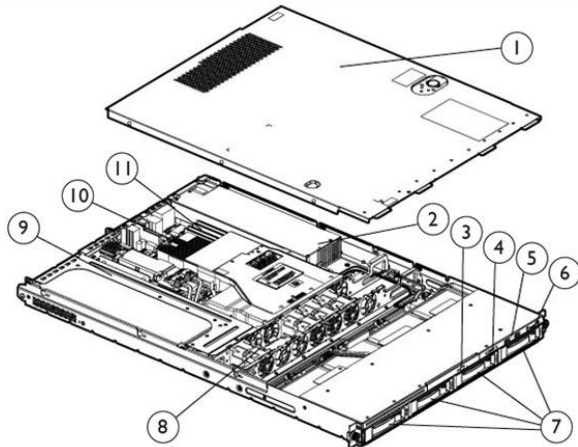


### Overview

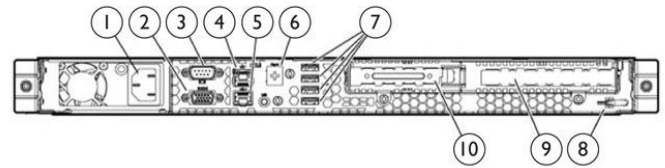
#### HP ProLiant DL120 Generation 7 (G7)

The HP ProLiant DL120 G7 Server is an entry-level rack-optimized server providing you with all the confidence of an HP ProLiant server. The single processor, 1U server is ideal for single-application IT infrastructure, web and edge-of-network applications. The HP ProLiant DL120 provides two PCI-Express slots with optional upgrades, including HP HBAs and Smart Array Controllers, which provide support for SAS hard disk drives. The DL120 G7 supports HP iLO 3 Remote Management which provides cost-effective remote management from anywhere, anytime. Plus, you get the cost-effective solution of a single-processor platform with the performance advantages of quad-core technology.



#### Front View:

1. Cover
2. Power Supply
3. Optional Slim 9.5mm DVD ROM
4. System ID Tag
5. Front USB connectors (2)
6. Power Button, UID Button, and Front LED Indicators
7. Support for up to four LFF Hot Plug SATA/SAS or eight SFF Hot Plug SATA/SAS Hard Drives
8. Non Hot Plug Dual Rotor Fans (4)
9. Two PCI express Slots (one x16, one x4 Lanes)
10. Processor Socket
11. Four PC3-10600E UB ECC DDR3 Memory Slots



#### Rear View:

1. Power cord connector
2. Video connector
3. Serial connector
4. NIC 1 connector
5. NIC 2 connector / shared iLO3 management port
6. iLO3 dedicated LAN port (optional)
7. USB connectors (4)
8. T10/T15 tool
9. Expansion slot 4, PCI e2 x16
10. Expansion slot 3, PCI e2 x8

#### What's New

- Support for HP 1.2TB 6G SAS 10K 2.5in DP ENT HDD
- Support for HP 4TB 3G SATA 7.2k 3.5in MDL HDD

### Standard Features

**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

#### Quad-Core Processors

Intel® Xeon® E3-1280 (3.50GHz/4-core/8MB/95W), 1333, HT, Turbo 1/2/3/4 Processor

**NOTE:** Available through Configure To Order only. See Factory Integration Models section for more details.

Intel® Xeon® E3-1270 (3.40GHz/4-core/8MB/80W), 1333, HT, Turbo 1/2/3/4 Processor

**NOTE:** Available through Configure To Order only. See Factory Integration Models section for more details.

Intel® Xeon® E3-1240 (3.30GHz/4-core/8MB/80W), 1333, HT, Turbo 1/2/3/4 Processor

Intel® Xeon® E3-1230 (3.20GHz/4-core/8MB/80W), 1333, HT, Turbo 1/2/3/4 Processor

**NOTE:** Available through Configure To Order only. See Factory Integration Models section for more details.

Intel® Xeon® E3-1220 (3.10GHz/4-core/8MB/80W), 1333, Turbo 1/2/3/4 Processor

#### Dual-Core Processors

Intel® Xeon® E3-1220L (2.2GHz/2-core/3MB/20W), 1333, Turbo 0/0/0/10 Processor

**NOTE:** Available through Configure To Order only. See Factory Integration Models section for more details.

Intel® Core™ i3-2130 (3.40GHz/2-core/3MB/65W), 1333, HT Processor

**NOTE:** Available through Configure To Order only. See Factory Integration Models section for more details.

Intel® Core™ i3-2120 (3.30GHz/2-core/3MB/65W), 1333, HT Processor

**NOTE:** Available through Configure To Order only. See Factory Integration Models section for more details.

Intel® Core™ i3-2100 (3.10GHz/2-core/3MB/65W), 1333, HT Processor

**NOTE:** Available through Configure To Order only. See Factory Integration Models section for more details.

Intel® Pentium® G860 (3.0GHz/2-core/3MB/65W), 1333 Processor

**NOTE:** Available through Configure To Order only. See Factory Integration Models section for more details.

Intel® Pentium® G850 (2.90GHz/2-core/3MB/65W), 1333 Processor

**NOTE:** Available through Configure To Order only. See Factory Integration Models section for more details.

Intel® Pentium® G840 (2.80GHz/2-core/3MB/65W), 1333 Processor

**NOTE:** Available through Configure To Order only. See Factory Integration Models section for more details.

Intel® Pentium® G630 (2.70GHz/2-core/3MB/65W), 1066 Processor

**NOTE:** Available through Configure To Order only. See Factory Integration Models section for more details.

Intel® Pentium® G620 (2.60GHz/2-core/3MB/65W), 1066 Processor

**NOTE:** Available through Configure To Order only. See Factory Integration Models section for more details.

Intel® Celeron® G530 (2.40GHz/2-core/2MB/65W), 1066 Processor

**NOTE:** Available through Configure To Order only. See Factory Integration Models section for more details.

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

**NOTE:** Turbo indicates the maximum potential frequency increment when using Intel® Turbo Boost Technology, with 4, 3, 2, and 1 cores active.

**NOTE:** DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

### Standard Features

**Cache Memory**  
One of the following depending on Model

Integrated 1x8MB Level3 Intel® Smart Cache  
Integrated 1x3MB Level3 Intel® Smart Cache

**Chipset** Intel® C200 Series Chipset

**Memory Protection** ECC

**Memory**  
One of the following depending on Model

Type	DDR3 1333MHz Unbuffered (UDIMM)
DIMM Slots	Total 4 DIMM slots
Standard (Entry Model)	2GB (1x2GB) UDIMM
Standard (Base Models)	4GB (2x2GB) UDIMM
Standard (Performance Models)	4GB (2x2GB) UDIMM
Maximum Memory	Supports up to 32GB DDR3 1333 Unbuffered ECC DIMM Supports up to 4 UDIMMs

**NOTE:** Depending on the memory configuration and processor model, the memory speed may run at 1333MHz or 1066MHz. Please see the Online Memory Configuration Tool at: [www.hp.com/go/ddr3memory-configurator](http://www.hp.com/go/ddr3memory-configurator).

**Network Controller** HP NC112i 1-Port Ethernet Server Adapter (x2)

Expansion Slots	Technology	Bus Width***	Connector Width	Bus Number*	Device No.**	Form Factor	Notes
1 (Standard)	PCIe G2	X16	x16	0	1	Full length, full height slot	
2 (Standard)	PCIe G2	X4	x8	0	6	Half height, low profile slot	

\* Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number.

\*\* Slots are enumerated differently based on OS. MS OS's enumerate from lowest to highest Device ID by bus (starting with the lowest bus)

\*\*\* Indicates the number of physical electrical lanes running to a PCI-e connector.

**Storage Controllers**

Entry and Base Model	HP Smart Array B110i SATA RAID Controller (RAID 0/1/1+0) <b>NOTE:</b> Transfer rate: 3Gb/s SATA <b>NOTE:</b> SATA Hot Plug available via Hot Plug Advance Pack for B110i <b>NOTE:</b> Hot Plug SAS and SATA controllers available via PCI card option. <b>NOTE:</b> Available upgrade: HP Smart Array Hot Plug Advance Pack for B110i.
Performance Model	HP Smart Array P212/256MB Controller (RAID 0/1/1+0/5/5+0) <b>NOTE:</b> Available upgrades: Battery Kit upgrade (for BBWC), and Smart Array Advanced Pack (SAAP).

