QuickSpecs
HP ProLiant MicroServer Generation 8 (Gen8)

Overview

HP ProLiant MicroServer Gen8 is a small, quiet, and stylishly designed server that is ideal for micro and small businesses looking to build their first IT server environment. With a form factor that is easy to use and service, HP MicroServer Gen8 helps businesses get to a server that provides better and secured access to data, more efficiency in operations, while driving down their operating expenses.

Front View:
1. USB 2.0 connector
2. USB 2.0 connector
3. DVD-RW (optional)
4. Power On/Standby button and system power LED button
5. NIC status LED
6. Hard Drive status LED
7. Intel® Processor
8. 2 DIMM slots: DDR3 Unbuffered (UDIMM) memory
9. Health LED
10. Hard Drive Bays
11. Front bezel

Rear View:
1. NIC 2 connector
2. NIC 1 connector / Shared iLO connector
3. Power cord connector
4. PCIe 2.0 x16 slot
5. iLO 4 connector
6. Video connector
7. USB 3.0 connectors
8. USB 2.0 connectors

What's New
- Front Bezel Faceplate Kit allows you to customize your MicroServer
- RDX support for disk based data protection
- PS1810-24G switch for larger office environments
QuickSpecs

HP ProLiant MicroServer Generation 8 (Gen8)

Standard Features

Processor

**NOTE:** Intel® Celeron® G1610T and Intel® Pentium® G2020T support up to 1333MHz DDR3 memory speed.
Intel® Celeron® G1610T (2.3GHz/2-core/2MB/35W) Processor
Intel® Pentium® G2020T (2.5GHz/2-core/3MB/35W) Processor

Cache Memory

3MB (1 x 3MB) L3 Cache
**NOTE:** For Dual-core Pentium processor.
2MB (1 x 2MB) L3 Cache
**NOTE:** For Dual-core Celeron processor.
**NOTE:** All processor models above list the L3 Cache associated with that particular processor.

Chipset

Intel® C204 Chipset
**NOTE:** For more information regarding Intel® chipsets, please see the following URL:

On System Management Processor

HP iLO (Firmware: HP iLO 4)
**NOTE:** For more information, visit: http://www.hp.com/go/ilo.

Memory Protection

ECC

Memory

Type
HP SmartMemory
DDR3 Unbuffered (UDIMM)

DIMM Slots Available
2

Standard
2GB (1 x 2GB) PC3-12800E DDR3 UDIMM

Maximum
16GB (2 x 8GB) PC3-12800E DDR3 UDIMM

**NOTE:** HP memory from previous generation servers are not fully compatible with the HP ProLiant MicroServer Gen8.

Network Controller

HP Ethernet 1Gb 2-port 332i Adapter

Expansion Slots

<table>
<thead>
<tr>
<th>Expansion Slot #</th>
<th>Technology</th>
<th>Bus Width*</th>
<th>Connector Width</th>
<th>Form Factor</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PCIe 2.0</td>
<td>x16</td>
<td>x16</td>
<td>Low Profile</td>
<td></td>
</tr>
</tbody>
</table>

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

**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.

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).

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**Storage Controller**

HP Dynamic Smart Array B120i Controller

**NOTE:** HDD bays 1 and 2 support 6.0Gb/s SATA. HDD bays 3 and 4 support 3.0Gb/s SATA.

**NOTE:** Supports RAID 0/1/10 only. No FBWC support. For FBWC, a standup Smart Array Controller card must be configured.

**NOTE:** For more information about the controller and its features, see the HP Dynamic Smart Array RAID Controller User Guide on the HP website: [http://www.hp.com/support/DSA_RAID_UG_en](http://www.hp.com/support/DSA_RAID_UG_en).

**NOTE:** To configure arrays, see the Configuring Arrays on HP Smart Array Controllers Reference Guide on the HP website [http://www.hp.com/support/CASAC_RG_en](http://www.hp.com/support/CASAC_RG_en).


