HPE ProLiant MicroServer Gen10

HPE ProLiant MicroServer Gen10 is a compact and uniquely designed server that is ideal for small and home offices looking to build their first IT server environment with a form factor that is easy to use. HPE MicroServer Gen10 helps businesses to provide better and easy access to data, more efficiency in operations, while driving down their operating expenses.

Front View (External):
1. (2) USB 3.0 ports
2. Media bay (Optional (1) DVD-RW or (1) SATA SSD)
3. Front bezel lock/unlock indicators
4. Power on/Standby button and system power LED
5. Health LED
6. NIC status LED
7. Drive activity LED

Front View (Internal):
1. Hard drive screws
2. Hard drive bays
Overview

Rear View:
1. (2) USB 2.0 ports
2. (2) USB 3.0 ports
3. NIC 1 port
4. NIC 2 port
5. Power jack
6. PCIe Gen3 slots
7. VGA port
8. (2) Display Ports 1.2

Internal View:
1. DIMM slots
2. TPM connector
3. LFF/SFF SATA connector
4. SATA connector
5. System board power connector
6. System battery
7. Internal USB 2.0 port
8. Expansion slot 2, PCIe3 x4 (1)
9. Expansion slot 1, PCIe3 x8 (8, 4, 1)

What's New
- AMD-based system with AMD Opteron™ X3000 series APUs
- AMD Opteron™ X3216 for Entry BTO SKU
- Higher maximum memory of 32GB DDR4 UDIMM
- Support for one read-intensive SATA NHP SFF SSD
- System default with 2x Display Ports 1.2
- ClearOS preload on all BTO & Special SKUs with more or equal to one SATA HDD installed
# Standard Features

<table>
<thead>
<tr>
<th>Processor</th>
<th>AMD Opteron™ X3216 Processor (1.6-3.0GHz/2 compute cores/4 graphic cores/1MB/12-15W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cache Memory</td>
<td>1MB (1 x 1MB) L2 Cache</td>
</tr>
<tr>
<td>NOTE:</td>
<td>For X3216 processor.</td>
</tr>
<tr>
<td>Memory Protection</td>
<td>ECC</td>
</tr>
<tr>
<td>Memory</td>
<td>Type: HPE Standard Memory, DDR4 Unbuffered (UDIMM)</td>
</tr>
<tr>
<td>DIMM Slots Available</td>
<td>2</td>
</tr>
<tr>
<td>Standard</td>
<td>8GB (1 x 8GB) PC4-2400T DDR4 UDIMM</td>
</tr>
<tr>
<td>Maximum</td>
<td>32GB (2 x 16GB) PC4-2400T DDR4 UDIMM</td>
</tr>
<tr>
<td>NOTE:</td>
<td>HPE memory from previous generation servers are not fully compatible with the HPE ProLiant MicroServer Gen10.</td>
</tr>
<tr>
<td>Network Controller</td>
<td>Embedded Broadcom BCM5720 Dual Port Gbe LOM</td>
</tr>
<tr>
<td>Expansion Slots</td>
<td></td>
</tr>
<tr>
<td>Expansion Slot #</td>
<td>Technology</td>
</tr>
<tr>
<td>1</td>
<td>PCIe 3.0</td>
</tr>
<tr>
<td>2</td>
<td>PCIe 3.0</td>
</tr>
<tr>
<td>Storage Controller</td>
<td>Embedded Marvell 88SE9230 PCIe to SATA 6Gb/s Controller</td>
</tr>
<tr>
<td>NOTE:</td>
<td>Supports RAID 0/1/10 only. No FBWC support.</td>
</tr>
<tr>
<td>Internal Storage Devices</td>
<td>Optical Drive</td>
</tr>
<tr>
<td>Hard Drives</td>
<td>Optional: SATA SSD</td>
</tr>
<tr>
<td>Maximum Internal Storage</td>
<td>Non-hot plug SATA</td>
</tr>
</tbody>
</table>
Standard Features

Interfaces

- **Video**: 1 Rear VGA port, 2 Rear Display ports 1.2
- **USB 2.0 Ports**: 3 total (2 rear, 1 internal)
- **USB 3.0 Ports**: 4 total (2 rear, 2 front)
- **Network RJ-45 (Ethernet)**: 2

**Industry Standard Compliance**

- ACPI V5.0 Compliant
- PCIe 3.0 Compliant
- PXE Support
- WOL Support
- EMC Class B
- USB 2.0
- USB 3.0
- SATA 6Gb/s

**Server Power Cords**

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

**Power Specifications**

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

**NOTE:** See Technical Specifications section at end of QuickSpecs for Power Specifications.

**Power Supply**

One (1) 200 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 2012 R2 and 2016**
- **ClearOS**

**NOTE:** ClearOS, an easy to use OS with an application marketplace, allows you to build a fully functional server that is just right for you at no upfront cost. It is available via download.