**Internal Storage Devices Drives**

Optical Drive	Optional 9.5mm DVD-ROM, or DVD-RW Drive
Hard Drives One of the following depending on Model	Entry Model (Cold Plug) Up to 4 pluggable SATA/SAS 3.5" drives supported. 1x250GB pluggable SATA 3.5" drive ships standard

### Standard Features

		Base Model (Cold Plug)	<p><b>NOTE:</b> SAS requires optional HBA or SA card</p> <p><b>NOTE:</b> SATA Hot Plug functionality available via Hot Plug Advance Pack for B110i</p> <p>Up to 4 pluggable SATA/SAS 3.5" drives supported. 1x250GB pluggable SATA 3.5" drive ships standard</p> <p><b>NOTE:</b> SAS requires optional HBA or SA card.</p> <p><b>NOTE:</b> SATA Hot Plug functionality available via Hot Plug Advance Pack for B110i</p>
		Performance Model (Hot Plug)	Up to 4 hot plug SATA/SAS 3.5" drives supported. None ships standard
<b>Maximum Internal Storage</b> One of the following depending on Model	Hot Plug SAS Hot Plug SATA	8.0TB 16.0TB	(4 x 2TB) 3.5" SAS (4 x 4TB) 3.5" SATA
<b>Interfaces</b>	Serial Graphics Network RJ-45 Optional iLO 3 remote RJ-45 management port USB 2.0	1 1 (rear) 2 1	<p><b>NOTE:</b> This is shared NIC port for iLO. If users do not purchase iLO dedicated NIC option card they can still use this port as shared NIC Port 7 (2 front, 1 internal, 4 rear)</p> <p><b>NOTE:</b> Internal USB port (optional) for flexible storage, security, or USB drive key deployment.</p>
<b>Industry Standard Compliance</b>	ACPI 3.0a PCI Express Rev 2.0 PXE Support WOL Support Microsoft® Logo certifications USB 2.0 IPMI 2.0 DCMI 1.0 Serial ATA Gen II		
<b>Server Power Cords</b>	North America Japan ROW	One 6' Highline (IEC-IEC) power cord ships standard One 6' Highline (IEC) power cord and one 6' Lowline power cord ship standard One 6' Highline (IEC) power cord ships standard	<p><b>NOTE:</b> HP ProLiant DL120 G7 server ship standard worldwide with a C13 to C14 2M Highline jumper cord. Japanese models also include a 2M Lowline power cord. If customers require a local power cord, they can check the power cord matrix for the appropriate country specific cord. Please see the following power cord matrix: <a href="http://www.hp.com/go/powercordmatrix">http://www.hp.com/go/powercordmatrix</a>.</p>
<b>Power Supply</b>	Auto-sensing PFC Power Supply, CE Mark Compliant		
<b>System Fans</b>	4 dual rotor fans ship standard.		

### Standard Features

<b>Required Cabling</b>	For required cabling information, refer to the Web site at: <a href="http://www.hp.com/servers/dl120G7">www.hp.com/servers/dl120G7</a> .	
<b>Operating Systems and Virtualization Software</b>	<a href="#">Microsoft Windows Server</a> <a href="#">Red Hat Enterprise Linux (RHEL)</a> <a href="#">SUSE Linux Enterprise Server (SLES)</a> <b>NOTE:</b> For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, including how to purchase from HP, please visit our OS Support Site at: <a href="http://www.hp.com/go/ossupport">http://www.hp.com/go/ossupport</a>	
<b>Graphics</b>	Integrated Matrox G200eH, 16MB video standard <ul style="list-style-type: none"><li>• 16 bit color: maximum resolution of 1920 x 1200</li><li>• 32 bit color: maximum resolution of 1280 x 1024</li></ul> <b>NOTE:</b> iLO Remote Console is operational in all video mode and color depths. Remote Console viewing displays 15bpp or 32768 colors. <b>NOTE:</b> The resolution and frequency limitations of the attached monitor will further limit the combinations of resolution and depth.	
<b>Form Factor</b>	Rack (1U), (1.75 in/44.45 mm), 27.56" deep <b>NOTE:</b> Fixed mounting rails included with all models.	
<b>HP Insight management software</b>	HP Insight Foundation suite for ProLiant	Insight Foundation is being baselined at version v8.70 which means the following: <ul style="list-style-type: none"><li>• Its Media Kit (contains 2 SmartStart CDs, the Firmware DVD, and the Management DVD) will continue to ship with all supported ProLiant G7 or earlier BTO servers until the last supported server is no longer shipping.</li><li>• The Media Kit will not be updated past version 8.70.</li><li>• ProLiant G7 or earlier CTO servers are able to order the Media Kit with the understanding that the media is not updated. Please check specific server QuickSpecs for availability of CTO Kit.</li><li>• PSP and Firmware DVD downloads will be updated through 2Q 2012 at the HP Insight Foundation Suite for ProLiant downloads tab: <a href="http://www.hp.com/go/foundation">http://www.hp.com/go/foundation</a></li></ul> <p>Customers are urged to use the replacement product, HP Service Pack for ProLiant, instead of Insight Foundation Suite which is found at these location:</p> <ul style="list-style-type: none"><li>• <a href="http://www.hp.com/go/spp">www.hp.com/go/spp</a></li><li>• <a href="http://www.hp.com/go/spp/download">www.hp.com/go/spp/download</a></li></ul> <p>HP Integrated Lights-Out Standard (iLO 3)</p> <p>HP Integrated Lights-Out Standard (iLO 3) simplifies server setup, health monitoring, and lights-out remote administration of ProLiant ML, DL, and BL servers. HP iLO functions without additional software and can be accessed from any location via a web browser. HP iLO works hand-in-hand with HP Systems Insight Manager, Insight Control suites, and Insight Dynamics for ProLiant, helping customers unleash the value of the ProLiant platform and deliver the highest possible quality of IT service. For more information, visit: <a href="http://www.hp.com/go/iLO">www.hp.com/go/iLO</a></p>

### Standard Features

Subscriber's Choice	Subscriber's Choice Driver and Support Alerts/Notifications is a web-based email subscription service that provides software and driver change notifications for ProLiant products. Sign up at: <a href="http://www.hp.com/go/subscriberschoice">http://www.hp.com/go/subscriberschoice</a> and customize your profile to receive various new alerts as they become available, on a weekly or monthly basis.
ROMPaq, software and latest drivers	The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options; downloaded from Software and Drivers download pages website at: <a href="http://www.hp.com/go/support">http://www.hp.com/go/support</a> and from <a href="http://www.hp.com/servers/easysetup">www.hp.com/servers/easysetup</a> . Contains the following: <ul style="list-style-type: none"><li>• HP Insight Management Agents for Systems Insight Manager (SIM) Integration</li><li>• HP Systems Management Homepage</li><li>• Array Configuration Utility (ACU)</li><li>• Array Diagnostics Utility (ADU)</li><li>• HP Insight Diagnostics</li></ul>

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### Security

Power-on password
Keyboard password
USB Port control
Removable DVD-ROM Drive Assembly (optional)
Dedicated/Shared L0100 management NIC port
Administrator's password
iLO 3 (Integrated Lights-Out 3) has 12 customizable user accounts and SSL encryption
iLO 3 can be disabled via a Global Setting
iLO Advanced supports directory services integration

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### Warranty

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for one year from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details. Additional information regarding worldwide limited warranty and technical support is available at: <a href="http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html">http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html</a>
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### Optional Features

#### HP Insight Control management software

HP Insight Control

HP 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, visit : [www.hp.com/go/insightcontrol](http://www.hp.com/go/insightcontrol).

HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: <http://www.hp.com/services/insight>.

**NOTE:** HP Insight Control 7.2 introduces Insight Control server provisioning, a new capability ideal for multi-server OS and firmware provisioning to ProLiant and BladeSystem servers. Insight Control server provisioning is included and licensed as part of HP Insight Control. A media kit, "HP Insight Control server provisioning USB media kit" (# BD883A), including a USB, is available for customers who require a physical copy of the media loaded with Insight Control server provisioning software. Please note that this media kit is separate and in addition to the HP Insight Management DVD media kit (P/N C6N31A)

Insight Control server deployment

HP Insight Control server deployment is a deployment solution for HP ProLiant and Integrity servers hosted on a Windows CMS. It automates the process of deploying and provisioning server software, enabling companies to quickly and easily adapt to changing business demands. Insight Control server deployment includes software optimizations for HP servers, including the HP scripting toolkits, configuration jobs for leading industry-standard operating systems, sample unattended files, and HP server support packs that include software drivers, management agents, and important documentation. Deploying servers can be accomplished either through imaging or through scripting.

Insight Control server deployment is hosted on a Windows server and is intended for heterogeneous environments deploying Windows, Linux, VMware ESX and Microsoft Hyper-V systems.

Insight Control server deployment includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: <http://www.hp.com/services/insight>.

#### Storage Software

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

Storage software that gets the job done:

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



### Optional Features

- accessed or less valuable data to lower cost storage.
- **Storage Resource Management Software (SRM)**  
HP's storage resource management software reduces operational costs and provides the command and control foundation you need to efficiently manage and visualize your physical and virtual environments.
  - **Data Replication Software**  
HP offers array-based and host-based replication software for use in disaster recovery, testing, application development and reporting.
  - **Storage Device Management Software**  
Maximize your investment in HP storage and networking with software that enables hardware-specific configuration, performance tuning and connectivity management.
  - **HP StoreVirtual VSA**  
With HP StoreVirtual VSA you can use the power of virtualization to turn a set of heterogeneous and disconnected physical disk drives in your servers and storage devices into a single pool of logical storage capacity.

**NOTE:** For more information available Storage Software including QuickSpecs, please see: [www.hp.com/go/storage/software](http://www.hp.com/go/storage/software).

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#### HP Proactive Insight experience

Prevent problems with innovative, automated monitoring tools and proactive services. The HP Proactive Insight experience consist of using Insight Online, Insight Remote Support, and Proactive Care Support Service as one integrated solution. The Proactive Insight experience provides you with expert advice and personalized, cloud-based automated IT support, helping to prevent unplanned down time and solve problems quickly. For more information, visit: [www.hp.com/go/proactiveinsightexperience](http://www.hp.com/go/proactiveinsightexperience)

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#### Factory Express Portfolio for Servers and Storage

HP Factory Express offers configuration, customization, integration and deployment services for HP 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. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

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>.

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#### HP Simple Configurator

HP 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 HP's Customer Business Center or an Authorized Partner for assistance. <http://www.hp.com/products/configurator>



### Service and Support

#### Service and Support

##### **HP Technology Services for Industry Standard Servers and BladeSystem**

Capitalizing on HP ProLiant server and HP BladeSystem capabilities requires a service partner who understands your increasingly complex business technology environment. That's why it makes sense to team up with the people who know HP infrastructure hardware and software best - the experienced professionals at HP Services.