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**Internal Storage Devices**

- Optical Drive
- Hard Drives

Optional: SATA DVD-RW drive

None ship standard

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**Maximum Internal Storage**

Non-Hot Plug SATA

12TB (4 x 3TB) 3.5" SATA
Interfaces

<table>
<thead>
<tr>
<th>Interface</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video</td>
<td>1 Rear standard video</td>
</tr>
<tr>
<td>HP iLO Remote Management Network Port</td>
<td>1Gb Dedicated (default iLO4 configuration)</td>
</tr>
<tr>
<td>Micro SD slot</td>
<td>1 Internal</td>
</tr>
<tr>
<td>NOTE:</td>
<td>The MicroSD slot is not a hot-pluggable device. Customers should not attempt to plug a MicroSD card into the MicroSD slot while the server is powered.</td>
</tr>
<tr>
<td>USB 2.0 Ports</td>
<td>5 total (2 front, 2 rear, 1 internal)</td>
</tr>
<tr>
<td>USB 3.0 Ports</td>
<td>2 total (2 rear)</td>
</tr>
<tr>
<td>NOTE:</td>
<td>Functional after OS boot.</td>
</tr>
<tr>
<td>Network RJ-45 (Ethernet)</td>
<td>2 (Port 1 shared for HP iLO4 as optional configuration)</td>
</tr>
</tbody>
</table>

Industry Standard Compliance

- ACPI V2.0b Compliant
- PCIe 2.0 Compliant
- PXE Support
- WOL Support
- USB 2.0
- USB 3.0
- SATA Gen 2
- SATA Gen 3

Server Power Cords

The MicroServer models ship standard with a 6’ country specific NEMA power cord. If customers require an alternative local power cord, they can check the power cord matrix for the appropriate country specific sku. Please see the following power cord matrix: [http://www.hp.com/go/powercordmatrix](http://www.hp.com/go/powercordmatrix).

Power Specifications

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).

**NOTE:** Power Specification and Technical Content for supported power supplies can be found at: [http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html](http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html)

Power Supply

One (1) 150 Watts Non-Hot Plug, Non redundant Power Supply

System Fans

One (1) - Non-redundant system fan shipped standard
Operating Systems and Virtualization Software Support for ProLiant Servers

Microsoft Windows Server
Red Hat Enterprise Linux (RHEL)
SUSE Linux Enterprise Server (SLES)

NOTE: For more information on HP’s Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: http://www.hp.com/go/ossupport and our driver download page: http://www.hp.com/support/MicroServerGen8

Graphics
Integrated Matrox G200 video standard
- 1280 x 1024 (32 bpp)
- 1920 x 1200 (16 bpp)

HP iLO 4 On System Management Memory
- 16 MB Flash
- 256 MB DDR 3 with ECC (112 MB after ECC and video)

Form Factor
Ultra Micro Tower

On System Management
HP iLO Management Engine

HP iLO Management Engine is a comprehensive set of embedded management features supporting the complete lifecycle of the server, from initial deployment, through ongoing management, to service alerting and remote support. HP iLO Management Engine comes standard on all HP ProLiant Gen8 servers. The HP iLO Management Engine portfolio includes:

- **HP iLO**: The HP iLO (Integrated Lights-Out) management processor is the core foundation for the HP iLO Management Engine
- **HP Agentless Management**: Provides built in server health monitoring and alerting capability without OS agents, that starts working the moment a power cord and an Ethernet cable are connected.
- **HP Active Health System**: Always on, continuous monitoring for increased stability and shorter downtimes; 100% configuration history; Health and service alerts and easy export and upload to Service and Support.
- **HP Intelligent Provisioning**: Lets customers provision and configure a single server without any separate media. No more SmartStart CDs or Smart Update Firmware DVD are needed.
  - To start Intelligent Provisioning:
    - Press the F10 key during the ProLiant Gen8 server boot process (also known as power on self test or POST).
    - Please go to the Intelligent Provisioning website at www.hp.com/go/intelligentprovisioning for additional information and to view usage videos.
    - Use the Service Pack for ProLiant (SPP) at www.hp.com/go/spp to get firmware and software updates.
- **HP iLO Mobile App**: Enables the ability to access, deploy, and manage
your server anytime from anywhere from select smartphones and mobile devices. For additional information please visit:
www.hp.com/go/ilo/mobileapp

