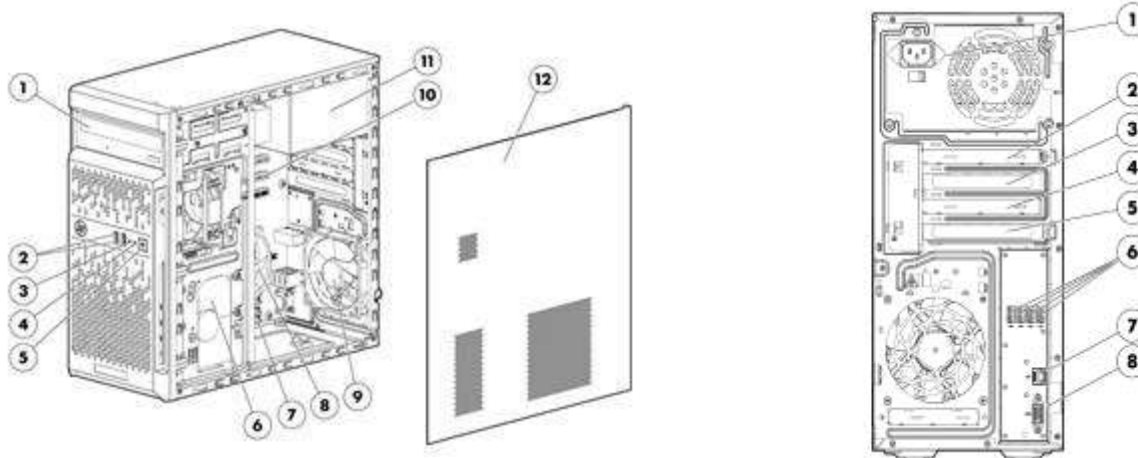


### Overview

#### HP ProLiant ML10 Server

The HP ProLiant ML10 Server is a single-socket 4U tower server, delivering excellent value in a large form factor that small businesses require to run a small network environment. It is outstanding for businesses looking for improved performance, number of available slots, and flexible storage options while staying within a tight budget.



#### Front View:

1. Optical Media Drive
2. USB Connectors
3. NIC Status LED
4. Drive Status LED
5. System Power Button/LED
6. LFF Drive
7. DIMM
8. CPU Fan
9. System Fan
10. PCIe2x16 (8,4,1) Slot
11. Power Supply
12. Access Panel

#### Rear View:

1. Power Supply Connector
2. Slot 1 PCIe
3. Slot 2 PCIe
4. Slot 3 PCIe
5. Slot 4 PCIe
6. USB Connector
7. NIC Connector
8. Video Connector

### What's New

- Supports up to 4 large form factor SATA drives
- Allows businesses to increase local storage as needed
- Provides low cost, reliable data storage solution

### Standard Features

Processor	Dual-Core Processor Intel® Pentium® G2130 (3.20GHz/2-core/3MB/55W, 1600) Processor				
Cache Memory	Integrated 1x3MB Level3 Intel® Smart Cache				
Chipset	Intel® C204 Series Chipset <b>NOTE:</b> For more information regarding Intel® chipsets, please see the following URL: <a href="http://www.intel.com/products/server/chipsets/">http://www.intel.com/products/server/chipsets/</a> .				
Upgradeability	Up to 4 DIMM slots available for higher memory capacity Up to 4 LFF Hard Drives 4 PCIe 2.0 I/O slots for additional communications and storage expansion Optical Drive Bay				
On System Management Chipset	HP iLO (Firmware: HP iLO3) <b>NOTE:</b> For more information, visit: <a href="http://www.hp.com/go/ilo">http://www.hp.com/go/ilo</a>				
Memory Protection	ECC				
Memory	Type	PC3-12800E-11 unbuffered DDR3 ECC up to 1600MT/s			
	DIMM Slots	Total 4 DIMM slots			
	Standard	2GB GB (1x2GB)			
	Maximum	32GB			
Network Controller	HP NC112i 1-Port Ethernet Server Adapter (X1)				
Expansion Slots	Expansion Slot #	Technology	Bus Width***	Connector Width	Form Factor
	1	PCIe G2	x16	x16	Full height & Half-length slot
	2	PCIe G2	X4	X8	Full height & Half-length slot
	3	PCIe G2	X4	X8	Full height & Half-length slot
	4	PCIe G2	X1	X4	Full height & Half-length slot
<b>** Slots are enumerated differently based on OS. MS OS's enumerate from lowest to highest Device ID by bus (starting with the lowest bus).</b>					
<b>*** Indicates the number of physical electrical lanes running to a PCI-e connector.</b>					
HP Server ROM	HP ROM (Read Only Memory) is now digitally signed using HP's Corporate Signing Service. This signature is verified before the flash process starts, reducing accidental programming and preventing malicious efforts to corrupt system ROM.  HP 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.				