##### **What HP ProLiant and BladeSystem Services can do for you**

HP ProLiant and BladeSystem Services can help you design, deploy, test, integrate, support, and manage IT and infrastructure solutions. This way, HP proposes services solutions that include more than just uplift of base warranty. You can get the support you need by choosing from one of a number of service packaged solutions we have designed to address wider set of customer support needs. HP Technology Services meets business challenges with services offered in three packages:

##### **Optimized Care Package, Standard Care Package, and Basic Care Package**

Available for each product group. Such packaged solutions enable customers to optimize technology operations, minimize risk and drive better business outcomes with easy-to-buy, easy-to-use scalable support packages for servers, storage, networking and software.

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#### **Optimized Care Package Supports maintaining servers at optimum performance availability**

##### **HP ProLiant Server Hardware Installation**

Provides for the basic hardware installation of HP 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>

##### **3-Year HP 6 hour Hardware Support Onsite Call-to-Repair Service**

Provides an IT manager with a team of support specialists who will quickly begin troubleshooting the system to help return the hardware to operating condition within 6 hours of the initial service request to the HP Global Solution Center.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EN.pdf>

##### **Additional Services**

Software OS (Microsoft, Linux (SUSE/Red Hat) Installation and Start Up and Software Support) plus Microsoft or Linux education courses +30 Proactive Select Credits, Factory Express.

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#### **Standard Care Package Package that maintains high level of server availability**

##### **HP ProLiant Server Hardware Installation**

Provides for the basic hardware installation of HP 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>

##### **3-Year HP 24x7 4 hour Response, Hardware Support Onsite Service**

Provides you with rapid remote support and if required an HP authorized representative who will arrive on site any time and day of the year to begin hardware maintenance service within 4 hours of the service request being logged.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE.pdf>

##### **Additional Services**

Software OS (Microsoft, Linux (SUSE/Red Hat) Installation and Start Up and Software Support); +10 Proactive Select Credits, Factory Express.

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#### **Basic Care Package Delivers minimum recommended support service level**

##### **HP ProLiant Server Hardware Installation**

### Service and Support

Provides for the basic hardware installation of HP 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>

#### **3-Year HP 13x5 4 hour Response, Hardware Support Onsite Service**

Delivers increased equipment availability and productivity with rapid remote support and onsite response for your HP server and storage hardware.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE.pdf>

#### **Additional Services**

Software OS (Microsoft, Linux (SUSE/Red Hat) Installation and Start Up and Software Support), Factory Express.

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**Insight Remote Support** The packages include HP Insight Remote Support that uses proven technology to deliver secure, reliable 24x7 remote monitoring, diagnoses, and problem resolution. It is available at no additional cost to all warranty, HP Care Pack Service, and service agreement customers.

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**For more information** To learn more on HP ProLiant servers and HP BladeSystem servers, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: <http://www.hp.com/services/proliant>

### Pre-configured Models

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

**NOTE:** Not all models are available in all regions. Check with your local country HP offices for availability.

### Entry Model

<p><b>HP ProLiant DL120 G7 i3-2100 2GB-U 250GB LFF Cold Plug SATA B110i RAID 400W Svr</b> 628690-xx1</p>	<p><b>Processor</b> <b>Cache Memory</b> <b>Memory</b> <b>Network Controller</b> <b>Storage Controller</b> <b>Hard Drives</b> <b>Internal Storage</b> <b>Optical Drive</b> <b>Management</b> <b>Power Supply</b> <b>Form Factor</b> <b>Warranty</b></p>	<p>(1) Intel® Core™ i3-2100 (3.10GHz/2-core/3MB/65W,1333, HT) Processor 3MB Intel® Smart Cache 2GB (1 x 2GB) PC3-10600E DDR3 UB ECC <b>NOTE: Total of 4 DIMM slots</b> HP NC112i 1-port Ethernet Server (x2) HP Smart Array B110i SATA RAID Controller 1 x 250GB 3.5" SATA Up to 4 large form factor Cold Plug drives None ships standard HP Integrated Lights-Out Standard (iLO 3) Auto-sensing PFC Power Supply, CE Mark Compliant 1U Server Warranty includes 1 year Next Day Parts replacement, 1-Years Labor, 1-Years Onsite support. <b>NOTE: A HP Smart Array Hot Plug Advance Pack for B110i w/1y 24x7 Supp Physical 1 Svr LTU (TC421A) is required for Hot plug system.</b></p>
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### Base Model

<p><b>HP ProLiant DL120 G7 E3-1220 4GB-U 250GB LFF Cold Plug SATA B110i RAID 400W Svr</b> 628691-xx1</p>	<p><b>Processor</b> <b>Cache Memory</b> <b>Memory</b> <b>Network Controller</b> <b>Storage Controller</b> <b>Hard Drives</b> <b>Internal Storage</b> <b>Optical Drive</b> <b>Management</b> <b>Power Supply</b> <b>Form Factor</b> <b>Warranty</b></p>	<p>(1) Intel® Xeon® E3-1220 (3.10GHz/4-core/8MB/80W,1333, Turbo 1/2/3/4) Processor 8MB Intel® Smart Cache 4GB (2 x 2GB) PC3-10600E DDR3 UB ECC <b>NOTE: Total of 4 DIMM slots</b> HP NC112i 1-port Ethernet Server (x2) HP Smart Array B110i SATA RAID Controller 1 x 250GB 3.5" SATA Up to 4 large form factor drives None ships standard HP Integrated Lights-Out Standard (iLO 3) Auto-sensing PFC Power Supply, CE Mark Compliant 1U Server Warranty includes 1 year Next Day Parts replacement, 1-Years Labor, 1-Years Onsite support. <b>NOTE: A HP Smart Array Hot Plug Advance Pack for B110i w/1y 24x7 Supp Physical 1 Svr LTU (TC421A) is required for Hot plug system.</b></p>
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### Performance Model

<p><b>HP ProLiant DL120 G7 E3-1240 4GB-U P212/256 RAID 400W PS Server</b> 628692-xx1</p>	<p><b>Processor</b> <b>Cache Memory</b> <b>Memory</b></p>	<p>(1) Intel® Xeon® E3-1240 (3.30GHz/4-core/8MB/80W,1333, HT, Turbo 1/2/3/4) Processor 8MB Intel® Smart Cache 4GB (2 x 2GB) PC3-10600E DDR3 UB ECC <b>NOTE: Total of 4 DIMM slots</b></p>
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### Pre-configured Models

<b>Network Controller</b>	HP NC112i 1-Port Ethernet Server (x2)
<b>Storage Controller</b>	HP Smart Array P212/256MB Controller
<b>Hard Drives</b>	None ships standard
<b>Internal Storage</b>	Up to 4 large form factor Hot Plug drives
<b>Optical Drive</b>	None ships standard
<b>Management</b>	HP Integrated Lights-Out Standard (iLO 3)
<b>Power Supply</b>	Auto-sensing PFC Power Supply, CE Mark Compliant
<b>Form Factor</b>	1U
<b>Warranty</b>	Server Warranty includes 1 year Next Day Parts replacement, 1-Years Labor, 1-Years Onsite support. <b>NOTE:</b> A HP Smart Array Hot Plug Advance Pack for B110i w/1y 24x7 Supp Physical 1 Svr LTU (TC421A) is required for Hot plug system

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<b>Country Code Key</b>	xx=00	US
	xx=29	Japan
	xx=37	APD (Asia excluding Japan)
	xx=42	EURO
	xx=AA	PRC

### Configuration Information - Factory Integrated Models

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

**NOTE:** HP does not allow factory integration of options into standard models listed above. Configure-to-order servers must start with a CTO Chassis.

**NOTE:** FIO indicates that this option only available as a Factory Installable Option.

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

<b>Models</b>	<p>HP ProLiant DL120 G7 Pluggable 4 LFF Configure-to-order Server <span style="float: right;">647339-B21</span></p> <p><b>Includes:</b></p> <ul style="list-style-type: none"> <li>Embedded NC112i Gigabit Server Adapter (x2)</li> <li>1 full length PCI Express Gen2 x16 slot (x16 connector) and 1 half length low profile PCI Express x4 slot (x8 connector)</li> <li>HP Integrated Lights-Out Standard (iLO 3)</li> <li>HP Smart Array B110i SATA RAID Controller (RAID 0/1/1+0)</li> <li>Rack (1U) form factor, (1.75 in/44.45 mm)</li> <li>One Highline IEC Power Cord</li> <li>4 Non-Hot Plug Fans</li> <li>Fixed, mounting rails</li> </ul>
	<p>HP ProLiant DL120 G7 Hot Plug 8 SFF Configure-to-order Server <span style="float: right;">647340-B21</span></p> <p><b>NOTE:</b> This configuration requires the HP Smart Array P410 Controller be purchased separately to support 8SFF HDDs.</p> <p><b>Includes:</b></p> <ul style="list-style-type: none"> <li>Embedded NC112i Gigabit Server Adapter (x2)</li> <li>1 full length PCI Express Gen2 x16 slot (x16 connector) and 1 half length low profile PCI Express x4 slot (x8 connector)</li> <li>HP Smart Array B110i SATA RAID Controller (RAID 0/1/1+0)</li> <li>Rack (1U) form factor, (1.75 in/44.45 mm)</li> <li>One Highline IEC Power Cord</li> <li>4 Non-Hot Plug Fans</li> <li>Fixed, mounting rails</li> </ul>