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

<table>
<thead>
<tr>
<th>HP Insight Management</th>
<th>HP Service Pack for ProLiant (SPP)</th>
</tr>
</thead>
</table>
|                       | HP Service Pack for ProLiant (SPP) and HP Smart Update Manager (HP SUM) version 5 provide a new, comprehensive approach to firmware and system software maintenance. Together they provide better operating stability and ensure maximum uptime. The SPP will be updated at a predictable cadence, typically coinciding with new HP server hardware launches. By enabling all firmware to be updated online and integrating firmware and system software updates in one operation HP SUM and the SPP offer faster updates of individual servers and dramatically faster updates of entire BladeSystem enclosures. Further improving system uptime and stability is the fact that HP provides 12 months of support on each Service Pack for ProLiant. The user experience around HP SUM and the SPP has been improved in several ways, starting with the web download. A single web page provides access to a single download containing both the latest version of HP SUM version 5 and the latest SPP. Optional smaller subsets with only specific types of servers or specific operating systems are offered to save on download time. The HP SUM application has been re-written to provide a more straightforward, intuitive user interface that guides the user through the steps of discovery, analyses and update, providing comprehensive information on available updates, criticality and interdependencies. This information is also available in reports. By providing the option of multiple local or shared repositories which can be easily updated from hp.com, HP SUM provides the tools to optimize stability and consistency throughout the company. While HP SUM and the SPP will recommend the combinations of firmware and system software that HP has found to be the best practice, the application gives customers the flexibility to set their own specific baseline.

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

**NOTE:** The Service Pack for ProLiant (which includes HP SUM 5) can be downloaded from www.hp.com/go/spp/download. More information can be found: www.hp.com/go/spp and http://www.hp.com/go/hpsum

<table>
<thead>
<tr>
<th>Security</th>
<th>Setup password</th>
</tr>
</thead>
</table>
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 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.

**NOTE:** Server Warranty includes 1 year Next Day Parts replacement, 0-Years Labor, 0-Years Onsite support. Additional information regarding worldwide limited warranty and technical support is available at: [http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html](http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html).
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. HP Insight Control also supports Location and Power Discovery Services to automate many configuration, asset tracking, and power management tasks to speed implementation and prevent downtime. For more information, see 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, see: http://www.hp.com/services/insight.

HP iLO Essentials license ideal for small and medium business customers. The specially created HP iLO Essentials (a subset of iLO Advanced functionality) saves SMB customers time and money, by ease of remote server set up through the interactive virtual media, lowering operational costs with remote access via the Integrated Remote Console, and faster time to resolution with email-based proactive notifications. With this newly designed HP iLO Essentials license SMB customers now have the option of a server management package solely design and priced just right for their IT environments. HP iLO Essentials is available on all HP ProLiant Gen8 e-series making this an ideal solution for small business owners. For more information, see: http://www.hp.com/go/iLO/essentials

HP iLO Advanced HP Integrated Lights-Out Advanced License a product option, providing smart remote server management without compromise. iLO Advanced unlocks the full set of remote administration functionality for all HP ProLiant servers by activating the full Virtual Keyboard Video and Mouse remote console, multi-user collaboration, console record and replay, GUI-based and scripted virtual media and virtual folders, and enhanced security and power management functionality. For more information, see: http://www.hp.com/go/iloadvance

HP Insight Online is a new addition to the HP Support Center for one stop, secure access to product and HP support information personalized to your IT environment. Insight Online can automatically display devices remotely monitored by HP Insight Remote Support. With Insight Online’s easy navigation you can efficiently track your IT support contracts and device status from anywhere and at anytime. www.hp.com/go/insightonline

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
**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.

**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](http://www.hp.com/products/configurator)
Service and Support

**HP Technology Services for Industry Standard Servers**
Capitalizing on HP ProLiant server 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.

**Protect your business beyond warranty with HP Care Pack Services**
HP Care Pack services offer complete care and support expertise with committed response choices designed to meet your IT and business needs.

- HP Foundation Care services offer scalable reactive support-packages for HP industry-standard servers and software. You can choose the type and level of service that is most suitable for your IT and business needs. HP Proactive Care delivers high levels of system availability through proactive service management and advanced technical response.

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**Optimized Care**

**Supports maintaining servers at optimum performance availability**

**3-Year HP Hardware Support Onsite Service, 4-hour response, 24x7**
For customers who need same day response service level 24x7.

Provides you with an HP authorized representative who will arrive at the Customer's site any time and day of the year to begin hardware maintenance service within 4 hours of the service request being logged.