### Standard Features

HP 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.

HP's 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 HP ROM-Based Setup Utility (RBSU)).

**NOTE:** For further information, please refer to HP's RBSU (ROM based setup utility) user guide: [www.hp.com/support/rbsu](http://www.hp.com/support/rbsu).

### Storage Controller

HP Embedded Smart Array B110i SATA RAID Controller (RAID 0/1/10)

**NOTE:** Supports up to two (2) 3.0Gb/s SATA hard disk drives only

**NOTE:** For set up instructions, please refer to the HP ProLiant ML100 series server user guide at: <http://bizsupport1.austin.hp.com/bc/docs/support/SupportManual/c01708878/c01708878.pdf>

**NOTE:** For general information about HP Smart Array B110i SATA RAID Controller, please go to: <http://h18004.www1.hp.com/products/servers/proliantstorage/arraycontrollers/smartarrayb110i/index.html>

### Internal Storage Devices

Optical Drive	HP Half-Height SATA DVD (Optional)
Standard Hard Drive	(1) Non hot-plug LFF SATA
Hard Drive Bay Configurations (depending on option)	
2 HDDs (no optical)	Convert optical bay to 2nd LFF HDD bay <b>NOTE:</b> Requires purchase of HP ML10 Hard Drive Enablement Kit (#730641-B21)
3 HDDs (with optical)	Replace internal single HDD carrier with a 3 x LFF carrier (leaving optical bay available) <b>NOTE:</b> Requires purchase of HP ML10 4 LFF Hard Drive Enablement Kit (#742971-B21) <b>NOTE:</b> The ML10 4LFF Hard Drive Enablement Kit: includes one carrier to convert the Optical Drive bay to one LFF Drive and includes a second carrier to support 3 internal LFF HDDs. The 3 x LFF carrier replaces the standard 1 x LFF carrier. For 3HDD Configurations, the carrier to convert the Optical Drive bay to one LFF Drive is left unused.
4 HDDs (no optical)	Replace internal single HDD carrier with a 3 x LFF carrier and convert optical bay to support 1 x LFF HDD <b>NOTE:</b> Requires purchase of HP ML10 4 LFF Hard Drive Enablement Kit (#742971-B21) <b>NOTE:</b> The ML10 4LFF Hard Drive Enablement Kit: includes one carrier to convert the Optical Drive bay to one LFF Drive and includes a second carrier to support 3 internal LFF HDDs. The 3 x LFF carrier replaces the standard 1 x LFF carrier. Both carriers need to be installed.