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

<b>HP Processor</b>	<p><b>Quad-Core Processors</b></p> <ul style="list-style-type: none"> <li>HP DL120 G7 Intel® Xeon® E3-1280 (3.50GHz/4-core/8MB/95W) FIO Processor Kit <span style="float: right;">641916-L21</span></li> <li>HP DL120 G7 Intel® Xeon® E3-1270 (3.40GHz/4-core/8MB/80W) FIO Processor Kit <span style="float: right;">641915-L21</span></li> <li>HP DL120 G7 Intel® Xeon® E3-1240 (3.30GHz/4-core/8MB/80W) FIO Processor Kit <span style="float: right;">641914-L21</span></li> <li>HP DL120 G7 Intel® Xeon® E3-1230 (3.20GHz/4-core/8MB/80W) FIO Processor Kit <span style="float: right;">641913-L21</span></li> <li>HP DL120 G7 Intel® Xeon® E3-1220 (3.10GHz/4-core/8MB/80W) FIO Processor Kit <span style="float: right;">641912-L21</span></li> </ul> <p><b>Dual-Core Processors</b></p> <ul style="list-style-type: none"> <li>HP DL120 G7 Intel® Xeon® E3-1220L (2.2GHz/2-core/3MB/20W) FIO Processor Kit <span style="float: right;">641911-L21</span></li> <li>HP DL120 G7 Intel® Core™ i3-2130 (3.40GHz/2-core/3MB/65W) FIO Processor Kit <span style="float: right;">663419-L21</span></li> <li>HP DL120 G7 Intel® Xeon® i3-2120 (3.30GHz/2-core/3MB/65W) FIO Processor Kit <span style="float: right;">644361-L21</span></li> <li>HP DL120 G7 Intel® Xeon® i3-2100 (3.10GHz/2-core/3MB/65W) FIO Processor Kit <span style="float: right;">644360-L21</span></li> </ul>
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### Configuration Information - Factory Integrated Models

	HP DL120 G7 Intel® Pentium® G860 (3.0GHz/2-core/3MB/65W) FIO Processor Kit	663418-L21
	HP DL120 G7 Intel® Pentium® G850 (2.90GHz/2-core/3MB/65W) FIO Processor Kit	656610-L21
	HP DL120 G7 Intel® Pentium® G840 (2.80GHz/2-core/3MB/65W) FIO Processor Kit	656609-L21
	HP DL120 G7 Intel® Pentium® G620 (2.60GHz/2-core/3MB/65W) FIO Processor Kit	656608-L21
	HP DL120 G7 Intel® Celeron G530 (2.40GHz/2-core/2MB/65W) FIO Processor Kit	663416-L21
<b>HP Memory</b>	<b>Unbuffered with ECC DIMMs (UDIMM)</b>	
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500670-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500672-B21
	HP 8GB (1x8GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647909-B21
	<b>NOTE:</b> All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: <a href="http://www.hp.com/go/ddr3memory-configurator">www.hp.com/go/ddr3memory-configurator</a> .	
	<b>NOTE:</b> Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: <a href="http://www.hp.com/go/proliant-energy-efficient">www.hp.com/go/proliant-energy-efficient</a>	
<b>HP Power Supplies</b>	HP 365W Redundant Power Supply Kit w/ Backplane	532092-B21
	HP 400W Power Supply FIO Kit with Right Angle Connector	663420-B21
	<b>NOTE:</b> HP ProLiant servers ship with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). For a full list of optional HP power cords please go to <a href="http://www.hp.com/products/powercords">www.hp.com/products/powercords</a>	

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

<b>HP Storage Controllers</b>	<b>SAS Controllers</b>	
	HP Smart Array P212/256 BBWC 1-ports Int/1-ports Ext PCIe x8 FIO SAS Controller	491191-B21
	HP Smart Array P410/ZM 2-ports Int PCIe x8 FIO SAS Controller	462860-B21
	HP Smart Array P410/256 BBWC 2-ports Int PCIe x8 FIO SAS Controller	491195-B21
	HP Smart Array P411/256 BBWC 2-ports Ext PCIe x8 FIO SAS Controller	491193-B21
<b>HP Insight Software</b>	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License	C6N36A
<b>HP Insight Foundation Software</b>	HP ProLiant Foundation Pack Single Release Factory Integrated Software	534516-B21

### Step 4: Choose Additional Options for Factory Integration

**NOTE:** For additional options, please refer to the "Core Options and Additional Options" section below.

### Core Options

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

<b>HP Unique Options</b>	HP Internal USB Cable G6 Kit <b>NOTE:</b> This option required to connect a USB device internally.	536769-B21
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<b>HP Memory</b>	<b>Unbuffered with ECC DIMMs (UDIMM)</b>	
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500670-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500672-B21
	HP 8GB (1x8GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647909-B21
	<b>NOTE:</b> All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: <a href="http://www.hp.com/go/ddr3memory-configurator">www.hp.com/go/ddr3memory-configurator</a> .	
	<b>NOTE:</b> Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: <a href="http://www.hp.com/go/proliant-energy-efficient">www.hp.com/go/proliant-energy-efficient</a>	

<b>HP Optical Drives</b>	HP 9.5mm SATA DVD-ROM Optical Drive	481045-B21
	HP 9.5mm SATA DVD-RW Optical Drive	481047-B21

<b>HP Hard Drives</b>	<b>NOTE:</b> The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.	
	<b>NOTE:</b> Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.	
	<b>SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives</b>	
	HP 1.2TB 6G SAS 10K SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	693648-B21
	HP 900GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	619291-B21
	HP 600GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	581286-B21
	HP 450GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	581284-B21
	HP 300GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	507127-B21
	HP 146GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	512547-B21
	<b>SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives</b>	
	HP 600GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	516828-B21
	HP 450GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	516816-B21
	HP 300GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	516814-B21
	<b>SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives</b>	
	HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507616-B21
	HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507614-B21



### Core Options

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

HP 1TB 6G SAS 7.2K rpm SFF (2.5-inch) Dual Port Midline 1yr Warranty Hard Drive	605835-B21
HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507610-B21

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/12244\\_div/12244\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12244_div/12244_div.html)  
(Worldwide)

#### SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives

HP 1TB 3G SATA 7.2K rpm SFF (2.5-inch) Hot Plug Midline 1yr Warranty Hard Drive	625609-B21
HP 500GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive	507750-B21

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

HP 4TB 3G SATA 7.2k rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	694374-B21
HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	507632-B21
HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	454146-B21
HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	458928-B21

#### SATA Hot Plug LFF (3.5-inch) Entry (ETY) Drives

HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Entry 1yr Warranty Hard Drive	571230-B21
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**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/13021\\_div/13021\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13021_div/13021_div.html)  
(Worldwide)

### HP Networking

HP NC112T PCI Express Gigabit Server Adapter	503746-B21
HP NC360T PCI-E Dual Port Gigabit Server Adapter	412648-B21
HP NC365T 4-port Ethernet Server Adapter	593722-B21
HP NC373F PCI-E Multifunction 1000SX Gigabit Svr Adapter	394793-B21
HP NC373T PCI-E Multifunction Gigabit Server Adapter	394791-B21
HP NC375T PCI Express Quad Port Gigabit Server Adapter	538696-B21
HP NC382T PCI Express Dual Port Multifunction Gigabit Server Adapter	458492-B21

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

### HP I/O Expansion Options

HP Dedicated iLO Management Port Option	514206-B21
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### HP Power Supplies

HP 365W Redundant Power Supply Kit w/ Backplane	532092-B21
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**NOTE:** HP ProLiant servers ship with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). For a full list of optional HP power cords please go to [www.hp.com/products/powercords](http://www.hp.com/products/powercords)

### Additional Options

#### HP Insight Software

#### HP Insight Control

HP Insight Control including 1yr 24x7 Technical Support and Updates Electronic License C6N28AAE

HP Insight Control including 1yr 24x7 Technical Support and Updates Single Server License C6N27A

HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Electronic License C6N36AAE

HP Insight Control Server Provisioning Media Kit BD883A

HP Insight Management Media Kit C6N31A

**NOTE:** HP Insight Management Media Kit contains DVDs without licenses. Contains HP Systems Insight Manager, HP Insight Control, HP 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. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.

**NOTE:** Licenses ship without media. The HP Insight Management Media Kit can be ordered separately, or can be downloaded at:

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

**NOTE:** For additional license options please see the Insight Control QuickSpecs at: [http://h18000.www1.hp.com/products/quickspecs/12631\\_div/12631\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html)

#### HP Integrated Lights-Out (iLO) Advanced

HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License 512485-B21

**NOTE:** This license allows 1 server to be deployed and managed via HP iLO Advanced. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service.

HP iLO Advanced including 1yr 24x7 Technical Support and Updates Electronic License TA850AAE

**NOTE:** For additional license kits, including electronic delivery options, please see the QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/12362\\_div/12362\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12362_div/12362_div.html)

#### HP Insight Control server deployment

HP Insight Control Server Deployment including 1yr 24x7 Support Electronic License T9082AAE

HP Insight Control Server Deployment including 1yr 24x7 Support Single Server License 452151-B21

**NOTE:** Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key.

**NOTE:** Customer will receive a license entitlement certificate. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.

**NOTE:** Licenses ship without media. The Insight Software Media Kit can be ordered separately, or can be downloaded at: <http://www.hp.com/go/insightcontrol> (click on Download button).