**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.

## Service and Support

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard Care</strong></td>
<td>Supports maintaining high level of server availability</td>
</tr>
<tr>
<td><strong>3-Year HP Hardware Support Onsite Service, 4-hour response, 13x5</strong></td>
<td>Delivers increased equipment availability and productivity with rapid remote support and onsite response for your HP server and storage hardware. The benefits include:</td>
</tr>
<tr>
<td></td>
<td>• Help improve or maintain system uptime</td>
</tr>
<tr>
<td></td>
<td>• Convenient onsite support</td>
</tr>
<tr>
<td></td>
<td>• Committed response time</td>
</tr>
<tr>
<td><strong>HP ProLiant Server Hardware Installation</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Basic Care</strong></td>
<td>Delivers Minimum Recommended Support Service Level</td>
</tr>
<tr>
<td><strong>3-Year HP Hardware Support Onsite Service, Next Business Day Response 9x5</strong></td>
<td>Provides high-quality remote assistance and onsite support for your covered hardware, helping you to improve product uptime. The benefits include:</td>
</tr>
<tr>
<td></td>
<td>• Help improve or maintain system uptime</td>
</tr>
<tr>
<td></td>
<td>• Convenient onsite support</td>
</tr>
<tr>
<td></td>
<td>• Reliable response time</td>
</tr>
</tbody>
</table>

**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.


Related Services

**HP Proactive Care Personalized Support - Environmental Option**

The Personalized Support option provides an assigned Account Support Manager who can bring best practices from across the industry plus extra technical skills to your IT team. This option is only available as an add-on to HP Proactive Care Support.

**HP Proactive Select Service**

Provides a flexible way to purchase HP best-in-class consultancy and technical services. You can buy Proactive Select Service Credits when you purchase your hardware and then use the credits over the next 12 months. [http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-3842ENN.pdf](http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-3842ENN.pdf)

Additional HP Care Pack services can be found at: [http://www.hp.com/go/cpc](http://www.hp.com/go/cpc)

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**Insight Online/Insight Remote Support**


* Insight Remote Support is a prerequisite for Proactive Care.

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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](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 quick-specs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

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

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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](http://www.hp.com/services/proliant)
## Entry Model

<table>
<thead>
<tr>
<th>Model</th>
<th>Pre-configured Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP ProLiant MicroServer Gen8 G1610T 1P 2GB-U B120i NHP SATA 150W PS Server 712317-001</td>
<td>Processor: (1) Intel® Celeron® G1610T (2.3GHz/2-core/2MB/35W) Processor</td>
</tr>
<tr>
<td></td>
<td>Cache Memory: 2MB (1 x 2MB) L3 cache</td>
</tr>
<tr>
<td></td>
<td>Memory: 2GB (1 x 2GB) PC3-12800E DDR3 UDIMM</td>
</tr>
<tr>
<td></td>
<td>NOTE: Total of 2 DIMM slots.</td>
</tr>
<tr>
<td></td>
<td>Network Controller: HP Ethernet 1Gb 2-port 332i Adapter</td>
</tr>
<tr>
<td></td>
<td>Storage Controller: HP Dynamic Smart Array B120i Controller</td>
</tr>
<tr>
<td></td>
<td>Hard Drive: None ship standard</td>
</tr>
<tr>
<td></td>
<td>Internal Storage: 4 LFF NHP SATA HDD cage; includes 4 LFF hard drive carriers</td>
</tr>
<tr>
<td></td>
<td>Optical Drive Bay: None ship standard</td>
</tr>
<tr>
<td></td>
<td>PCI Slots: 1 standard (1-Low Profile) PCIe 2.0</td>
</tr>
<tr>
<td></td>
<td>Power Supply: 150W Non-Hot Plug, Non-Redundant Power Supply</td>
</tr>
<tr>
<td></td>
<td>Fans: One (1) Non-redundant system fan ships standard</td>
</tr>
<tr>
<td></td>
<td>Management: HP iLO Management Engine</td>
</tr>
<tr>
<td></td>
<td>Optional: iLO Essentials; iLO Advanced</td>
</tr>
<tr>
<td></td>
<td>Operating System: None</td>
</tr>
<tr>
<td></td>
<td>Form Factor: Ultra Micro Tower</td>
</tr>
<tr>
<td></td>
<td>Warranty: Server Warranty includes 1-Year Parts, 0-Year Labor, 0-Year Onsite support with next business day response</td>
</tr>
</tbody>
</table>