### Maximum Internal Storage

Non-Hot Plug LFF SATA

8TB

4 x 2TB

**NOTE:** Requires purchase of optional HP ML10 4 LFF Hard Drive Enablement Kit (#742971-B21)

### Standard Features

<b>Interfaces</b>	Video Port	1
	USB 2.0 Ports	7 total (4 rear, 2 front panel, 1 internal)
	Network RJ-45 (Ethernet)	1 (shared for HP Integrated Lights-Out)
	Remote Management	iLO3 remote management support
<b>Industry Standard Compliance</b>	ACPI V3.0b Compliant	
	PCI Express Rev 2.0	
	PXE Support	
	WOL Support	
	IPMI 2.0 compliance	
	DCMI 1.0	
	Microsoft® Logo certifications	
	Red Hat Enterprise Linux Logo certifications	
	SUSE Linux Enterprise Server Logo certifications	
	USB 2.0	
<b>Server Power Cords</b>	The ML10 server ships standard with a 6 country specific NEMA power cord. If customers require a local power cord, they can check the power cord matrix for the appropriate country specific sku. Please see the following power cord matrix: <a href="http://www.hp.com/go/powercordmatrix">http://www.hp.com/go/powercordmatrix</a>	
<b>Power Supply</b>	300 Watts 80+ Bronze Non-Hot Plug, Non redundant Power Supply	
<b>System Fans</b>	One Non-redundant system fan ships standard	
	One Non-redundant CPU heatsink fan ships standard	
<b>Operating Systems and Virtualization Software Support for ProLiant Servers</b>	<a href="#">Microsoft Windows Server</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, please visit our Support Matrix at: <a href="http://www.hp.com/go/ossupport">http://www.hp.com/go/ossupport</a> and our driver download page: <a href="#">HP ProLiant ML10</a>	
<b>Form Factor</b>	Micro ATX Tower (4U).	
<b>HP Insight Management</b>	HP Integrated Lights-Out 3 (3)	HP Integrated Lights-Out 3 (iLO) 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>
<b>Security</b>	Power-on password	
	Setup password	
	Secure Sockets Layer (SSL)	
	Secure Shell (SSH)	
	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	

### Standard Features

#### Warranty

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners. Hardware diagnostic support and repair are 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 one year warranty; refer to the specific hard drive QuickSpecs for details.

**NOTE:** Server Warranty includes 1 year parts, 1 year labor, 1-year on-site support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at:  
<http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>

### Optional Features

#### HP Insight 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" (#C6N31A).

### Service and Support

#### Service and Support

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

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

##### **Protect your business beyond warranty with HP Care Pack Services**

HP Care Pack Services enable you to order the right service level, length of coverage and response time as you purchase your new server, giving you full entitlement for the term you select.

#### Optimized Care

##### **Supports maintaining servers at optimum performance availability**

##### **HP Proactive Care with 24x7 coverage, three year Care Pack Service**

HP Proactive Care helps prevent problems and stabilize IT by utilizing secure, real-time, predictive analytics and proactive consultations when your products are connected to HP. This Care Pack Service combines three years' proactive reporting and advice with our 24x7 coverage and enhanced escalation management, four hour hardware response time and two hour call back for software questions on leading industry standard software running on your HP ProLiant server.

<http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

#### Standard Care Package

##### **Supports maintaining high level of server availability**

##### **Foundation Care 24x7, three-year Care Pack Service**

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

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

#### Basic Care Package

##### **Delivers minimum recommended support service level**

##### **Foundation Care NBD, three-year Care Pack Service**

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

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

#### Related Services

##### **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>

##### **Factory Express 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. 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>.

### Service and Support

#### Data Privacy Services

Protect your data through better media management. HP 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.

[www.hp.com/services/dataprivacy](http://www.hp.com/services/dataprivacy)

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

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#### Get connected to HP to improve your support experience

Prevent problems with innovative, automated monitoring tools and proactive services. Combining Proactive Care Services with our remote support technology such as Insight Online 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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#### HP Support Center

Personalized online support portal with access to information, tools and experts to support HP business products. Submit support cases online, chat with HP experts, access support resources or collaborate with peers. Learn more <http://www.hp.com/go/hpsc>

HP's 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.

HP Insight Remote Support and HP Support Center are available at no additional cost with a HP warranty, HP Care Pack or HP contractual support agreement.

**\*\* HP Support Center Mobile App is subject to local availability**

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#### Parts and Materials

HP will provide HP-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product QuickSpecs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HP due to malfunction.