**NOTE:** For additional license options please see the Insight Control QuickSpecs at:

### Additional Options

[http://h18000.www1.hp.com/products/quickspecs/12631\\_div/12631\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html)

<b>HP Security</b>	<p>HP Trusted Platform Module Option</p> <p><b>NOTE:</b> The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline.</p> <p><b>NOTE:</b> For more information about TPM, including a white paper, go to: <a href="http://www.hp.com/go/TPM">www.hp.com/go/TPM</a></p> <p><b>NOTE:</b> ProLiant OS pre-installed units will come with the partition required for TPM deployment.</p> <p><b>NOTE:</b> The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.</p>	488069-B21
<b>HP Storage Controllers</b>	<p><b>SAS Controllers</b></p> <p><b>Smart Array P212 Controller</b></p> <p>HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller 462828-B21</p> <p>HP Smart Array P212/256 1-ports Int/1-ports Ext PCIe x8 SAS Controller 462834-B21</p> <p><b>Smart Array P410 Controller</b></p> <p>HP Smart Array P410/256 2-ports Int PCIe x8 SAS Controller 462862-B21</p> <p>HP Smart Array P410/512 BBWC 2-ports Int PCIe x8 SAS Controller 462864-B21</p> <p>HP Smart Array P410/512 FBWC 2-ports Int PCIe x8 SAS Controller 578230-B21</p> <p>HP Smart Array P410/1G FBWC 2-ports Int PCIe x8 SAS Controller 572532-B21</p> <p><b>Smart Array P411 Controller</b></p> <p>HP Smart Array P411/1G FBWC 2-ports Ext PCIe x8 SAS Controller 572531-B21</p> <p>HP Smart Array P411/256 2-ports Ext PCIe x8 SAS Controller 462830-B21</p> <p>HP Smart Array P411/512 BBWC 2-ports Ext PCIe x8 SAS Controller 462832-B21</p> <p>HP Smart Array P411/512 FBWC 2-ports Ext PCIe x8 SAS Controller 578229-B21</p> <p><b>Optional Upgrades</b></p> <p>HP 1GB Flash Backed Cache 534562-B21</p> <p>HP 512MB Flash Backed Write Cache 534916-B21</p> <p>HP 256MB P-series Cache Upgrade 462968-B21</p> <p><b>NOTE:</b> Supported on HP Smart Array P212 Controller only.</p> <p>HP 512MB P-Series Battery Backed Write Cache Upgrade 462967-B21</p> <p><b>NOTE:</b> Supported on HP Smart Array P411 Controller only.</p> <p>HP 650 mAh P-Series Battery 462969-B21</p> <p><b>NOTE:</b> To enable BBWC on the 256MB cache.</p> <p><b>NOTE:</b> Supported on HP Smart Array P212 Controller, and HP Smart Array P411 only.</p> <p>HP Smart Array Advanced Pack including 1yr 24x7 Technical Support and Updates Single Server License 516471-B21</p> <p>HP Smart Array Hot Plug Advance Pack for B110i w/1y 24x7 Supp Physical 1 Svr LTU TC421A</p> <p><b>NOTE:</b> This part number can be used to purchase a single license or to order multiple licenses with a single activation key. Customers will receive a license entitlement certificate via e-mail. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Include one year of 24x7 HP Software Technical Support Services.</p>	

### Additional Options

#### SCSI HBA

HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter

412911-B21

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/13203\\_div/13203\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13203_div/13203_div.html)  
(Smart Array P212 Controller)

[http://h18000.www1.hp.com/products/quickspecs/13201\\_div/13201\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13201_div/13201_div.html)  
(Smart Array P410 Controller)

[http://h18000.www1.hp.com/products/quickspecs/13202\\_div/13202\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13202_div/13202_div.html)  
(Smart Array P411 Controller)

[http://h18000.www1.hp.com/products/quickspecs/13200\\_div/13200\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13200_div/13200_div.html)  
(Smart Array Advanced Pack)

[http://h18000.www1.hp.com/products/quickspecs/12566\\_div/12566\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html)  
(SC11Xe HBA)

#### HP Tape Backup

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

**NOTE:** Connection using the HP P212 SAS Smart Array Controller (462828-B21) recommended.

HP DAT 160 SAS Internal Tape Drive

Q1587B

**NOTE:** For installation into 1U SAS Rack-Mount Kit (AE459B) or 3U SAS Rack-Mount Kit (AG576B). No peripheral bay available for installation into the server.

HP DAT 320 SAS Internal Tape Drive

AJ830A

HP StoreEver LTO-2 Ultrium 448 SAS Internal Tape Drive

DW085B

**NOTE:** For installation into 1U SAS Rack-Mount Kit (AE459B) or 3U SAS Rack-Mount Kit (AG576B). No peripheral bay available for installation into the server.

HP StoreEver LTO-3 Ultrium 920 SAS Internal Tape Drive

EH847B

**NOTE:** For installation into 1U SAS Rack-Mount Kit (AE459B) or 3U SAS Rack-Mount Kit (AG576B). No peripheral bay available for installation into the server.

HP Ultrium 920 SAS Internal Tape Drive

EH847A

**NOTE:** For installation into 1U SAS Rack-Mount Kit (AE459B) or 3U SAS Rack-Mount Kit (AG576B). No peripheral bay available for installation into the server.

HP 1/8 G2 Ultrium 920 SAS Autoloader

AH558A

**NOTE:** Requires HP 1U Tape Autoloader Rack-Mount Kit (AH166A) for rack installation.

HP MSL8048 0-drive Tape Library

AU300A

HP MSL4048 0-Drive Tape Library

AK381A

HP MSL2024 1 LTO-5 Ultrium 3000 SAS Tape Library

BL537A

HP MSL2024 0-Drive Tape Library

AK379A

HP MSL2024 Ultrium 920 SAS Tape Library

AH559A

#### HP Disk Backup

**NOTE:** For the complete range of Storage D2D Backup Systems see: <http://www.hp.com/go/d2d>. For the complete range of Storage RDX drives and media see: <http://www.hp.com/go/rdx>. For hardware and software compatibility of HP Storage disk backup products see: <http://www.hp.com/storage/SPOCK>.

#### HP Storage D2D Backup Systems with Backup Data Deduplication

HP StoreOnce D2D2502i Backup System

EJ001C

**NOTE:** 1.5TB of usable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.

### Additional Options

HP StoreOnce D2D2504i Backup System <b>NOTE:</b> 3.0TB of usable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended. USB Removable Media RDX Disk Backup Systems <b>USB Removable Media RDX Disk Backup Systems</b>	EJ002C
HP RDX1000 Internal Removable Disk Backup System <b>NOTE:</b> For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 1 TB of disk capacity per data cartridge.	BV847A
HP RDX1000 USB3.0 Internal Disk Backup System	B7B67A
HP RDX500 USB3.0 Internal Disk Backup System	B7B64A
HP RDX320 USB3.0 Internal Disk Backup System	B7B62A
HP RDX320 Internal Removable Disk Backup System <b>NOTE:</b> For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 320GB of disk capacity per data cartridge.	AJ767A
HP RDX500 Internal Removable Disk Backup System <b>NOTE:</b> For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 500GB of disk capacity per data cartridge.	AJ934A

### HP Modular Smart Array Disk Enclosures

HP D2600 Disk Enclosure	AJ940A
HP D2700 Disk Enclosure	AJ941A
<b>NOTE:</b> Please see the QuickSpecs for additional options and configuration information at: <a href="http://h18000.www1.hp.com/products/quickspecs/13404_div/13404_div.html">http://h18000.www1.hp.com/products/quickspecs/13404_div/13404_div.html</a>	

### HP Uninterruptible Power Systems

#### HP Rack-mountable UPS

##### HP R1500 G3 Uninterruptible Power Supply (UPS)

HP R1.5kVA G3 1U NA Uninterruptible Power System	AF469A
HP R1.5kVA G3 1U JP/TW Uninterruptible Power System	AF470A
HP R1.5kVA G3 1U INTL Uninterruptible Power System	AF471A

**NOTE:** Please see QuickSpecs Technical Specifications and additional information:  
[http://h18000.www1.hp.com/products/quickspecs/14059\\_div/14059\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14059_div/14059_div.html)  
(Worldwide)

##### HP R/T3000 UPS

##### HP R/T3000 G2 Uninterruptible Power System (UPS)

HP R/T3000 G2 2U L530 Low Voltage NA/JP Uninterruptible Power System	AF466A
HP R/T3000 G2 2U L620 High Voltage NA/JP Uninterruptible Power System	AF467A
HP R/T3000 G2 2U Detachable Cord High Voltage INTL Uninterruptible Power System	AF468A

**NOTE:** Please see QuickSpecs Technical Specifications and additional information:  
[http://h18000.www1.hp.com/products/quickspecs/14058\\_div/14058\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14058_div/14058_div.html)  
(Worldwide)

##### HP Rack-Mountable R5000 UPS

HP R5KVA 3U L630 High Voltage NA/JP Uninterruptible Power System	AF460A
HP R5KVA 3U IEC309-32A High Voltage INTL Uninterruptible Power System	AF461A
HP R5KVA and R7KVA 3U Extended Runtime Module	AF464A

### Additional Options

**NOTE:** Please see QuickSpecs Technical Specifications and additional information: [http://h18000.www1.hp.com/products/quickspecs/14109\\_div/14109\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14109_div/14109_div.html) (Worldwide)

#### HP Rack-Mountable R7000 UPS

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

HP R7KVA 4U 50A High Voltage NA/JP Uninterruptible Power System AF462A

**NOTE:** Please see QuickSpecs Technical Specifications and additional information: [http://h18000.www1.hp.com/products/quickspecs/14110\\_div/14110\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14110_div/14110_div.html) (Worldwide)

**NOTE:** Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: [www.hp.com/products/powercords](http://www.hp.com/products/powercords).