## Base Model

<table>
<thead>
<tr>
<th>Model</th>
<th>Base Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP ProLiant MicroServer Gen8 G2020T 1P 2GB-U B120i NHP SATA 150W PS Server 712318-001</td>
<td>Processor: (1) Intel® Pentium® G2020T (2.5GHz/2-core/3MB/35W) Processor</td>
</tr>
<tr>
<td></td>
<td>Cache Memory: 3MB (1 x 3MB) L3 cache</td>
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<tr>
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<td>Memory: 2GB (1 x 2GB) PC3-12800E DDR3 UDIMM</td>
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<td>Network Controller: HP Ethernet 1Gb 2-port 332i Adapter</td>
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<td></td>
<td>PCI-Express Slots: 1 standard (1-Low Profile) PCIe 2.0</td>
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<tr>
<td></td>
<td>Power Supply: 150W Non-Hot Plug, Non-Redundant Power Supply</td>
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<td>Fans: One (1) Non-redundant system fan ships standard</td>
</tr>
<tr>
<td></td>
<td>Management: HP iLO Management Engine</td>
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<tr>
<td></td>
<td>Optional: iLO Essentials; iLO Advanced</td>
</tr>
<tr>
<td></td>
<td>Operating System: None</td>
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<td>Form Factor: Ultra Micro Tower</td>
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</tbody>
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## HP ProLiant MicroServer Generation 8 (Gen8)

### Core Options

<table>
<thead>
<tr>
<th><strong>HP Unique Options</strong></th>
<th><strong>HP Wireless 802.11 b/g/n PCIe Card</strong></th>
<th><strong>FH971AA</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>HP MicroServer Gen8 Front Bezel Faceplate Kit</strong></td>
<td><strong>722320-B21</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>HP Memory</strong></th>
<th><strong>Unbuffered with ECC DIMMs (UDIMMs)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>HP 2GB (1x2GB) Single Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit</strong></td>
</tr>
<tr>
<td></td>
<td><strong>HP 2GB (1x2GB) Single Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit</strong></td>
</tr>
<tr>
<td></td>
<td><strong>HP 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit</strong></td>
</tr>
<tr>
<td></td>
<td><strong>HP 4GB (1x4GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit</strong></td>
</tr>
<tr>
<td></td>
<td><strong>HP 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit</strong></td>
</tr>
<tr>
<td></td>
<td><strong>HP 8GB (1x8GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit</strong></td>
</tr>
</tbody>
</table>

**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:** Depending on the memory configuration and processor model, 1600MHz and 1333MHz 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 [www.hp.com/go/ddr3memory-configurator](http://www.hp.com/go/ddr3memory-configurator).

**NOTE:** For additional memory rules and guidelines, see the "Memory" section later in this document.

**NOTE:** For more information on ProLiant Energy Efficient Features, see: [www.hp.com/go/proliant-energy-efficient](http://www.hp.com/go/proliant-energy-efficient)

**NOTE:** PC3L is a low voltage memory.

<table>
<thead>
<tr>
<th><strong>HP Optical Drives</strong></th>
<th><strong>HP 9.5mm SATA DVD-RW JackBlack Optical Drive</strong></th>
<th><strong>652241-B21</strong></th>
</tr>
</thead>
</table>
**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.

### 6G SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives

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


### HP Networking

- **HP NC112T PCI Express Gigabit Server Adapter**
  - 503746-B21

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

- **HP PS1810-8G Switch**
  - J9833A
- **HP PS1810-24G Switch**
  - J9834A

**NOTE:** HP PS1810 Series Switches have been custom designed to work with the HP ProLiant MicroServer Gen8. These are layer 2 web-managed gigabit switches with two offerings – 8 port and 24 port models. PS1810 Switches have built-in technology that will enable automatic discovery of ProLiant Gen8 Servers. In addition the 8 port switch had a unique chassis design that enables physical stacking on the MicroServer.