**NOTE:** HPE ProLiant servers with ClearOS give you a simple, secure, and affordable operating system with an intuitive web based graphical user interface that provides a cloud-like experience on-premise, and an Application Marketplace with over 100 apps and growing. Whether you’re starting out or scaling, you decide what applications you need and pay as you grow. To learn more on what you can do, please visit [http://www.hpe.com/servers/clearos](http://www.hpe.com/servers/clearos).


**Form Factor**

Ultra Micro Tower
Service and Support

Service and Support
HPE Pointnext for Industry Standard Servers
HPE Pointnext delivers confidence, reduces risk and helps customers realize agility and stability. Our support technology lets you to tap into the knowledge of millions of devices and thousands of experts to stay informed and in control, anywhere, any time.

Protect your business beyond warranty with HPE Packaged Support Services
HPE Packaged Support 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

Foundation Care 24x7, three-year Packaged Support Service
HPE Foundation Care 24x7 connects you to HPE 24 hours a day, seven days a week for assistance on resolving issues. Hardware onsite response within four hours if needed. Simplify your support experience and make HPE your first call for hardware or software questions.


Standard Care
Supports maintaining high level of server availability

Foundation Care NBD, three-year Packaged Support Service
HPE Foundation Care Next Business Day connects you to HPE during business hours for assistance on resolving issues – features next business day hardware onsite response if needed and software call back within two hours. Simplify your support experience and make HPE your first call for hardware or software questions.


Related Services
HPE ProLiant Server Hardware Installation
Provides for the basic hardware installation of Hewlett Packard Enterprise branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.


Parts and Materials
Hewlett Packard Enterprise will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product 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 HPE due to malfunction.

For more information
To learn more about HPE ProLiant servers, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner, or visit:

## QuickSpecs

### Pre-configured Models

#### Entry Model

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Entry Model</strong></td>
<td><strong>HPE ProLiant MicroServer Gen10 X3216 8GB-U 1TB 4LFF NHP SATA 200W PS</strong></td>
</tr>
<tr>
<td><strong>Entry Server</strong></td>
<td>870208-001</td>
</tr>
<tr>
<td><strong>Processor</strong></td>
<td>(1) AMD Opteron™ X3216 (1.6-3.0GHz/2-core/1MB/12-15W) Processor</td>
</tr>
<tr>
<td><strong>Cache Memory</strong></td>
<td>1MB (1 x 1MB) L2 cache</td>
</tr>
<tr>
<td><strong>Memory</strong></td>
<td>8GB (1 x 8GB) PC4-2400T DDR4 UDIMM</td>
</tr>
<tr>
<td><strong>Network Controller</strong></td>
<td>Embedded Broadcom BCM5720 Dual Port 1Gbe LOM</td>
</tr>
<tr>
<td><strong>Storage Controller</strong></td>
<td>Embedded Marvell 88SE9230 SATA controller</td>
</tr>
<tr>
<td><strong>Hard Drive</strong></td>
<td>1TB (1 x 1TB) LFF NHP SATA HDD</td>
</tr>
<tr>
<td><strong>Internal Storage</strong></td>
<td>4 LFF NHP SATA HDD cage</td>
</tr>
<tr>
<td><strong>Optical Drive Bay</strong></td>
<td>None ship standard</td>
</tr>
<tr>
<td><strong>PCI Slots</strong></td>
<td>2 standard (Low Profile) PCIe 3.0</td>
</tr>
<tr>
<td><strong>Power Supply</strong></td>
<td>200W Non-Hot Plug, Non-Redundant Power Supply</td>
</tr>
<tr>
<td><strong>Fans</strong></td>
<td>(1) Non-redundant system fan ships standard</td>
</tr>
<tr>
<td><strong>Operating System</strong></td>
<td>ClearOS preloaded</td>
</tr>
<tr>
<td><strong>Note:</strong></td>
<td>Total of 2 DIMM slots.</td>
</tr>
<tr>
<td><strong>Form Factor</strong></td>
<td>Ultra Micro Tower</td>
</tr>
<tr>
<td><strong>Warranty</strong></td>
<td>Server Warranty includes 1-Year Parts, 1-Year Labor, 1-Year Onsite support</td>
</tr>
<tr>
<td><strong>Operating System</strong></td>
<td>ClearOS, an easy to use OS with an application marketplace, allows you to</td>
</tr>
<tr>
<td><strong>Warranty</strong></td>
<td>build a fully functional server that is just right for you at no upfront</td>
</tr>
<tr>
<td><strong>Form Factor</strong></td>
<td>cost. To learn more on what you can do, please visit</td>
</tr>
<tr>
<td><strong>Warranty</strong></td>
<td><a href="http://www.hpe.com/servers/clearos">http://www.hpe.com/servers/clearos</a></td>
</tr>
</tbody>
</table>