#### HP Power Distribution Units

##### HP Monitored Power Distribution Unit: Full Rack Version

HP 8.6kVA 24A Single Input Three Phase NA/JP Monitored Power Distribution Unit AF504A

HP 8.3kVA 40A Single Input Single Phase NA/JP Monitored Power Distribution Unit AF506A

HP 11kVA 16A Single Input Three Phase INTL Monitored Power Distribution Unit AF508A

HP 7.3kVA 32A Single Input Single Phase INTL Monitored Power Distribution Unit AF510A

##### HP Monitored Power Distribution Unit: Half Rack Version

HP 4.9kVA 24A Single Input Single Phase NA/JP Monitored Power Distribution Unit AF914A

HP 7.3kVA 32A Single Input Single Phase INTL Monitored Power Distribution Unit AF915A

##### Modular Power Distribution Units 1U/0U (Up to 32 outlets)

**NOTE:** 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks).

HP 4.9kVA 24A High Voltage NA/JP Modular Power Distribution Unit 252663-D72

HP 8.3kVA 40A High Voltage NA/JP Modular Power Distribution Unit 252663-D73

HP 7.3kVA 32A High Voltage INTL Modular Power Distribution Unit 252663-B31

HP 3.6kVA 16A High Voltage INTL Modular Power Distribution Unit 252663-B24

**NOTE:** This PDU has a detachable input power cord and allows for adaptability to country specific power requirements.

**NOTE:** Please see the following Modular Power Distribution Unit (Zero-U/1U Modular PDUs) QuickSpecs for additional options including shorter jumper cables and country specific power cords:

[http://h18000.www1.hp.com/products/quickspecs/11041\\_div/11041\\_div.html](http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.html) (Worldwide)

**NOTE:** For additional information on HP Power Distribution Units including accessories please go to: [www.hp.com/go/pdu](http://www.hp.com/go/pdu).

**NOTE:** Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: [www.hp.com/products/powercords](http://www.hp.com/products/powercords).

#### HP Rack Options

##### HP USB Keyboard and Mouse

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

HP USB BFR with PVC Free AP-Intl Keyboard/Mouse Kit 672097-373

HP USB BFR with PVC Free Intl Keyboard/Mouse Kit 672097-B33

HP USB BFR with PVC Free PT Keyboard/Mouse Kit 672097-133

HP USB BFR with PVC Free TR Keyboard/Mouse Kit 672097-143



### Additional Options

HP USB BFR with PVC Free CZ Keyboard/Mouse Kit	672097-223
HP USB BFR with PVC Free FI Keyboard/Mouse Kit	672097-353
HP USB BFR with PVC Free SE Keyboard/Mouse Kit	672097-103
HP USB BFR with PVC Free CH Keyboard/Mouse Kit	672097-113
HP USB BFR with PVC Free KR Keyboard/Mouse Kit	672097-KD3
HP USB BFR with PVC Free US Keyboard/Mouse Kit	631341-B21
HP USB BFR with PVC Free UK Keyboard/Mouse Kit	631344-B21
HP USB BFR with PVC Free FR Keyboard/Mouse Kit	631346-B21
HP USB BFR with PVC Free ES Keyboard/Mouse Kit	631348-B21
HP USB BFR with PVC Free DE Keyboard/Mouse Kit	631358-B21
HP USB BFR with PVC Free JP Keyboard/Mouse Kit	631360-B21
HP USB BFR with PVC Free IT Keyboard/Mouse Kit	631362-B21
HP USB BFR with PVC Free CN Keyboard/Mouse Kit	631364-B21
HP USB BFR with PVC Free AE Keyboard/Mouse Kit	638212-B21
HP USB BFR with PVC Free RU Keyboard/Mouse Kit	638214-B21

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/13972\\_div/13972\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13972_div/13972_div.html)  
(Worldwide)

#### HP Serial Console Server Switches

HP Server Console 0x2x8 Port Analog Switch	AF616A
HP Server Console 0x2x16 Port Analog Switch	AF617A

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/11834\\_div/11834\\_div.html](http://h18000.www1.hp.com/products/quickspecs/11834_div/11834_div.html)  
(Worldwide)

#### HP Server Console Switch G2 with Virtual Media & CAC

HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software	AF618A
HP 0x2x32 KVM Server Console Switch G2 with Virtual Media CAC Software	AF619A

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/13475\\_div/13475\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13475_div/13475_div.html)  
(Worldwide)

#### HP IP Console Switch G2 with Virtual Media & CAC

HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software	AF620A
HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software	AF621A
HP 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software	AF622A

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/13474\\_div/13474\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13474_div/13474_div.html)  
(Worldwide)

### HP Care Pack Services

#### Hardware Services On-site Service

HP 3 year 4 hour 13x5 ProLiant DL120 Hardware Support	UJ252E
HP 3 year 4 hour 24x7 ProLiant DL120 Hardware Support	UJ253E

#### Hardware Services Next Business Day On-Site Service

HP 3 year Next business day ProLiant DL120 Hardware Support	UJ251E
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### Additional Options

#### **Installation Services**

HP 3 year 6 hour 24x7 Call to Repair ProLiant DL120 Hardware Support

UJ254E

HP Installation ProLiant DL120 Service

UJ261E

### Memory

#### HP ProLiant DL120 G7 Models

**NOTE:** Memory configurations listed do not apply to "Factory Integrated Models".

#### Standard Memory

SATA Models:

2GB, 4GB or 8GB of PC3-10600E DDR3 UDIMM running at 1333MHz with ECC capabilities memory installed.

SAS Models

4GB of PC3-10600R UDIMM running at 1333MHz

#### Standard Memory Plus Optional Memory

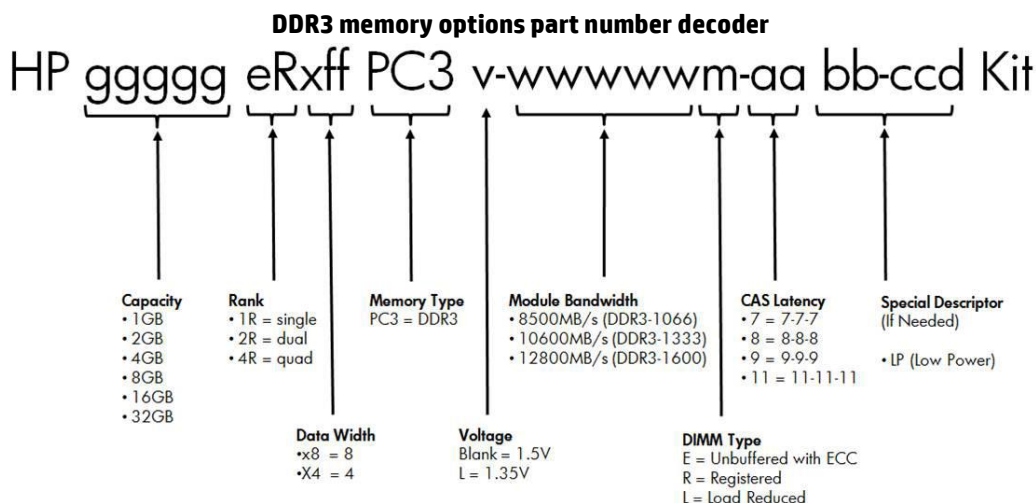
Up to 32 GB memory is available with the optional installation of 4 x 8GB PC3-10600E UDIMM ECC DDR3 SDRAM DIMM Memory kits, operating at 1333MHz when fully populated at 2 DIMMs per Channel in 4 slots.

**NOTE:** The below chart does not represent all possible memory configurations.

**NOTE:** For best performance, it is recommended that customer installs memory in identical pairs (Slots 1 and 3 are interleaving pair. Slots 2 and 4 are interleaving pair).

Some DIMM installation guidelines are summarized below:

- The HP ProLiant DL120 G7 Server has four memory slots
- There are two channels per server with two DIMM slot per channel
- Memory channel A consists of the two (2) DIMMs that are closest to the processor
- Memory channel B consists of the two (2) DIMMs that are furthest from the processor
- Different types of processors have different types of memory support.
- Support for single/dual-rank 1066/1333 MT/s ECC UDIMM (unbuffered DIMMS)
- The server supports up to 32GB (4 x8GB) for Unbuffered DIMMs
- No support for RDIMMs; Non-ECC UDIMMs
- 1.35 V LV-DIMM is supported, but will be performed at 1.5V
- Do not install DIMMs if the processor is not installed
- Populate DIMMs from heaviest load (double-rank) to lightest load (single-rank)
- Non-ECC DIMMs are not supported
- Always use HP qualified DIMM
- Farthest DIMM (either CHA or CHB) should always be populated first"



### Memory

The UDIMM installing sequence:

	<b>DIMM1C</b>	<b>DIMM2A</b>	<b>DIMM3D</b>	<b>DIMM4B</b>
1 DIMMs	Empty	DIMM	Empty	Empty
2 DIMMs	Empty	DIMM	Empty	DIMM
3 DIMMs	DIMM	DIMM	Empty	DIMM
4 DIMMs	DIMM	DIMM	DIMM	DIMM

#### Following are memory options available from HP:

##### HP Memory

##### Unbuffered with ECC DIMMs (UDIMM)

HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit 500670-B21

HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit 500672-B21

HP 8GB (1x8GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit 647909-B21

**NOTE:** All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: [www.hp.com/go/ddr3memory-configurator](http://www.hp.com/go/ddr3memory-configurator).