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: [http://www.hp.com/go/ps1810](http://www.hp.com/go/ps1810)
<table>
<thead>
<tr>
<th>HP Insight Software</th>
<th>HP Insight Control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HP Insight Control including 1yr 24x7 Technical Support and Updates Electronic License C6N28AAE</td>
</tr>
<tr>
<td></td>
<td>HP Insight Control Server Provisioning Media Kit BD883A</td>
</tr>
<tr>
<td></td>
<td>HP Insight Management Media Kit C6N31A</td>
</tr>
<tr>
<td></td>
<td>HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Electronic License C6N36AAE</td>
</tr>
</tbody>
</table>

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

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

**NOTE:** Licenses ship without media. The HP Insight Control Media Kit can be ordered separately, or can be downloaded at: [http://www.hp.com/go/insightupdates](http://www.hp.com/go/insightupdates)

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

---

### HP Integrated Lights-Out (iLO)

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

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HP iLO Advanced including 1yr 24x7 Technical Support and Updates Electronic License TA850AAE</td>
<td></td>
</tr>
<tr>
<td>HP iLO Advanced including 3yr 24x7 Tech Support and Updates Electronic License BD506AAE</td>
<td></td>
</tr>
<tr>
<td>HP Integrated Lights-Out Essentials including 3yr 24x7 Tech Support and Updates E-LTU BD774AAE</td>
<td></td>
</tr>
<tr>
<td>HP Integrated Lights-Out Essentials including 1yr 24x7 Tech Support and Updates E-LTU BD775AAE</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** For additional license options please see the QuickSpecs at: [http://h18004.www1.hp.com/products/quickspecs/14276_na/14276_na.html](http://h18004.www1.hp.com/products/quickspecs/14276_na/14276_na.html)

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

---

### HP Security

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HP MicroServer Gen8 Front Bezel Faceplate Kit 722320-B21</td>
<td></td>
</tr>
<tr>
<td>HP Trusted Platform Module Option 488069-B21</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline. For more information about TPM, including a white paper, go to: [www.hp.com/go/TPM](http://www.hp.com/go/TPM).

**NOTE:** The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.
HP Storage Controllers

**SAS Controllers**

- **Smart Array P222 Controller**
  HP Smart Array P222/512 FBWC 6Gb 1-port Int/1-port Ext SAS Controller 631667-B21

  **NOTE:** HP Smart Array P22/512 FBWC qualified for RAID support only for HP ProLiant MicroServer Gen8.

  **NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:
  (Smart Array P222 Controller)

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HP Disk Backup

**NOTE:** For the complete range of RDX drives and media see: http://www.hp.com/go/rdx

- **HP RDX Removable Disk Backup Systems USB**
  - HP RDX320 Internal Removable Disk Backup System B7B64A
  - HP RDX500 USB3.0 Int Disk Backup System B7B64A
  - HP RDX320 USB3.0 Internal Disk Backup System B7B62A
  - HP RDX320 USB3.0 External Disk Backup System B7B63A
  - HP RDX500 USB3.0 External Disk Backup System B7B66A
  - HP RDX1000 USB3.0 External Disk Backup System B7B69A

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HP Uninterruptible Power Systems

**HP Tower - UPS**

- **HP T750 G2 UPS Models**
  - HP T750 G2 750VA NA Tower Uninterruptible Power System AF446A
  - HP T750J JP Uninterruptible Power System AF456A

- **HP T1000 G3 UPS Models**
  - HP T1000 G3 1000VA NA Tower Uninterruptible Power System AF448A

- **HP T1500 G3 UPS Models**
  - HP T1500 G3 1400VA NA Tower Uninterruptible Power System AF450A

  **NOTE:** For additional information please go to: http://www.hp.com/go/rackandpower (Worldwide)

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

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HP Rack Options

**HP USB Keyboard and Mouse**

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

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

**HP USB and SD Options**

**HP Flash Media Kits for USB Drives**
- HP 2GB USB Flash Media Drive Key Kit
  
  **NOTE:** HP qualified blank USB key for use with HP ProLiant servers that support the VMware virtualization environment and other HP value-add software. HP recommends this industry standard USB flash device for use with VMware ESXi. USB device must be installed in the internal slot of the ProLiant server for use with VMware ESXi. Refer to HP VMware Getting Started Guide for installation instructions.

**HP Enterprise Performance Flash Media Kits for Memory Cards**
- HP 4GB microSD Enterprise Performance Flash Media Kit
  
  **HP Enterprise Mainstream Flash Media Kits for Memory Cards**
- HP 32GB microSD Enterprise Mainstream Flash Media Kit
  
  **NOTE:** Blank SD media device is supported for use with VMware. SD media must be installed in the internal slot of the ProLiant server. Learn more at: [http://www.hp.com/go/proliantvirtualization](http://www.hp.com/go/proliantvirtualization).

