QuickSpecs

HP ProLiant DL380 Generation9 (Gen9)

Overview

The HP ProLiant DL380 Gen9 Server delivers the best performance and expandability in the HP 2P rack portfolio. Reliability, serviceability and near continuous availability, backed by a comprehensive warranty, make it ideal for any environment. Deploy the data center standard.

Front View - 8SFF Chassis with Optional Universal Media Bay shown

1. Quick removal access panel
2. Universal Media bay. 2 USB 2.0 and VGA standard (8SFF bay optional)
3. Optional Optical drive. Requires Universal Media bay
4. Optional 2 SFF HDD, blank shown. Requires Universal Media bay.
5. Drive Bay 2. Blank shown, 8SFF optional
6. 8 SFF Drive Cage Bay
7. Power On/Standby button and system power LED button
8. Health LED
9. NIC status
10. UID button
11. USB 3.0
12. Serial label pull tag

Rear view

1. PCI Slots (Slots 1-3 top to bottom, riser shipped standard)
2. PCI Slots (Slots 4-6 top to bottom, requires second riser card, and second processor)
3. Optional serial port
4. Optional rear 2 SFF HDD (supported in 24 SFF or 12 LFF front end)
5. HP Flexible Slot Power Supply bay 1 (800w shown)
6. Power supply Power LED
7. Power supply Power connection
8. HP Flexible Slot Power Supply bay 2 (800w shown)
9. Power supply Power LED
10. Power supply Power connection
11. VGA connector
Overview

12. Embedded 4 x 1GbE Network Adapter
13. Dedicated iLO connector
14. USB 3.0 connectors (2)
15. Unit ID LED
16. Optional FlexibleLOM ports (Shown: 4 x 1GbE)

Internal View

1. Fan cage shown with 6 standard Hot-plug fans (High Ambient temperature fans optional)
2. 2 Processors, heatsink showing, with HP Smart Socket Guide
3. Optional HP Smart Storage Battery
4. DDR4 DIMM slots. Shown fully populated in 24 slots (12 per processor)
5. MicroSD card slot
6. Internal USB 3.0 connector
7. Optional HP Flexible Smart Array or Smart HBA (H240ar shown)
8. (Under) Hot Plug redundant HP Flexible Slot Power supplies
9. Connection for second (optional) riser (Required second CPU)
10. Embedded 4x1GbE NIC
11. Primary PCIe riser, standard (Optional double wide GPU riser)
12. Optional Flexible LOM slot
13. X4 SATA ports (1 and 2)
NOTE: For more information regarding Intel Xeon processors, please see the following URL: http://www.intel.com/xeon

Intel® Xeon® processor E5-2600 v3 product family is designed to deliver the best combination of performance, built-in capabilities, and cost-effectiveness. One (or two) of the following Intel® Xeon® E5-2600 v3 processors based on the model

