and 1.5V DIMMs is not allowed. Mixing DIMMs with different voltage levels will result in the higher voltage level being used resulting in higher power consumption.

BL465c Gen8 Supported Memory Bandwidth								
DIMM Type	**Registered DIMMS (RDIMMs)**							**Load Reduced (LRDIMMs)**
DIMM Rank	**Single Rank (1R)**	**Dual Rank (2R)**	**Single Rank (1R)**	**Dual Rank (2R)**	**Dual Rank (2R)**	**Dual Rank (2R)**	**Dual Rank (2R)**	**Quad Rank (4R)**
DIMM Capacity	4GB	4GB	8GB	8GB	8GB	16GB	16GB	32GB
DIMM Native Speed (MHz)	1333	1600	1333	1600	1600	1333	1600	1066
Voltage[1]	LV/	Std	LV	Std	Std	LV	Std	LV
[1]ULV= low voltage at 1.25V; LV= low voltage at 1.35V; Std = standard voltage at 1.5V.								
SLOTS THAT CAN BE POPULATED								
16 slot servers	16	16	16	16	16	16	16	16
MAXIMUM CAPACITY (GB)[1]								
16 slot servers	64	64	128	128	128	256	256	512
POPULATED DIMM SPEED (MHz)								
1 DIMM Per Channel	1333	1600	1333	1600	1600	1333	1600	1333
2 DIMM Per Channel	1333	1600	1333/ 1066	1600	1600	1333/ 1066	1600	1333
[1] Maximum capacity will vary based on individual server platform.								

Memory

> **NOTE:** Maximum memory speed is a function of the processor bus speed; see the table below "Memory Speed by Processor Model".

Memory Speed by Processor Model

Processor Models	Supported Memory Speeds
AMD Opteron™ 6300 Series processors	1600/1333/1066MHz

Standard and Maximum Memory Capacity (Pre-configured Models)

Pre Configured Models	Standard Memory	Maximum Memory Plus Optional Memory	Standard Memory Replaced with Optional Memory
AMD Opteron 6328, 6344, 6380	16GB (2x 8GB)	192GB (8x 8GB + 8x 16GB)	512GB (16x 32GB)

> **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

Memory options part number decoder
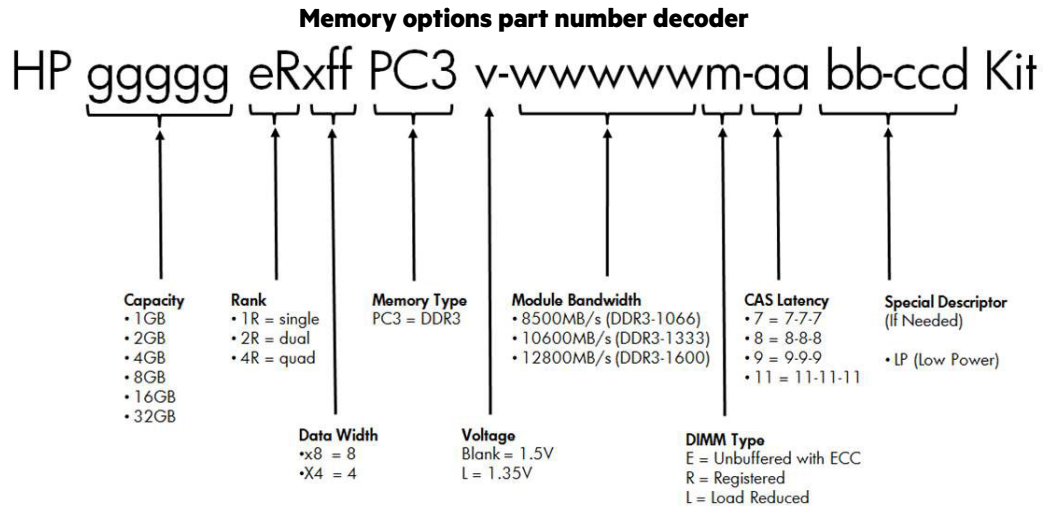
Following are memory options available from Hewlett Packard Enterprise:

HPE Memory	HPE SmartMemory	
	Registered DIMMs (RDIMMs)	
	HPE 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 LV Memory Kit	647883-B21
	HPE 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory	672633-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Memory Kit	695793-B21
	HPE 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647879-B21