**NOTE:** Kits described as LP include Low Power DIMMs. For more information on ProLiant energy efficient features, see: [www.hp.com/go/proliant-energy-efficient](http://www.hp.com/go/proliant-energy-efficient)

### Storage

- 1- 4 Four SATA or SAS drive bays
- A Optical Drive Bay: Optional DVD-ROM, or DVD-RW drive



- 1-8 Eight SFF Hot-Plug SATA or SAS drive bays
- A Optical Drive Bay: Optional DVD-ROM, or DVD-RW drive



### Drive Support

	Quantity Supported	Position Supported	Controller
<b>Removable Media</b>			
9.5mm IDE DVD-ROM or DVD-RW Drive	Up to 1	A	HP Smart Array B110i SATA RAID Controller (RAID 0/1/1+0)

**NOTE:** The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

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

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

	Quantity Supported	Position Supported	Controller
1.2TB 6G SAS 10K 900GB 6G SAS 10K 600GB 6G SAS 10K 450GB 6G SAS 10K 300GB 6G SAS 10K 146GB 6G SAS 15K	Up to 8	1-8	HP Smart Array P410 Controller

#### SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives

### Storage

	Quantity Supported	Position Supported	Controller
600GB 6G SAS 15K	Up to 4	1-4	HP Smart Array P212 Controller
450GB 6G SAS 15K			HP Smart Array P410 Controller
300GB 6G SAS 15K			

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

	Quantity Supported	Position Supported	Controller
2TB 6G SAS 7.2K	Up to 4	1-4	HP Smart Array P212 Controller
1TB 6G SAS 7.2K			HP Smart Array P410 Controller

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

	Quantity Supported	Position Supported	Controller
1TB 6G SAS 7.2K	Up to 8	1-8	HP Smart Array P410 Controller
500GB 6G SAS 7.2K			

#### SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
1TB 3G SATA 7.2K	Up to 8	1-8	HP Smart Array P410 Controller
500GB 3G SATA 7.2K			

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

	Quantity Supported	Position Supported	Controller
4TB 3G SATA 7.2K	Up to 4	1-4	HP Smart Array B110i SATA RAID Controller (RAID 0/1/1+0)
2TB 3G SATA 7.2K			<b>NOTE:</b> Smart Array Hot Plug Advanced Pack for B110i needs to be purchased to enable Hot Plug
1TB 3G SATA 7.2K			HP Smart Array P212 Controller
500GB 3G SATA 7.2K			HP Smart Array P410 Controller

#### SATA Hot Plug LFF (3.5-inch) Entry (ETY) Drives

	Quantity Supported	Position Supported	Controller
250GB 3G SATA 7.2K	Up to 4	1-4	HP Smart Array B110i SATA RAID Controller (RAID 0/1/1+0)
			<b>NOTE:</b> Smart Array Hot Plug Advanced Pack for B110i needs to be purchased to enable Hot Plug
			HP Smart Array P212 Controller
			HP Smart Array P410 Controller

#### Maximum Storage Capacity - (SAS drives)

Internal	8.0TB (4 x 2TB SAS)
External	16.0TB (8 x 2TB SAS)
Total	24.0TB

#### Maximum Storage Capacity - (SATA Drives)

Internal	16.0TB (4 x 4TB SATA)
External	32.0TB (8 x 4TB SATA)
Total	48.0TB

### Storage

#### External Storage

	Quantity Supported	Position Supported	Controller
70 HP Modular Smart Array	Up to 8	External	HP Smart Array P212/256MB Controller HP Smart Array P212/256MB Controller HP Smart Array P411/256MB Controller

#### Tape and Disk Backup

**NOTE:** For the complete range of tape drives, autoloaders, libraries and media, including the internal fitting models, see: <http://www.hp.com/go/tape>. For the complete range of D2D Backup Systems see: <http://www.hp.com/go/d2d>. For the complete range of RDX drives and media see: <http://www.hp.com/go/rdx>. For hardware and software compatibility of HP disk and tape backup products see: <http://www.hp.com/storage/SPOCK>.

	Position	Recommended Controller	Part Number
<b>HP SCSI Tape Drives</b> LTO-1 Ultrium 232 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-3 Ultrium 960 LTO4 Ultrium 1760 LTO-4 Ultrium 1840 DAT 40 DAT 72 DAT 160 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter	412911-B21
<b>HP USB Tape Drives</b> DAT 40 DAT 72 DAT 160 DAT 320 1U USB Rack-Mount Kit	External	USB 2.0 Port	N/A
<b>HP SAS Tape Drives</b> DAT 160 DAT 320 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-4 Ultrium 1760 LTO-4 Ultrium 1840 LTO-5 Ultrium 3000 LTO-5 Ultrium 3280 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462828-B21
<b>HP SCSI Tape Autoloaders</b> DAT 72x10 Autoloader 1/8 G2 Autoloader	External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter	412911-B21
<b>HP SCSI Tape Libraries</b>	External	HP U320e SCSI Dual Channel Host Bus Adapter	AH627A

### Storage

MSL2024  
MSL4048  
MSL8096  
MSL6000

<b>HP SAS Tape Autoloaders and Libraries</b> 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096	External	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462828-B21
<b>HP Fibre Channel Tape Libraries</b> MSL2024 MSL4048 MSL8096 MSL6000	External	Please consult the EBS connectivity matrix at: <a href="http://www.hp.com/go/ebs">http://www.hp.com/go/ebs</a> for connectivity information and the supported Fibre Channel HBAs shown in this QuickSpecs.	
<b>HP USB RDX Removable Disk Backup System</b> RDX160 RDX320 RDX500 RDX750	External	USB 2.0 port	N/A
<b>HP D2D Backup Systems, iSCSI</b> D2D2500i D2D4000i	External	Embedded Network Controller. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	
<b>HP D2D Backup Systems, Fibre Channel</b> D2D4000fc	External	Direct server attach is not supported, requires connection via SAN fabric. See: <a href="http://www.hp.com/storage/SPOCK">http://www.hp.com/storage/SPOCK</a>	



### Power Specifications

<b>HP 365W Redundant Power Supply Kit w/ Backplane</b>	532092-B21						
Input Voltage Range (Vrms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	<b>100</b>	<b>120</b>	<b>200</b>	<b>208</b>	<b>220</b>	<b>230</b>	<b>240</b>
Maximum Rated Output Wattage	320	320	360	360	360	360	360
Nominal Input Current (A rms)	4.15	3.41	2.23	2.16	2.03	1.94	1.86
Max Rated Input Wattage Rating (Watts)	412	406	445	445	444	443	443
Max. Rated VA (Volt-Amp)	413	407	447	447	446	446	445
Efficiency (%) at Max. Rated Output Wattage	77.4	78.5	80.5	80.6	80.7	80.8	81.0
Power Factor	0.99						
Leakage Current (mA)	0.75	0.75	0.85	0.90	0.95	0.95	1.00
Maximum Inrush Current (A peak)	35						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	1354	1334	1462	1462	1459	1456	1456

### Technical Specifications

<b>System Unit</b>	<b>Dimensions</b> (H x W x D) (with bezel)	44.45 x 448.1 x 700.0 mm (1.75" x 17.64" x 27.56")		
	<b>Weight</b> (approximate)	Maximum (four hard drives, power supply, and processor installed)	26.23 lb	
		Minimum (one hard drive, power supply, and processor installed)	22.84 lb	
	<b>Input Requirements</b> (For 400W power supply)	Range Line Voltage	90 - 132 VAC, 180 - 264 VAC	
		Rated Input Current	6 A (at 100 VAC), 3 A (at 200 VAC)	
		Rated Input Frequency	47 to 63 Hz	
		Rated Input Power	<570W (at 100 VAC) 570W (at 200 VAC)	
	<b>BTU Rating</b>	Maximum	1943 BTU/hr (at 100 VAC) 1943 BTU/hr (at 200 VAC)	
	<b>Power Specifications</b>	To review typical system power ratings use the Power Advisor which is available via the online tool located at URL: <a href="http://www.hp.com/go/proliant-energy-efficient">www.hp.com/go/proliant-energy-efficient</a> or <a href="http://www.hp.com/go/hppoweradvisor">www.hp.com/go/hppoweradvisor</a>		
	<b>Power Supply Output</b> (For 400W power supply)	Rated Steady-State Power	400 W (at 100 VAC), 400 W (at 200 VAC)	
Maximum Peak Power		430 W (at 100 VAC), 430 W (at 200 VAC)		
<b>System Inlet Temperature</b>	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 1000 ft) above sea level to a maximum of 3050 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 65°C (-22° to 149°F). Maximum rate of change is 20°C/hr (36°F/hr).		
<b>Relative Humidity</b> (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.		
<b>Altitude</b>	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).		
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).		

### Technical Specifications

		ft/min).
<b>Acoustic Noise</b>	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).	
	Idle	
	LWAd	5.9 B
	LpAm	42.3 dBA
	Operating	
	LWAd	5.9 B
	LpAm	43.6 dBA
<b>Emissions Classification (EMC)</b>	<b>FCC Rating</b>	Class A
	<b>Normative Standards</b>	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1

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

### Integrated Lights-Out Standard (iLO 3) integrated on system board

<b>Architecture</b>	PCI Express based health and remote management ASIC
<b>Processor</b>	PCI Express RISC processor core running at 250MHz
<b>Upgradeability</b>	Option firmware upgradeable via Flash ROM
<b>Video Support</b>	1600 x 1200 DVR max resolution
<b>Interfaces</b>	One Ethernet Sideband connection (10/100/1000 Mb/s) One Ethernet network connection (10/100Mb/s)
<b>Memory</b>	128-MB SDRAM with ECC
<b>Operating System Support</b>	Microsoft Windows 2008 R2 Microsoft Windows 2008 (32 bit and 64 bit) Microsoft Windows Server 2008 Standard Edition (32bit and 64bit) Microsoft Windows Server 2008 Enterprise Edition (32bit and 64bit) Red Hat Linux 5.5 (32 bit and 64 bit) Red Hat Linux 6.0 (32 bit and 64 bit) SUSE LINUX Enterprise Server 11 (32bit and 64bit) SUSE LINUX Enterprise Server 10 (32bit and 64bit) VMware ESX 4.0 VMware ESX 4.1 Microsoft Windows 7 Microsoft Windows XP Professional Edition Microsoft Windows Vista Business and Ultimate Editions
<b>Client System Support</b>	Red Hat Enterprise Desktop 5.00 SUSE Linux Enterprise Desktop 11 SUSE Linux Enterprise Desktop 10
<b>Client Browser Support</b>	Microsoft Internet Explorer 8 Microsoft Internet Explorer 7 Microsoft Internet Explorer 6 Firefox 3.6 (on supported Windows and Linux systems) Firefox 3.5 (on supported Windows and Linux systems) Firefox 3.0 (on supported Windows and Linux systems)
<b>Command Line Support</b>	Secure Shell and serial port access