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#### For more information

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



### Pre-configured Models

#### SATA Model

**NOTE:** Pre-configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.

**NOTE:** HP does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.

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

**NOTE:** For general information about HP Smart Array B110i SATA RAID Controller, please visit:

<http://h18004.www1.hp.com/products/servers/proliantstorage/arraycontrollers/smartarrayb110i/index.html>

#### Entry Model

<b>HP ProLiant ML10 G2130 1P 2GB-U B110i 300W PS Entry Server 730651-xx1</b>	<b>Processor</b>	(1) Intel® Pentium® Processor G2130 (3.20GHz/2-core/3MB/55W, 1600) Processor
	<b>Cache Memory</b>	3MB Intel® Smart Cache
	<b>Memory</b>	2GB (1x2GB) PC3-12800E (DDR3-1600) Unbuffered DIMM 32GB Maximum memory capacity <b>NOTE:</b> Total 4 DIMM slots.
	<b>Network Controller</b>	HP NC112i 1-Port Ethernet Server Adapter (x1)
	<b>Storage Controller</b>	HP Embedded Smart Array B110i SATA RAID Controller
	<b>Hard Drive</b>	None ships standard (Single LFF carrier included)
	<b>Optical Drive</b>	HP Half-Height SATA DVD ROM JackBlack Optical Drive (Optional) HP Half-Height SATA DVD RW JackBlack Optical Drive (Optional)
	<b>Power Supply</b>	300 Watts 80+ Bronze Non-Hot Plug, Non redundant Power Supply
	<b>Fans</b>	One (1) - Non-redundant system fan ships standard One (1) - Non-redundant CPU heatsink fan ships standard
	<b>Accessories</b>	Keyboard/mouse optional
	<b>Management</b>	HP Integrated Lights-Out Standard (iLO 3)
	<b>Form Factor</b>	Micro ATX Tower (4U)
	<b>Warranty</b>	Server Warranty includes 1 year parts, 1 year labor, 1-year on-site support with next business day response.

**NOTE:** Server model PN (757643-425) available in Europe only.

<b>HP ProLiant ML10 Xeon E3-1220 v2 1P 4GB-U Server 757643-425</b>	<b>Processor</b>	(1) Intel® Xeon® Processor E3-1220 v2 (3.10GHz/4-core/8MB/69W) Processor
	<b>Cache Memory</b>	3MB Intel® Smart Cache
	<b>Memory</b>	4GB (1x4GB) PC3-12800E (DDR3-1600) Unbuffered DIMM 32GB Maximum memory capacity <b>NOTE:</b> Total 4 DIMM slots.
	<b>Network Controller</b>	HP NC112i 1-Port Ethernet Server Adapter (x1)
	<b>Storage Controller</b>	HP Embedded Smart Array B110i SATA RAID Controller
	<b>Hard Drive</b>	1TB x 2 <b>NOTE:</b> HP ML10-4 LFF Hard Drive Enablement Kit (742971-B21) is embedded
	<b>Optical Drive</b>	HP Half-Height SATA DVD ROM JackBlack Optical Drive
	<b>Power Supply</b>	300 Watts 80+ Bronze Non-Hot Plug, Non redundant Power Supply
	<b>Fans</b>	One (1) - Non-redundant system fan ships standard One (1) - Non-redundant CPU heatsink fan ships standard
	<b>Accessories</b>	Keyboard/mouse optional
	<b>Management</b>	HP Integrated Lights-Out Standard (iLO 3)

### Pre-configured Models

<b>Form Factor</b>	Micro ATX Tower (4U)
<b>Warranty</b>	Server Warranty includes 1 year parts, 1 year labor, 1-year on-site support with next business day response.