Memory

HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 LV Memory Kit	647877-B21
HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647873-B21
HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 LV Memory Kit	647871-B21

Load Reduced DIMMs (LRDIMMs)
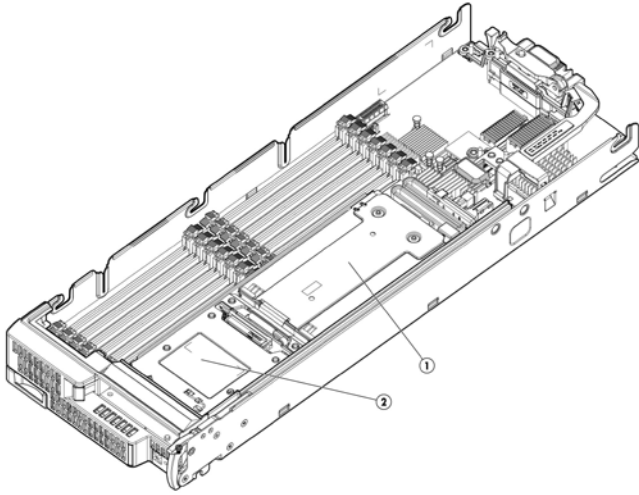
HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) LR CAS-9 LV Memory Kit	647885-B21

NOTE: Depending on the memory configuration, 1600MHz and 1333MHz memory may operate at a lower speed. Please see the Online Memory Configuration Tool for details at **http://www.hp.com/go/ddr3memory-configurator**

Storage

1-2   2 x SFF hot-plug SAS, SATA, SAS SDD, and SATA SSD hard drives

Technical Specifications

System Unit	**Dimensions** (H x W x D) (with bezel)	7.11 x 2.18 x 20.37 in (18.07 x 5.54 x 51.76 cm)	
	Weight (approximate)	Maximum: all processors, 16 DIMMs, hard drives, mezzanine cards, and two flash cache batteries installed)	14.00 lb (6.33 kg)
		Minimum: one processor and 2 DIMMs installed	10.50 lb (4.75 kg)

Power Specifications

For power specifications including input requirements, BTU rating, and power supply output, please see the:

- HPE BladeSystem c3000 Enclosure QuickSpecs at **http://h18000.www1.hp.com/products/QuickSpecs/12790_div/ 12790_div.html**
- HPE BladeSystem c7000 Enclosure QuickSpecs at **http://h18000.www1.hp.com/products/QuickSpecs/12810_div/ 12810_div.html**

NOTE: For optimal cooling and system performance the BL465c Gen8 requires the c7000 enclosure to be configured with 10 fans and the c3000 enclosure to be configured with 6 fans.

To review typical system power ratings use the HPE Power Advisor which is available via the online tool located at: **http://www.hp.com/go/hppoweradvisor**

System Inlet Temperature	Operating	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 1,000 ft) above sea level to a maximum of 3,050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
	Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
Altitude	Operating	3,050 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 (1,500 ft/min).
	Non-operating	9,144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1,500 ft/min).

Acoustic Noise

For acoustic noise specifications, please see the HPE BladeSystem c-Class Enclosures QuickSpecs located at:
HPE BladeSystem c3000 Enclosure QuickSpecs:
http://h18000.www1.hp.com/products/QuickSpecs/12790_div/ 12790_div.html
HPE BladeSystem c7000 Enclosure QuickSpecs:
http://h18000.www1.hp.com/products/QuickSpecs/12810_div/