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**Core Options**

**HPE Unique Options**

- **HPE MicroServer Gen10 SFF NHP SATA Converter Kit**
  
  **NOTE:** This kit works to accommodate your SFF NHP HDD into the LFF NHP drive cage.

- **HPE MicroServer Gen10 Slim SFF SATA Enablement Kit**
  
  **NOTE:** This kit works to accommodate your SFF NHP SSD into the media bay.

**HPE Memory**

- **Unbuffered with ECC DIMMs (UDIMMs)**
  
  - **HPE 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Unbuffered Standard Memory Kit**

  **NOTE:** Only the SKUs with X3418 and X3421 processors support memory speed up to 2400 MT/s.

  **NOTE:** SKUs with X3216 processor only support up to 1600 MT/s memory speed.

- **HPE 16GB (1x16GB) Dual Rank x8 DDR4-2400 CAS-17-17-17 Unbuffered Standard Memory Kit**

**HPE Optical Drives**

- **HP 9.5mm SATA DVD-ROM JackBlack Gen9 Optical Drive**

- **HP 9.5mm SATA DVD-RW JackBlack G9 Optical Drive**

**HPE Hard Drives**

- **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) Standard (MDL) Drives**

- **HPE 4TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD**

- **HPE 2TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD**

- **HPE 1TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD**

**6G SATA Non-Hot Plug LFF (3.5-inch) ETY HDD**

- **HPE 4TB SATA 6G Entry 5.9K LFF (3.5in) RW 1yr Wty HDD**

**6G SATA Non-Hot Plug LFF (3.5-inch) STY HDD**

- **HPE 3TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD**

**6G SATA Non-Hot Plug LFF (3.5-inch) ETY HDD**

- **HPE 2TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD**

- **HPE 1TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD**

- **HPE 500GB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD**

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


**HPE Networking**

- **HPE Ethernet 1Gb 2-port 332T Adapter**

- **HPE Ethernet 1Gb 4-port 331T Adapter**

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

**NOTE:** The HPE PCIe adapters listed here can only support Server OSes.
### Additional Options

#### HPE Security
- **HPE Trusted Platform Module 2.0 Kit**
  - **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.
  - **NOTE:** The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.

#### HPE Disk Backup
- HP RDX+ 500GB External Backup System
- HP RDX+ 1TB External Backup System
- HP RDX 2TB USB3.0 External Disk Backup System
- HPE RDX+ 3TB USB 3.0 External Disk Backup System
- HPE RDX+ External Docking System

#### HPE Rack Mount Consoles, KVM Switches, and Keyboards
- HPE USB Keyboard and Mouse
  - HPE USB US Keyboard/Mouse Kit

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**Note:** The above information is a representation of the text from the document. It is important to verify the accuracy of the data from the original source.
HPE ProLiant MicroServer Generation 10

Maximum Memory
32GB of maximum memory is available with the installation of 2 x 16 GB UDIMM Memory kits.

<table>
<thead>
<tr>
<th>Memory</th>
<th>1A</th>
<th>2B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>8 GB</td>
<td>8 GB</td>
</tr>
<tr>
<td></td>
<td>16 GB</td>
<td>16 GB</td>
</tr>
<tr>
<td>Optional</td>
<td>16 GB</td>
<td>8 GB</td>
</tr>
<tr>
<td></td>
<td>32 GB</td>
<td>16 GB</td>
</tr>
<tr>
<td>Maximum</td>
<td>32 GB</td>
<td>16 GB</td>
</tr>
</tbody>
</table>

Following are memory options available from HPE:

HPE Memory: Unbuffered with ECC DIMMs (UDIMMs)
- HPE 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Unbuffered Standard Memory Kit 862974-B21
- HPE 16GB (1x16GB) Dual Rank x8 DDR4-2400 CAS-17-17-17 Unbuffered Standard Memory Kit 862976-B21
## Storage

![Image of server with media bays]