**NOTE:** Server model PN (757643-295) available in Japan only.

**NOTE:** Server model PN (757643-375) available in Asia Pacific only.

**NOTE:** Server model PN (757643-AA5) available in China only.

<b>HP ProLiant ML10 Xeon E3-1220 v2 1P 4GB-U Server</b> 757643-295 757643-375 757643-AA5	<b>Processor</b>	(1) Intel® Xeon® Processor E3-1220 v2 (3.10GHz/4-core/8MB/69W) Processor
	<b>Cache Memory</b>	3MB Intel® Smart Cache
	<b>Memory</b>	4GB (1x4GB) PC3-12800E (DDR3-1600) Unbuffered DIMM 32GB Maximum memory capacity <b>NOTE:</b> Total 4 DIMM slots.
	<b>Network Controller</b>	HP NC112i 1-Port Ethernet Server Adapter (x1)
	<b>Storage Controller</b>	HP Embedded Smart Array B110i SATA RAID Controller
	<b>Hard Drive</b>	1TB <b>NOTE:</b> HP ML10-4 LFF Hard Drive Enablement Kit (742971-B21) is embedded
	<b>Optical Drive</b>	HP Half-Height SATA DVD ROM JackBlack Optical Drive
	<b>Power Supply</b>	300 Watts 80+ Bronze Non-Hot Plug, Non redundant Power Supply
	<b>Fans</b>	One (1) - Non-redundant system fan ships standard One (1) - Non-redundant CPU heatsink fan ships standard
	<b>Accessories</b>	Keyboard/mouse optional
	<b>Management</b>	HP Integrated Lights-Out Standard (iLO 3)
	<b>Form Factor</b>	Micro ATX Tower (4U)
	<b>Warranty</b>	Server Warranty includes 3 year parts, 3 year labor, 3-year on-site support with next business day response.

<b>Country Code Key</b>	xx= 00	US
	xx=42	Europe

### 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 ML10 Hard Drive Enablement Kit	730641-B21
	<b>NOTE:</b> The ML10 HDD enablement Kit converts the Optical Drive bay to one LFF HDD Carrier	
	HP ML10 4 LFF Hard Drive Enablement Kit	742971-B21
	<b>NOTE:</b> The ML10-4LFF Hard Drive Enablement Kit: includes one carrier to convert the Optical Drive bay to one LFF Drive and includes a second carrier to support 3 internal LFF HDDs. The 3 x LFF carrier replaces the standard 1 x LFF carrier.	

<b>HP Memory</b>	<b>Unbuffered with ECC DIMMs (UDIMMs)</b>	
	HP 2GB (1x2GB) Single Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669320-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669322-B21
	HP 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669324-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> Depending on the memory configuration and processor model, 1600MHz memory may operate at a lower speed. Please see the "Memory" section later in this document and the Online Memory Configuration Tool for details at <a href="http://www.hp.com/go/ddr3memory-configurator">www.hp.com/go/ddr3memory-configurator</a> . <b>NOTE:</b> For additional memory rules and guidelines, see the "Memory" section later in this document. <b>NOTE:</b> 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 Half-Height SATA DVD ROM JackBlack Optical Drive	624189-B21
	HP Half-Height SATA DVD RW JackBlack Optical Drive	624192-B21

<b>HP Hard Drives</b>	<b>NOTE:</b> The components of a storage subsystem (e.g. the drive, the HBA/controller, and firmware) 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>SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives</b>	
	HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	507774-B21
	HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	507772-B21
	HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	458941-B21

**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)

<b>HP ML10 HDD enablement Kit</b>	<b>Note:</b> The ML10 HDD enablement Kit convert Optical Drive to one LFF Drive Carrier x 1	730641-B21
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Core Options

SATA Cable x1  
Mini SAS Cable x1

HP Networking	<b>Gigabit Ethernet Adapters</b>	
	HP NC112T PCI Express Gigabit Server Adapter	503746-B21
	HP NC365T 4-port Ethernet Server Adapter	593722-B21
	<b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional information: <a href="http://www.hp.com/go/ProLiantNICs">www.hp.com/go/ProLiantNICs</a>	