Technical Specifications

12810_div.html

HPE Smart Array P220i Controller		
	Disk Drive Interface	6Gb/s SAS (Serial Attached SCSI)
	Server Interface	x4 PCI Express host interface
	Cache Memory	512MB flash backed write cache (FBWC) cache standard
	Logical Drives Supported	64 (with included 512MB cache)
	Host Memory Addressing	64-bit, supporting servers memory space greater than 4GB
	RAID Support	RAID 1 (mirroring) and RAID 0 (striping)
	Other	Upgradeable firmware with recovery ROM Online drive flash (with SAS drives)
HPE FlexFabric 10Gb 2-port 554FLB FlexibleLOM	**Type**	Integrated dual-port KR 10Gb FlexibleLOM with FlexFabric (Flex-10, FCoE, hardware-based iSCSI, iSCSI boot, TCP/IP offload engine, and autosensing 1Gb/10Gb Ethernet capability)
	Network Processor	Emulex BE3
	Data Transfer Method	x8 PCI Express 2.0
	Network Transfer Rate	Two ports, each at 20Gbps full duplex; 40Gbps aggregate full duplex theoretical bandwidth **NOTE: Each port is autosensing 1Gb/10Gb, and can interoperate with 1Gb HPE BladeSystem c-Class interconnect components. Both ports will operate at the same speed.** **NOTE: Each port on the 554FLB adapter transmits from the server at 20Gbps (theoretical) full duplex.**
	IEEE Compliance	802.1p, 802.1q, 802.1qau, 802.3ad, 802.3ae, 802.3ap (10GBase-KX4) and 802.3x
	Standard Features	ProLiant Teaming including Network Fault Tolerance, Transmit Load Balancing, and Switch-Assisted Load Balancing 9K Jumbo frames (4K Jumbo frames when in FCoE mode) Microsoft Windows Receive Side Scaling (RSS) Hardware-based accelerated iSCSI iSCSI boot Flex-10 capability Fibre Channel over Ethernet (FCoE) TCP/IP offload engine (stateless TCP/IP) Autosensing 1Gb/10Gb Ethernet
Environment-friendly Products and Approach	**End-of-life Management and Recycling**	Hewlett Packard Enterprise offers end-of-life Hewlett Packard Enterprise product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: **http://www.hp.com/go/green**. To recycle your product, please go to: **http://www.hp.com/go/green** or contact your nearest Hewlett Packard Enterprise sales office. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard Enterprise web site at: **http://www.hp.com/go/green**. These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.

QuickSpecs

Summary of Changes

Date	Version History	Action	Description of Change
23-Oct-2017	From Version 30 to 31	Changed	Care Pack naming and Service and Support- Parts and Materials updated.
11-Dec-2015	From Version 29 to 30	Changed	Models, Configuration Information - Factory Integrated Models, Core Options, Additional Options, Memory Sections were updated.
		Added	SKUs added in Core Options section: 816929-B21, 816919-B21, 816909-B21, 816899-B21, 816889-B21, 816879-B21, 817011-B21, 816995-B21, 816985-B21, 816975-B21, 816965-B21, 816576-B21, 816572-B21, 816568-B21, 816562-B21, 822567-B21, 822563-B21, 822559-B21, 822555-B21.
		Removed	Obsolete SKU deleted: E5Y38A, E5Y39AAE, QK763A, QK762A, QK761A, AP880A
28-Sep-2015	From Version 28 to 29	Changed	Core Options section was updated. Some links updated as well
		Added	SKUs added: P8B24A, P8B26AAE, P8B31A
		Removed	Obsolete SKUs deleted: E5Y43AAE, F6Q89AAE, 741155-B21
17-Aug-2015	From Version 27 to 28	Added	SKUs added in Additional Options and Core Options sections: C9A82AAE, 804677-B21, 804671-B21, 804665-B21, 804639-B21, 804631-B21, 804625-B21, 832414-B21, 804613-B21, 804605-B21, 804599-B21, 804593-B21, 804587-B21, 804581-B21, 804575-B21
		Removed	Obsolete SKUs deleted: AQ697B, QW914A, QW915A, U6W98E
01-Jun-2015	From Version 26 to 27	Added	SKUs added in Core Options Section: 748387-B21, 791034-B21
		Removed	Obs SKUs removed from Core Options Sections: 741159-B21, 741151-B21
30-Mar-2015	From Version 25 to 26	Added	SKUs Added: 802578-B21, 802582-B21, 802586-B21, 802891-B21, 765453-B21, 765455-B21, 765464-B21, 781518-B21, 785069-B21, 765466-B21, 789135-B21, 789145-B21, 789155-B21, 794603-B21, 794605-B21, 781516-B21, 785067-B21
		Removed	Obsolete SKUs deleted: 741146-B21, 741138-B21, 741142-B21
09-Feb-2015	From Version 24 to 25	Changed	Overview, Standard Features, Optional Features and Core Options sections were updated
		Added	HDD SSD 6G and 12G: 779164-B21, 779168-B21, 779172-B21, 779176-B21, 764923-B21, 764925-B21, 764927-B21, 764929-B21
		Removed	Obsolete SKUs deleted: 686868-B21, 634970-B21, 660080-B21, 634973-B21, 686870-B21, 634978-B21, 660081-B21, 634983-B21, 660079-B21, 686869-B21, 697574-B21
01-Dec-2014	From Version 23 to 24	Changed	Standard Features and Memory sections were updated
		Added	SKU Added on Hard Drives: 757339-B21
		Removed	Obsolete SKUs deleted: 647869-B21
01-Nov-2014	From Version 22 to 23	Changed	Service and Support section was updated
29-Sep-2014	From Version 21 to 22	Added	SKUs added on Core Options: 756657-B21, 756636-B21, 756621-B21, 756601-B21
		Removed	Obsolete SKUs were deleted: 608447-B21