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

**HP Care Pack Services**

- HP 3 year Next business day ProLiant MicroServer Hardware Support
  
  **NOTE:** For more information, customer/resellers can contact: [http://www.hp.com/services/carepack](http://www.hp.com/services/carepack).

- HP 3 year 4 hour 13x5 ProLiant MicroServer Hardware Support
  
  **NOTE:** For more information, customer/resellers can contact: [http://www.hp.com/services/carepack](http://www.hp.com/services/carepack).

- HP 3 year 4 hour 24x7 ProLiant MicroServer Hardware Support

- HP Install ProLiant MicroServer Service
HP ProLiant Micro Server Generation 8

Standard Memory
2GB (1x2GB) PC3-12800E DDR3 UDIMM Memory kit installed

Standard Memory Replaced with Optional Memory
Up to 16GB of memory is available with the removal of the standard 2GB of memory and the optional installation of 2 x 8 GB PC3-12800E DDR3 UDIMM Memory kits.

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

<table>
<thead>
<tr>
<th>Memory</th>
<th>Slot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>1A</td>
</tr>
<tr>
<td></td>
<td>2GB</td>
</tr>
<tr>
<td>Optional</td>
<td>2B</td>
</tr>
<tr>
<td></td>
<td>Empty</td>
</tr>
<tr>
<td>Optional</td>
<td>1A</td>
</tr>
<tr>
<td></td>
<td>2GB</td>
</tr>
<tr>
<td></td>
<td>2GB</td>
</tr>
<tr>
<td>Optional</td>
<td>2B</td>
</tr>
<tr>
<td></td>
<td>4GB</td>
</tr>
<tr>
<td>Optional</td>
<td>1A</td>
</tr>
<tr>
<td></td>
<td>4GB</td>
</tr>
<tr>
<td></td>
<td>4GB</td>
</tr>
<tr>
<td>Maximum</td>
<td>2B</td>
</tr>
<tr>
<td></td>
<td>8GB</td>
</tr>
<tr>
<td></td>
<td>8GB</td>
</tr>
</tbody>
</table>

Following are memory options available from HP:

**HP Memory Unbuffered with ECC DIMMs (UDIMMs)**

- HP 2GB (1x2GB) Single Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit 669320-B21
- HP 2GB (1x2GB) Single Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit 647905-B21
- HP 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit 669322-B21
- HP 4GB (1x4GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit 647907-B21
- HP 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit 669324-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.

**NOTE:** Depending on the memory configuration and processor model, 1600MHz and 1333MHz 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 www.hp.com/go/ddr3memory-configurator.

**NOTE:** For additional memory rules and guidelines, see the “Memory” section later in this document.

**NOTE:** For more information on ProLiant Energy Efficient Features, see: www.hp.com/go/proliant-energy-efficient

**NOTE:** PC3L is a low voltage memory. Low voltage memory operates at standard
voltage in the MicroServer Gen8.
**QuickSpecs**

**HP ProLiant MicroServer Generation 8 (Gen8)**

**Storage**

A Optical Drive Bay

1, 2, 3, 4 Four (4) Non-Hot Plug Drive Bays

**Drive Support**

<table>
<thead>
<tr>
<th>Removable Media</th>
<th>Quantity Supported</th>
<th>Position Supported</th>
<th>Controller</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVD-RW Drive</td>
<td>1</td>
<td>A</td>
<td>Integrated SATA</td>
</tr>
</tbody>
</table>

**Maximum Storage Capacity**

| Internal          | SATA               | 12.0TB (4 x 3TB)   |
## Technical Specifications