### Additional Options

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

<b>HP Insight Software</b>	<b>HP Insight Control</b>	
	HP Insight Control including 1yr 24x7 Technical Support and Updates Electronic License	C6N28AAE
	HP Insight Control Server Provisioning Media Kit	BD883A
	HP Insight Management Media Kit	C6N31A
	<p><b>NOTE:</b> Insight Software DVD media without licenses. Contains HP Systems Insight Manager, HP Insight Control, HP Insight Dynamics, HP Insight Control for Microsoft System Center, and Virtual Connect Enterprise Manager software. Uses an integrated installer to perform quick and accurate software installation and updates.</p> <p><b>NOTE:</b> Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key.</p> <p><b>NOTE:</b> 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.</p> <p><b>NOTE:</b> Licenses ship without media. The HP Insight Control Media Kit can be ordered separately, or can be downloaded at: <a href="http://www.hp.com/go/insightupdates">http://www.hp.com/go/insightupdates</a></p> <p><b>NOTE:</b> For additional license options please see the QuickSpecs at: <a href="http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html">http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html</a>.</p> <p><b>NOTE:</b> Licenses ship without media. The HP Insight Management Media Kit can be ordered separately, or can be downloaded at: <a href="http://www.hp.com/go/insightupdates">http://www.hp.com/go/insightupdates</a>.</p> <p><b>NOTE:</b> 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 HP Software Technical Support Service.</p> <p><b>NOTE:</b> For additional license kits please see the Insight Control QuickSpecs at: <a href="http://h18004.www1.hp.com/products/quickspecs/12631_div/12631_div.html">http://h18004.www1.hp.com/products/quickspecs/12631_div/12631_div.html</a>.</p>	
	<b>HP Integrated Lights-Out (iLO)</b>	
	<b>HP Integrated Lights-Out (iLO) Advanced for ProLiant</b>	
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Electronic License	TA850AAE

<b>HP Uninterruptible Power Systems</b>	<b>HP Tower - UPS</b>	
	<b>HP T750 G2 UPS Models</b>	
	HP T750 G2 750VA INTL Tower Uninterruptible Power System	AF447A
	<p><b>NOTE:</b> For additional information please go to: <a href="http://www.hp.com/go/rackandpower">http://www.hp.com/go/rackandpower</a> (Worldwide)</p> <p><b>NOTE:</b> Please see QuickSpecs for Technical Specifications and additional information: <a href="http://h18004.www1.hp.com/products/quickspecs/13160_div/13160_div.html">http://h18004.www1.hp.com/products/quickspecs/13160_div/13160_div.html</a></p>	

<b>HP Remote Monitoring Power Distribution Units (mPDU)</b>	<b>HP Remote Monitored Power Distribution Unit: Full Height Version</b>	
	HP 17.3kVA 208 Volt IEC309 60A 3-Phase Watertight Input (12xC13/12xC19) NA/JP Monitored PDU	G9Z07A
	HP 22kVA 400 Volt IEC309 32A 3-Phase Watertight Input (12xC13/12xC19) INTL Monitored PDU	G9Z08A
	<p><b>NOTE:</b> Please see the QuickSpecs for additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/14669_div/14669_div.html">http://h18000.www1.hp.com/products/quickspecs/14669_div/14669_div.html</a></p>	

### Additional Options

(Worldwide)

#### HP Rack Options

#### HP USB Keyboard and Mouse

HP USB BFR with PVC Free US Keyboard/Mouse Kit	631341-B21
HP USB BFR with PVC Free UK Keyboard/Mouse Kit	631344-B21
HP USB BFR with PVC Free FR Keyboard/Mouse Kit	631346-B21
HP USB BFR with PVC Free ES Keyboard/Mouse Kit	631348-B21
HP USB BFR with PVC Free DE Keyboard/Mouse Kit	631358-B21
HP USB BFR with PVC Free JP Keyboard/Mouse Kit	631360-B21
HP USB BFR with PVC Free IT Keyboard/Mouse Kit	631362-B21
HP USB BFR with PVC Free CN Keyboard/Mouse Kit	631364-B21
HP USB BFR with PVC Free AE Keyboard/Mouse Kit	638212-B21
HP USB BFR with PVC Free RU Keyboard/Mouse Kit	638214-B21
HP USB BFR with PVC Free SE Keyboard/Mouse Kit	672097-103
HP USB BFR with PVC Free CH Keyboard/Mouse Kit	672097-113
HP USB BFR with PVC Free PT Keyboard/Mouse Kit	672097-133
HP USB BFR with PVC Free TR Keyboard/Mouse Kit	672097-143
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 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 IN Keyboard/Mouse Kit	672097-D63
HP USB BFR with PVC Free KR Keyboard/Mouse Kit	672097-KD3