<table>
<thead>
<tr>
<th>Processor</th>
<th>CPU frequency</th>
<th>Cores</th>
<th>L3 Cache</th>
<th>Power</th>
<th>QPI</th>
<th>DDR4 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>E5-2699v3</td>
<td>2.3GHz</td>
<td>18</td>
<td>45MB</td>
<td>145W</td>
<td>9.6GT/s</td>
<td>2133</td>
</tr>
<tr>
<td>E5-2698v3</td>
<td>2.3GHz</td>
<td>16</td>
<td>40MB</td>
<td>135W</td>
<td>9.6GT/s</td>
<td>2133</td>
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<tr>
<td>E5-2697v3</td>
<td>2.6GHz</td>
<td>14</td>
<td>35MB</td>
<td>145W</td>
<td>9.6GT/s</td>
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</tr>
<tr>
<td>E5-2695v3</td>
<td>2.3GHz</td>
<td>14</td>
<td>35MB</td>
<td>120W</td>
<td>9.6GT/s</td>
<td>2133</td>
</tr>
<tr>
<td>E5-2690v3</td>
<td>2.6GHz</td>
<td>12</td>
<td>30MB</td>
<td>135W</td>
<td>9.6GT/s</td>
<td>2133</td>
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<tr>
<td>E5-2687Wv3</td>
<td>3.1GHz</td>
<td>10</td>
<td>25MB</td>
<td>160W</td>
<td>9.6GT/s</td>
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<tr>
<td>E5-2683v3</td>
<td>2.0GHz</td>
<td>14</td>
<td>35MB</td>
<td>120W</td>
<td>9.6GT/s</td>
<td>2133</td>
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<tr>
<td>E5-2680v3</td>
<td>2.5GHz</td>
<td>12</td>
<td>30MB</td>
<td>120W</td>
<td>9.6GT/s</td>
<td>2133</td>
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<tr>
<td>E5-2670v3</td>
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<td>30MB</td>
<td>120W</td>
<td>9.6GT/s</td>
<td>2133</td>
</tr>
<tr>
<td>E5-2667v3</td>
<td>3.2GHz</td>
<td>8</td>
<td>25MB</td>
<td>135W</td>
<td>9.6GT/s</td>
<td>2133</td>
</tr>
<tr>
<td>E5-2660v3</td>
<td>2.6GHz</td>
<td>10</td>
<td>25MB</td>
<td>105W</td>
<td>9.6GT/s</td>
<td>2133</td>
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<tr>
<td>E5-2650v3</td>
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<td>25MB</td>
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<td>E5-2650Lv3</td>
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<td>25MB</td>
<td>65W</td>
<td>9.6GT/s</td>
<td>2133</td>
</tr>
<tr>
<td>E5-2643v3</td>
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<td>20MB</td>
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<td>2133</td>
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<td>E5-2637v3</td>
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<td>15MB</td>
<td>135W</td>
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<td>E5-2630v3</td>
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<td>20MB</td>
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<td>8.0GT/s</td>
<td>1866</td>
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<tr>
<td>E5-2630Lv3</td>
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<td>25MB</td>
<td>55W</td>
<td>8.0GT/s</td>
<td>1866</td>
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<td>105W</td>
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<td>1866</td>
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<tr>
<td>E5-2620v3</td>
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<td>15MB</td>
<td>85W</td>
<td>8.0GT/s</td>
<td>1866</td>
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<td>E5-2609v3</td>
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<td>15MB</td>
<td>85W</td>
<td>8.0GT/s</td>
<td>1600</td>
</tr>
<tr>
<td>E5-2603v3</td>
<td>1.6GHz</td>
<td>6</td>
<td>15MB</td>
<td>85W</td>
<td>6.4GT/s</td>
<td>1600</td>
</tr>
</tbody>
</table>

Note that all processors above 120W use a high efficiency Heatsink. Doublewide PCIe cards are only supported with this Heatsink. For processors with a standard Heatsink that require double wide cards we would need to leverage the Graphics Enablement kit (719082-B21)

Chipset

Intel® C610 Series Chipset
Intel® E5-2600v3 Processor Family

NOTE: For more information regarding Intel chipsets, please see the following URL: http://www.intel.com/products/server/chipsets/.

On System Management Chipset

HP iLO (Firmware HP iLO4 2.0) 4GB NAND

NOTE: 1GB USB user space configurable via UEFI and accessible via iLO. Read and learn more in the iLO QuickSpecs.

Memory

Type:
HP SmartMemory
DDR4 Registered (RDIMM) or Load Reduced (LRDIMM)

DIMM Slots Available 24 (12 DIMM slots per processor, 4 channels per processor, 3 DIMMs per channel)

Maximum Capacity (LRDIMM) 768GB (24 x 32GB LRDIMM @2133MHz)

Maximum Capacity (RDIMM) 384GB (24 x 16GB RDIMM @2133MHz)
### Memory Protection
- **Advanced ECC**: Uses single device data correction to detect and correct single and all multibit error that occurs within a single DRAM chip.
- **Online spare**: Memory online spare mode detects a rank that is degrading and switches operation to the spare rank.