- **Media bay for optional (1) optical drive or (1) SATA SSD for boot-drive**
- **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>5</td>
<td>Integrated SATA</td>
</tr>
<tr>
<td>SATA SSD</td>
<td>1</td>
<td>5</td>
<td>Integrated SATA</td>
</tr>
</tbody>
</table>

### Maximum Storage Capacity

<table>
<thead>
<tr>
<th>Internal</th>
<th>SATA</th>
<th>16.0TB (4 x 4TB)</th>
</tr>
</thead>
</table>
System Unit

**Dimensions** (H x W x D) (with feet)

9.25 x 9.06 x 10.00 in (23.5 x 23.0 x 25.4 cm)

**Weight** (approximate)

Maximum (Four drives, two DIMMs, optical drive or SSD and two expansion boards installed)

21.36 lb (9.70 kg)

Minimum (one hard drive and one DIMM installed, no media drive or expansion board installed)

14.32 lb (6.50 kg)

Input Requirements (per power supply)

- **Rated Line Voltage**
  - 100 V AC to 240 V AC

- **Rated Input Current**
  - 3.5 A (at 100 V AC)

- **Rated Input Frequency**
  - 50 to 60 Hz

- **Rated Input Power**
  - 200 W Power Supply
    - 244 W (at 115 V AC)

Power Specifications

To review typical system power ratings use the Power Advisor which is available via the online tool located at URL: https://www.hpe.com/us/en/integrated-systems/rack-power-cooling.html

**Power Supply Output** (per power supply)

- **Rated Steady-State Power**
  - 200 W Power Supply
    - 200 W (at 100 VAC),
    - 200 W (at 200 VAC)

- **Maximum Peak Power**
  - 200 W Power Supply
    - 200 W (at 100 VAC),
    - 200 W (at 200 VAC)

System Inlet Temperature

10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 20°C/hr (36°F/hr). The upper limit and rate of change may be limited by the type and number of options installed.

**NOTE:** System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F).

Relative Humidity (non-condensing)

- **Operating**
  - The unit shall be fully functional from 10% to 90% relative humidity, 28°C maximum web bulb temperature, (non-condensing) across the operating temperature range of 0°C to 40°C.

- **Non-operating**
  - 5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.

Altitude

- **Operating**
  - 3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).

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

Acoustic Noise

Listed are the declared A-Weighted sound power levels (LWAd) and
declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Lightly loaded</th>
<th>Heavily loaded</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU type and quantity</td>
<td>AMD Opteron™ processor at 15W cTDP x1</td>
<td>AMD Opteron™ processor at 35W cTDP x1</td>
</tr>
<tr>
<td>DIMM type, capacity and quantity</td>
<td>8 GB UDIMM 2400MT/s x1</td>
<td>8 GB UDIMM 2400MT/s x1</td>
</tr>
<tr>
<td>HDD type and quantity</td>
<td>2.5” SFF NHP HDD 500 GB x1</td>
<td>3.5” LFF NHP HDD 500 GB x4</td>
</tr>
<tr>
<td>Idle Sound Power Level in Bels LWAd</td>
<td>3.8 Bels</td>
<td>4.0 Bels</td>
</tr>
<tr>
<td>Operating Sound Power Level in Bels LWAd</td>
<td>3.8 Bels</td>
<td>4.0 Bels</td>
</tr>
<tr>
<td>Idle Sound Pressure Level LpAm</td>
<td>26.0 dBA</td>
<td>30.4 dBA</td>
</tr>
<tr>
<td>Operating Sound Pressure Level LpAm</td>
<td>26.0 dBA</td>
<td>31.0 dBA</td>
</tr>
</tbody>
</table>

Note: The listed sound levels apply to listed configurations. Additional options may result in increased sound levels. Please have your HPE Rep. refer to EMESC website for further technical details regarding the configurations listed above.

**NOTE:** Acoustics levels presented here accounts for test configuration only and acoustics level will vary depending on system configuration

**NOTE:** Values are subject to change without notification and are for reference only.

Environment-friendly Products and Approach

End-of-life Management and Recycling

Hewlett Packard Enterprise offers end-of-life product return, trade-in, and recycling programs, in many geographic areas, for our products. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard Enterprise web site. These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard.
Technical Specifications

Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.
# Summary of Changes

<table>
<thead>
<tr>
<th>Date</th>
<th>Version History</th>
<th>Action</th>
<th>Description of Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-Jun-2017</td>
<td>Version 1</td>
<td>Added</td>
<td>New QuickSpecs.</td>
</tr>
</tbody>
</table>

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

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