**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 Server Console Switches

HP Server Console 0x2x8 Port Analog Switch	AF616A
HP Server Console 0x2x16 Port Analog Switch	AF617A
HP KVM Console USB 2.0 Virtual Media CAC Interface Adapter	AF629A

**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
HP KVM Console USB 2.0 Virtual Media CAC Interface Adapter	AF629A

**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)

### Memory

#### HP ProLiant ML10 Models

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

#### Standard Memory

2GB PC3-12800E-11 unbuffered DDR3 ECC up to 1600MT/s

#### Maximum Memory with Optional Memory

Up to 32GB of memory is available with the installation of optional memory, 4x 8 GB PC3-12800E un-buffered ECC DDR3 SDRAM DIMM Memory kits.

**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 2A and 4B are interleaving pair. Slots 1C and 3D are interleaving pair).

Memory		Slot			
		DIMM1C	DIMM2A	DIMM3D	DIMM4B
Standard (Entry Model)	2 GB	Empty	2 GB	Empty	Empty
Maximum	32 GB	8 GB	8 GB	8 GB	8 GB

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

HP Memory	HP 2GB (1x2GB) Single Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669320-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669322-B21
	HP 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669324-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).

### Storage



#### 1 Media Drive Bay

Optional: DVD Drive or DVD-RW Drive  
Optional: HDD cage for single HDD

Internal Optional: 3 bay LFF HDD cage. Internal access, replaces single LFF HDD

### Drive Support

Media	Quantity Supported	Position Supported	Controller
DVD Drive	1	1	Integrated SATA
DVD-RW Drive	1	1	Integrated SATA
LFF SATA HDD	1	1	B110i

Maximum Storage Capacity - SATA Models		
Internal	SATA	8TB (4 x 2TB) With optional 4LFF HDD Cage Option Kit

Gamay 300W ATX, E-star*6 PSU, BronzeF							
Part Number	699549-001						
Operational Input Voltage Range (Vrms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Max Rated Output Wattage Rating	299.659	299.529	299.342	298.996	298.809	298.643	298.477
Nominal Input Current (A rms)	3.6942	3.0526	1.8369	1.7685	1.68	1.6149	1.555
Max Rated Input Wattage Rating (Watts)	362.401	357.197	350.015	349.342	348.86	348.381	347.917
Max. Rated VA (Volt-Amp)	369.42	366.769	367.509	367.883	369.751	371.685	373.542
Efficiency (%)	82.69	83.86	85.52	85.59	85.65	85.72	85.79
Power Factor	0.981	0.9739	0.9524	0.9496	0.9435	0.9373	0.9314
Leakage Current (mA)	0.26	0.3	0.44	0.46	0.49	0.52	0.54
Maximum British Thermal Unit Rating (BTU-Hr)	1243.4	1225.54	1200.9	1198.59	1196.94	1195.29	1193.7

NOTE: To review typical system power ratings use the HP Power Advisor which is available via the online tool located at URL: [www.hp.com/go/proliant-energy-efficient](http://www.hp.com/go/proliant-energy-efficient) or [www.hp.com/go/hppoweradvisor](http://www.hp.com/go/hppoweradvisor)