### Expansion Slots

#### Primary Riser (Standard)

<table>
<thead>
<tr>
<th>Expansion Slots #</th>
<th>Technology</th>
<th>Bus Width</th>
<th>Connector Width</th>
<th>Bus Number</th>
<th>Form Factor</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PCIe 3.0</td>
<td>x16</td>
<td>x8</td>
<td>7</td>
<td>Full-height, half-length Slot</td>
<td>Proc 1</td>
</tr>
<tr>
<td>2</td>
<td>PCIe 3.0</td>
<td>x16</td>
<td>x8</td>
<td>10</td>
<td>Full-height, half-length Slot</td>
<td>Proc 1</td>
</tr>
<tr>
<td>3</td>
<td>PCIe 3.0</td>
<td>x8</td>
<td>x8</td>
<td>13</td>
<td>Half Length, Full Height Slot</td>
<td>Chipset</td>
</tr>
</tbody>
</table>

*Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
**Indicates the number of physical electrical lanes running to the connector.

**NOTE:** All slots support up to 150w PCIe cards, but an additional Power Cord Option is required (PN 669777-B21). See Option Section below for offering.

#### Slot 2 PCIe Riser (Optional 3-slot) 719073-B21

<table>
<thead>
<tr>
<th>Expansion Slots #</th>
<th>Technology</th>
<th>Bus Width</th>
<th>Connector Width</th>
<th>Bus Number</th>
<th>Device Number</th>
<th>Form Factor</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>PCIe 3.0</td>
<td>x16</td>
<td>x16</td>
<td>16</td>
<td></td>
<td>Full Height, Full Length Slot</td>
<td>Proc 2</td>
</tr>
<tr>
<td>5</td>
<td>PCIe 3.0</td>
<td>x16</td>
<td>x16</td>
<td>20</td>
<td></td>
<td>Full Height, Full Length Slot</td>
<td>Proc 2</td>
</tr>
<tr>
<td>6</td>
<td>PCIe 3.0</td>
<td>x8</td>
<td>x8</td>
<td>23</td>
<td></td>
<td>Full-height, half-length Slot</td>
<td>Proc 2</td>
</tr>
</tbody>
</table>

*Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
**Indicates the number of physical electrical lanes running to the connector.

**NOTE:** When populating the second optional riser slot, the second processor must be installed.

**NOTE:** All slots support up to 150w PCIe cards, but an additional Power Cord Option is required (669777-B21). See Option Section below for offering.

#### Slot 1 PCIe Riser (Optional 2-slot) 719076-B21

<table>
<thead>
<tr>
<th>Expansion Slots #</th>
<th>Technology</th>
<th>Bus Width</th>
<th>Connector Width</th>
<th>Bus Number</th>
<th>Device Number</th>
<th>Form Factor</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>PCIe 3.0</td>
<td>x16</td>
<td>x16</td>
<td>16</td>
<td></td>
<td>Full Height, Full Length Slot</td>
<td>Proc 2</td>
</tr>
<tr>
<td>5</td>
<td>PCIe 3.0</td>
<td>x8</td>
<td>x8</td>
<td>16</td>
<td></td>
<td>Full-height, half-length Slot</td>
<td>Proc 2</td>
</tr>
</tbody>
</table>

*Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
**Indicates the number of physical electrical lanes running to the connector.

**NOTE:** When populating the second optional riser slot, the second processor must be installed.

**NOTE:** All slots support up to 150w PCIe cards, but an additional Power Cord Option is required (669777-B21). See Option Section below for offering.

### Storage Controller

**Entry Models**
- HP Dynamic Smart Array B140i Controller

**NOTE:** The embedded B140i controller will operate in UEFI only mode. For legacy support an additional controller will be needed, and for Factory Integrated orders please also select the Legacy mode settings part, 758959-B22.