Summary of Changes

18-Aug-2014	From Version 20 to 21	Changed	Maximum Internal Storage, Configuration Information - Factory Integrated Models sections updated
		Added	SKUs added on Hard Drives: 759212-B21, 759210-B21, 759208-B21
		Removed	Maximum Internal Storage section deleted from Storage Obsolete SKUs removed: 647875-B21, 647881-B21
03-Jul-2014	From Version 19 to 20	Added	FlexFabric Adapters were added: 700065-B21, 700066-B21, 700076-B21
10-Jun-2014	From Version 18 to 19	Changed	Overview, Standard Features, Models, Configuration Information, Core Options, Additional Information and Storage sections were updated
31-Mar-2014	From Version 17 to 18	Changed	Processors in Configuration Information and HPE Insight Control were revised.
18-Feb-2014	From Version 16 to 17	Changed	Processors, Storage Controllers, InfiniBand Mezzanines, and Care Pack Services were revised.
13-Dec-2013	From Version 15 to 16	Changed	HPE OneView and Converged Infrastructure Management Software were added Models, Processors, Hard Drives, Storage Blades, and HPE Flash Media Kits for USB Drives were revised
13-Sep-2013	From Version 14 to 15	Changed	HPE Insight management software, High Performance Clusters, HPE Networking, HPE Fibre Channel, Hard Drives, Storage Controllers, and Storage Blades were revised.
13-May-2013	From Version 13 to 14	Changed	Changes were made in the following sections: Configuration Information - Step 3 Additional Options - HPE Insight Control, HPE InfiniBand Mezzanines, HPE Storage Blades, HPE Pointnext operational services
25-Mar-2013	From Version 12 to 13	Added	Standard Features: Added notes to the At A Glance section. Configuration Information - Factory Integrated Models: Added notes to Step 4
		Removed	Removed Platinum reference throughout QS
01-Mar-2013	From Version 10 to 11	Added	Core Options: Added Part number 665246-B21 to HPE Networking section.
25-Feb-2013	From Version 9 to 10	Changed	Changes were made in the following sections: Standard Features Core Options - HPE Networking, HPE Hard Drives Additional Options - HPE Insight Control, HPE InfiniBand Mezzanines Memory Chart Storage
18-Jan-2012	From Version 8 to 9	Changed	Changes were made in the following sections: Overview- Processor Core Options - HPE Fibre Channel, HPE Memory Additional Options - HPE Storage Controllers, HPE InfiniBand Mezzanines
12-Dec-2012	From Version 7 to 8	Changed	Changes were made to the North America and Canada versions only.
04-Dec-2012	From Version 6 to 7	Changed	Changes were made throughout the QuickSpecs.
28-Sep-2012	From Version 5 to 6	Changed	Changes were made in Options and Memory sections.
24-Sep-2012	From Version 4 to 5	Changed	Changes were made in Standard Features, Optional Features, Additional Options and Technical Specifications sections.
31-Aug-2012	From Version 3 to 4	Changed	Changes made in Overview, Configuration Information, Core Options, Additional Options and Memory.
13-Aug-2012	From Version 2 to 3	Changed	Changes made in Overview, Configuration Information, Core Options, Additional Options and Memory.
03-Aug-2012	From Version 1 to 2	Changed	Changes made to the North America and Canada versions only.

Summary of Changes

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