<table>
<thead>
<tr>
<th>System Unit</th>
<th>Dimensions (H x W x D) (with feet)</th>
<th>9.15 x 9.05 x 9.65 in (23.24 x 22.97 x 24.51 cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (approximate)</td>
<td>Maximum (all hard drives, power supply and processor installed)</td>
<td>21.60 lb (9.8 kg)</td>
</tr>
<tr>
<td></td>
<td>Minimum (one hard drive, power supply, and processor installed)</td>
<td>15.13 lb (6.8 kg)</td>
</tr>
<tr>
<td>Input Requirements (per power supply)</td>
<td>Rated Line Voltage</td>
<td>100 -- 127 VAC, 200 -- 240 VAC</td>
</tr>
<tr>
<td></td>
<td>Rated Input Current</td>
<td>3.5 A (at 110 VAC), 2 A (at 200 VAC)</td>
</tr>
<tr>
<td></td>
<td>Rated Input Frequency</td>
<td>47 to 63 Hz</td>
</tr>
<tr>
<td></td>
<td>Rated Input Power</td>
<td>191.4 W (at 100 VAC), 184.9 W (at 200 VAC)</td>
</tr>
<tr>
<td>BTU Rating</td>
<td>Maximum</td>
<td>247.055 BTU/hr (at 100 VAC), 274.505 BTU/hr (at 200 VAC)</td>
</tr>
<tr>
<td>Power Specifications</td>
<td>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></td>
<td></td>
</tr>
<tr>
<td>Power Supply Output (per power supply)</td>
<td>Rated Steady-State Power</td>
<td>150 W (at 100 VAC), 150 W (at 200 VAC)</td>
</tr>
<tr>
<td></td>
<td>Maximum Peak Power</td>
<td>200 W (at 100 VAC), 200 W (at 200 VAC)</td>
</tr>
<tr>
<td>System Inlet Temperature</td>
<td>Operating</td>
<td>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).</td>
</tr>
<tr>
<td></td>
<td>Non-operating</td>
<td>-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr)</td>
</tr>
<tr>
<td>Relative Humidity (non-condensing)</td>
<td>Operating</td>
<td>10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.</td>
</tr>
<tr>
<td></td>
<td>Non-operating</td>
<td>5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.</td>
</tr>
</tbody>
</table>
| Altitude | Operating | 3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457
m/min (1500 ft/min).

Non-operating 9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).

Acoustic Noise (Fully Loaded)

Idle

LWAd 3.9 BELS
LpAm 21.0 dBA

Operating

LWAd 3.9 BELS
LpAm 21.0 dBA

Acoustic Noise (Lightly Loaded)

Idle

LWAd 3.4 BELS
LpAm 18.0 dBA

Operating

LWAd 3.5 BELS
LpAm 18.0 dBA

Emissions Classification (EMC)

FCC Rating Class B

Normative Standards
CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1

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

HP Dynamic Smart Array B120i Controller

Dimensions
Embedded

Disk Drive Interface - Transfer rate
Up to 6Gb/s SATA (Serial ATA)

SATA Connectors
5 internal connectors with non-hot-plug support

Server Interface
PCIe 2.0

SATA Speed
x2 6Gb/s SATA physical links (compatible with 3Gb/s SATA)
None

Logical Drives Supported
NOTE: On SATA models with embedded RAID, setup instructions are located in the MicroServer User Guide

Host Memory Addressing
64-bit, supporting greater than 4GB server memory space

Hot Plug Support
No

RAID Support
RAID 0 (Striping), RAID 1 (Mirroring)
RAID 1+0 (Striping & Mirroring)
### HP Ethernet 1Gb 2-port NC332i Adapter

#### Network Interface Compatibility
- 10Base-T/100Base-TX/1000Base-TX
- IEEE 802.3 10Base-T
- IEEE 802.3ab 1000Base-T
- IEEE 802.3u 100Base-TX
- Energy Efficient Ethernet (EEE) compliant with IEEE Std 802.3az (default is disabled)

#### Data Transfer Method
- Single lane (x1), 100MHz PCI Express Reference Clock

#### Controller
- BCM5720

#### Network Transfer Rate
<table>
<thead>
<tr>
<th>Type</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>10Base-T (Half-Duplex)</td>
<td>10 Mb/s</td>
</tr>
<tr>
<td>10Base-T (Full-Duplex)</td>
<td>20 Mb/s</td>
</tr>
<tr>
<td>100Base-TX (Half-Duplex)</td>
<td>100 Mb/s</td>
</tr>
<tr>
<td>100Base-TX (Full-Duplex)</td>
<td>200 Mb/s</td>
</tr>
<tr>
<td>1000Base-TX (Half and Full-Duplex)</td>
<td>2000 Mb/s</td>
</tr>
</tbody>
</table>

#### Connector
- RJ-45 connector

#### Cable Support
- 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)

### 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](http://www.hp.com/go/green). To recycle your product, please go to: [http://www.hp.com/go/green](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](http://www.hp.com/go/green). These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

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