**Base Models**
- HP Dynamic Smart Array B140i Controller
- HP Flexible Smart Array P440ar/2G FIO Controller
- HP Flexible Smart Array P840ar/4GB

**Performance Models**
- HP Dynamic Smart Array B140i Controller
- HP Flexible Smart Array P440ar/2GB

### Internal Storage Devices

- **Optical Drive**: Ships standard in Performance Models
One of the following depending on Model

### Hard Drives

Optional: DVD-ROM, DVD-RW

- None ship standard
- 8 SFF with optional Universal Media bay or 8SFF bay options
- 24 SFF plus optional 2 SFF drives rear
- 12 LFF plus optional 3 LFF drives rear
- 4 LFF drive bays total

**NOTE:** The Universal Media Bay (724865-B21) not available with the LFF Models or the 24SFF Model, and can only be populated in Bay1.

**NOTE:** The 8SFF can be upgraded with a drive cage to 16 or 24 SFF with field upgrades.

**NOTE:** The 4LFF Model cannot be upgraded to 12LFF in the field.

**NOTE:** All Pre-configured Models come with an embedded 10-Port SATA controller. Optional HP Flexible Smart Array and Smart SAS HBA Controllers can be added.

**NOTE:** Only the 24SFF and 12LFF Models support rear drives.

**NOTE:** Universal media bay is not supported in the LFF configurations. Optical support is offered via USB DVD-RW Drive (701498-B21)

### Maximum Internal Storage

<table>
<thead>
<tr>
<th>Type</th>
<th>CAPACITY</th>
<th>CONFIGURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot Plug SFF SAS</td>
<td>31.2TB</td>
<td>24+2 x 1.2TB (with optional rear SFF drive cage)</td>
</tr>
<tr>
<td>Hot Plug SFF SATA</td>
<td>26.0TB</td>
<td>24+2 x 1TB (with optional SFF drive cage)</td>
</tr>
<tr>
<td>Hot Plug LFF SAS</td>
<td>90.0TB</td>
<td>12+3 x 6TB (with optional LFF drive cage)</td>
</tr>
<tr>
<td>Hot Plug LFF SATA</td>
<td>90.0TB</td>
<td>12+3 x 6TB (with optional LFF drive cage)</td>
</tr>
<tr>
<td>Hot Plug SFF SAS SSD</td>
<td>31.2TB</td>
<td>24+2 x 1.6TB (with optional rear SFF drive cage)</td>
</tr>
<tr>
<td>Hot Plug LFF SATA SSD</td>
<td>24.0TB</td>
<td>12+3 x 1.6TB (with optional rear LFF drive cage)</td>
</tr>
</tbody>
</table>

### Power Supply

HP 500W Flex Slot Platinum Hot Plug Power Supply
HP 800W Flex Slot Platinum Hot Plug Power Supply
HP 1400W Flex Slot Platinum Plus Hot Plug Power Supply

**HP Flexible Slot (Flex Slot) Power Supplies share a common electrical and physical design that allows for hot plug, tool-less installation into HP ProLiant Gen9 Performance Servers. Flex Slot power supplies are certified for high-efficiency operation and offer multiple power output options, allowing users to “right-size” a power supply for specific server configurations. This flexibility helps to reduce power waste, lower overall energy costs, and avoid “trapped” power capacity in the data center.**

All pre-configured servers ship with a standard 6-foot IEC C-13/C-14 jumper cord (A0K02A). This jumper cord is also included with each standard AC power supply option kit. If a different power cord is required, please check the ProLiant Power Cables web page.

To review the power requirements for your selected system, please use the HP Power Advisor Tool located at www.hp.com/go/hppoweradvisor.

Power specifications and technical content for all HP Server power supplies can be found at www.hp.com/go/proliant/powersupply.

**NOTE:** Mixing of power supplies in the same server is not supported. All power supplies must be of the same input voltage, output rating, and efficiency rating. If non-matching power supplies are installed, you may receive an error message and/or experience operational issues with your server.