### Technical Specifications

<b>Security</b>	Secure Socket Layer Secure Shell version 2 (Password and certificate) Advanced Encryption Standard (AES) and Triple Data Encryption AES encryption of video RC4 encryption of video
<b>Directory Support Services</b>	Standard (3DES) on browser, CLP and XML scripting interface Active Directory v1.0 (Windows 2008)
<b>Driver Support</b>	HP ProLiant iLO 3 Management Controller Driver Package iLO Management Channel Interface Driver
<b>Management protocols supported</b>	SNMPv1, IPMI 2.0 (System and LAN interface), DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP), HP RIBCL XML

<b>HP Smart Array B110i SATA RAID Controller (RAID 0/1/1+0)</b>	<b>Simultaneous drive transfer channels</b>	4 channels
	<b>Transfer rate synchronous (maximum theoretical)</b>	150 MB/s per channel; 300 MB/s in RAID 0 pair
	<b>Data transfer method</b>	Intel® 82801IR Integrated Serial ATA Host Controller (non-RAID mode) Intel® 82801IR Integrated Serial ATA Host Controller (RAID Mode)
	<b>Drive support</b>	Serial ATA
	<b>Data transfer modes</b>	Legacy Mode Combined Mode
	<b>Protocol</b>	Serial ATA
	<b>Feature</b>	NCQ (Native Command Queuing); AHCI (Advanced Host Controller Interface)
	<b>RAID levels supported</b>	0, 1
	<b>RAID Features</b>	Supports multiple logical volumes Setup through ROM based Array Configuration Utility Installation scripting support <b>NOTE:</b> This controller does not support Hot Plug functions or LED functions.
	<b>RAID OS Support</b>	Microsoft Windows Server 2008. Linux (Red Hat, SuSE, UnitedLinux)

<b>HP NC112i 1-port Ethernet Server Adapter</b>	<b>Network Interface</b>	10Base-T/ 100Base-TX/ 1000Base-TX
	<b>Ports</b>	Single Port  802.3, 802.3u, 802.3x, 802.3ab, 802.3ad, 802.1p, 802.1Q PCIe Rev. 2.0 (2.5 GHz) x1 FCC (U.S. only) Class B DOC (Canada) Class B CE EN 55024, EN55022 Class B VCCI Class II UL 1950 CSA 950 EN 60950 CE ACPI 1.0 MicroSoft WHQL (Windows Hardware Quality Labs)
	<b>Data Transfer Method</b>	Singlelane (x1)

### Technical Specifications

<b>Controller</b>	Intel 82574L	
<b>Network Transfer Rate</b>	10Base-T (Half-Duplex)	10 Mb/s
	10Base-T (Full-Duplex)	20 Mb/s
	100Base-TX (Half-Duplex)	100 Mb/s
	100Base-TX (Full-Duplex)	200 Mb/s
	1000Base-TX (Half and Full-Duplex)	2000Mb/s
<b>Connector</b>	RJ-45 connector	
<b>Cable Support</b>	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
	10/100/1000Base-TX	Category 5 UTP; up to 328 ft (100 m)

**HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Entry 1yr Warranty Hard Drive**

**571230-B21**

<b>Capacity</b>	250,059MB	
<b>Height</b>	1.04 in (26.4 mm)	
<b>Width</b>	4.36 in (110.7 mm)	
<b>Depth</b>	7.25 in (184.2 mm)	
<b>Interface</b>	Serial ATA	
<b>Transfer Rate (Maximum)</b>	3Gb/s	
<b>Native Command Queuing</b>	Supported	
<b>Seek Time</b> (typical reads, including settling)	Single Track	2.0 ms
	Average	<11 ms
	Full-Stroke	21.0 ms
<b>Physical Configuration</b>	Rotational Speed	7,200 rpm
	Bytes/Sector	512
	Logical Blocks	488,397,168
<b>Operating Temperature</b> (system inlet air temperature)	50° to 95° F (10° to 35° C)	

**Environment-friendly Products and Approach**

**End-of-life Management and Recycling**

Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: <http://www.hp.com/go/green>. To recycle your product, please go to: <http://www.hp.com/go/green> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: <http://www.hp.com/go/green>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

### Summary of Changes

Date	Version History	Action	Description of Change:
23-Jan-2015	From Version 21 to 22	Changed	DIMM support changed in Memory section: No support for RDIMMs; Non-ECC UDIMMs 1.35 V LV-DIMM is supported, but will be performed at 1.5V
25-Mar-2013	From Version 20 to 21	Added	Added a NOTE to the Power Supplies section in both the Configuration Information and Core Options sections.
25-Feb-2013	From Version 19 to 20	Changed	Configuration Information - Factory Integrated Models: Removed products 582765-B21 and TC203A from Step 3 HP Insight Software.
		Added	Optional Features: Added Storage Software  Core Options: Added 693648-B21 and 694374-B21 to HP Hard Drives  Storage: Added 1.2TB 6G SAS 10K to SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives, 4TB 3G SATA 7.2K to SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives
		Changed	Updated What's New with Support for HP 1.2TB 6G SAS 10K 2.5in DP ENT HDD and Support for HP 4TB 3G SATA 7.2k 3.5in MDL HDD  Standard Features: updated Maximum Internal Storage for Sata  Optional Features: Completely updated HP Insight Control in HP Insight Control Management Software  Configuration Information - Factory Intergrated Models: Updated p/n 534516-B21  Additional Options: Completely updated HP Insight Software-HP Insight Control, Updated product descriptions in HP Tape Backup for AJ830A, DW085B and EH847B, updated product descriptions in HP Disk Backup for EJ001C, EJ002C, B7B67A, B7B64A and B7B62A and Update product descriptions in HP Rack Options  Storage: Updated Maximum Storage Capacity - (SATA Drives) amounts
24-Sep-2012	From Version 18 to 19	Changed	Changes made in Optional Features section.
24-Aug-2012	From Version 17 to 18	Changed	Changes made throughout the QuickSpec.
17-May-2012	From Version 16 to 17	Changed	Changes made in the Configuration Information, Additional Options and Storage sections.
06-Apr-2012	From Version 15 to 16	Changed	HP 400W Factory Integrated Power Supply Kit was removed from HP Power Supplies.
26-Mar-2012	From Version 14 to 15	Changed	Part numbers were revised in High Performance Clusters and HP Disk Backup  HP 160GB 3G SATA 7.2K rpm LFF Non-hot Plug Entry Hard Drive was removed  HP Backup and Recovery Software was removed

### Summary of Changes

			HP Rack-Mountable R5500 UPS was removed from HP Uninterruptible Power Systems
14-Oct-2011	From Version 13 to 14	Changed	Operating Systems and Virtualization Software, Graphics, HP Insight management software, Optimized, Standard and Basic Care Packages, Hard Drives and throughout Additional Options were revised  DDR3 memory options part number decoder image was added to Memory
04-Oct-2011	From Version 12 to 13	Changed	Changes made to the North America and Canada versions only.
30-Sep-2011	From Version 11 to 12	Changed	Operating System Support and Directory Support Services were revised in Integrated Lights-Out Standard (iLO 3) integrated on system board and RAID OS Support was revised in HP Smart Array B110i SATA RAID Controller  Note was added to Warranty throughout Models
21-Sep-2011	From Version 10 to 11	Changed	Changes made to the North America and Canada versions only.
05-Sep-2011	From Version 9 to 10	Changed	Processors were revised.
01-Sep-2011	From Version 8 to 9	Changed	Processors were revised.
30-Aug-2011	From Version 7 to 8	Changed	HP Networking, HP Backup and Recovery Software, HP Rack Options and HP Care Pack Services product descriptions were revised  Additional Dual-Core Processors were added  HP Insight Control for Linux w/1yr 24x7 Supp ML/DL/SL Bundle Electronic was added to HP Insight Software  Additional Tape Drives were added  HP Rack-Mountable R5000 and R7000 UPS were added to HP Uninterruptible Power Systems  HP 160GB 3G SATA 7.2K rpm SFF Midline Drive was removed from Hard Drives
29-Jul-2011	From Version 6 to 7	Changed	Hard Drive descriptions were revised.
28-Jun-2011	From Version 5 to 6	Changed	Changes were made in North America and Canada only,
20-Jun-2011	From Version 3 to 5	Added	Intel Pentium G850, G840 and G620 Processors were added to Processors  HP 900GB 6G SAS 10K rpm SFF Enterprise Drive and HP 1TB 6G SAS 7.2K rpm SFF Hot Plug Midline Drive were added to Hard Drives  HP R1500 G3 Uninterruptible Power Supply (UPS) and HP R/T3000 G2 Uninterruptible Power Supply (UPS) were added to HP Uninterruptible Power Systems
27-May-2011	From Version 2 to 3	Changed	Changes were made in North America and Canada only,
09-May-2011	From Version 1 to 2	Changed	Processor, Models, HP Insight software and HP Uninterruptible Power Systems product descriptions were revised  What's New was added to the Overview

### Summary of Changes

			HP 1TB 3G SATA 7.2K rpm SFF Dual Port Midline Drive was added to Hard Drives  HP Smart Array P411/1G FBWC 2-ports Ext PCIe x8 SAS Controller was added to HP Storage Controllers
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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less.