### Technical Specifications

<b>System Unit</b>	<b>Dimensions</b> (H x W x D) (with feet)	14.3 x 6.5 x 15 in (36.39 x 16.5 x 38.1 cm)	
	<b>Weight</b> (approximate)	Non Hot Plug LFF Full Loading Single Package weight	9.74 kg (21.45 lb)
		Non Hot Plug LFF Full Loading without Package	7.80kg (17.18 lb)
		Non Hot Plug LFF light Loading without Package	5.94kg (13.08 lb)
	<b>300W Input Requirements</b> (per power supply)	Rated Line Voltage	90 to 140 VAC, 180 to 264 VAC
		Rated Input Current	8A (at 100 VAC) 4A (at 200 VAC)
		Rated Input Frequency	47 to 63 Hz
		Rated Input Power	410W (at 115 VAC), 410W (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/hppoweradvisor">http://www.hp.com/go/hppoweradvisor</a>	
	<b>Power Supply Output</b> (per power supply)	Rated Steady-State Power	300 W (at 100 VAC), 300 W (at 200 VAC)
		Maximum Peak Power	320 W (at 100 VAC), 320 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 may shut down if operating with a fan fault or above 42°C (107.6°F).	
		Non-operating	
	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.
<b>Altitude</b>	Operating	Maximum allowable altitude change rate is 457 m/min (1500 ft/min).	
	Non-operating	Maximum allowable altitude change rate is 457 m/min (1500 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	

### Technical Specifications

declared in accordance with ISO 9296 (ECMA 109).

Level C (idle 5.6 bel/OP 6.0 bel)

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

#### Emissions Classification (EMC)

FCC Rating	Class B
Normative Standards	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)
<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) SUSE LINUX Enterprise Server 11 (32bit and 64bit) SUSE LINUX Enterprise Server 10 (32bit and 64bit)
<b>Client System Support</b>	Microsoft Windows 7 Microsoft Windows XP Professional Edition Microsoft Windows Vista Business and Ultimate Editions 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 3.5 (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
<b>Security</b>	Secure Socket Layer Secure Shell version 2 (Password and certificate) Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser, CLP and XML scripting interface AES encryption of video RC4 encryption of video
<b>Directory Support Services</b>	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>	SNMP, IPMI 2.0 (System and LAN interface), DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP), HP RIBCL XML

### Technical Specifications

#### 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:
01-Nov-2014	From Version 11 to 12	Changed	Service and Support section was revised.
10-Jun-2014	From Version 10 to 11	Added	HP Remote Monitoring Power Distribution Units (mPDU) was added to Additional Options.  HP Server Console Switches and HP Server Console Switch G2 with Virtual Media & CAC were added to Additional Options.  Gamay 300W ATX, E-star*6 PSU, BronzeF was added to Storage.
		Changed	Front view image callout number 1 was updated.  Updates made to HP Hard Drives, Insight Software and Memory sections.
18-Apr-2014	From Version 9 to 10	Changed	Basic Care Package and Memory were revised.
31-Mar-2014	From Version 8 to 9	Removed	HP Insight Control server deployment was removed from HP Insight Control.
25-Feb-2014	From Version 7 to 8	Changed	Changes made to the Models section only.
24-Jan-2014	From Version 6 to 7	Changed	Changes made to update a few notes in the Standard Features section. Also, the HP Power Supplies section was removed from Core Options.
25-Oct-2013	From Version 5 to 6	Changed	Changes made to the following sections  Overview  Standard Features  Pre Configured Models  Core Options  Storage
10-Sep-2013	From Version 4 to 5	Changed	Changed the Front View image in Overview  Updates made to the Standard Features, Service and Support, Pre-configured Models, Core Options, Additional Options and Memory sections.
19-Aug-2013	From Version 3 to 4	Changed	Increased Maximum internal storage to 4TB  Memory product descriptions were revised  HP Service Pack for ProLiant (SPP) was added to HP Insight Management in Standard Features  HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive was added to Hard Drives  HP Uninterruptible Power Systems and HP Rack Options were added to Additional Options  HP Power Supplies was removed from Core Options

## Summary of Changes

05-Jul-2013	From Version 2 to 3	Changed/Removed	<p>Changed the overview section images</p> <p>Changes made in the Standard Features, Pre-Configured Models, Additional Options and Technical Specification sections.</p> <p>Removed all mentions of Red Hat Enterprise from the QS</p> <p>Removed the HP 250GB 3G SATA 7.2K rpm LFF section from Technical Specifications</p>
11-Jun-2013	From Version 1 to 2	Changed	<p>Corrected Overview image issue.</p>

## Summary of Changes

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