### System Fans

One of the following depending on Model

**2P model**

**NOTE:** 1P models typically ship with 4 standard fans. The second processor option kit contains 2 additional fans.

**NOTE:** High Performance Temperature Fan Kit is available to meet ambient temperature environments (719079-B21)

**NOTE:** the 12LFF and 24SFF models ship with 6 High Performance fans as standard

**NOTE:** High Performance Temperature Fan Kit is required for GPU support.

**NOTE:** Additional HP 12Gb SAS Expander Card (727250-B21) and the 8SFF Bay kit (719067-B21) will ship with 6 High efficiency fans
### Interfaces

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial</td>
<td>optional</td>
</tr>
<tr>
<td>Video</td>
<td>2 (1 front, optional via Universal Media Bay, 724865-B21), 1 back not active simultaneously</td>
</tr>
<tr>
<td>FlexibleLOM Network Ports</td>
<td>4 x 1Gb ports shipping standard with optional FlexibleLOM</td>
</tr>
<tr>
<td>HP iLO Remote Management Network Port</td>
<td>1 Gb Dedicated</td>
</tr>
<tr>
<td>Micro SD Slot</td>
<td>1 Micro SD</td>
</tr>
<tr>
<td><strong>NOTE:</strong> Micro SD slot is not a hot-pluggable device. Customers should not attempt to plug an SD card into the SD slot while the server is powered.</td>
<td></td>
</tr>
<tr>
<td>USB 3.0</td>
<td>Up to 5 total: 1 front, 2 rear, 2 internal (secure), 2 optional USB 2.0 front via Universal Media Bay</td>
</tr>
<tr>
<td>SID (Systems Insight Display)</td>
<td>Optional</td>
</tr>
<tr>
<td><strong>NOTE:</strong> The SID does not ship standard. It is available as a Factory Integrated option or as a field upgrade (768900-B21)</td>
<td></td>
</tr>
</tbody>
</table>

### Operating Systems and Virtualization Software Support for ProLiant Servers

- Microsoft Windows Server
- Canonical Ubuntu
- Red Hat Enterprise Linux (RHEL)
- SUSE Linux Enterprise Server (SLES)
- Oracle Solaris
- VMware
- Citrix XenServer

**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](http://www.hp.com/go/ossupport) and our driver download page: [http://www.hp.com/support/DL380Gen9](http://www.hp.com/support/DL380Gen9)

### Upgradeability

- Upgradeable to two processors (36 Cores)

**NOTE:** Processor upgrade available from Intel® Xeon® Processors E5-2600v3. Please contact HP Technology Sales ([http://www.hp.com/support](http://www.hp.com/support)), your local HP Re-seller.

- Up to 24 DIMM slots available for higher Memory capacity
- FlexibleLOM connector for 1 Gigabit or 10 Gigabit networking options
- HP Flexible Smart Array or Smart HBA Controllers
- Embedded 10-Port SATA, B140i as standard
- Optional 3 slot riser (x16, x16, x8), or 2 slot (x16, x8)

**NOTE:** To take advantage of the additional 3 PCI slot upgrade, the second processor must be installed.

- Redundant Power Supply
- Optical Drive supported via Universal Media Bay

**NOTE:** The Universal Media bay provides front VGA and 2xUSB, plus ability to add 2SFF and Optical.

**NOTE:** Universal Media bay only available with 8 or 8+8SFF models & can be populated in Bay1 only.

- HP Legacy Mode (FIO only, 758959-B22)

**NOTE:** UEFI is the default model for Factory Integrated and Preconfigured models. Can change default to legacy via Factory Integration.

### Industry Standard Compliance

- ACPI 2.0b Compliant
- PCIe 3.0 Compliant
- PXE Support
- WOL Support
- Microsoft® Logo certifications
- USB 3.0 Support
- USB 2.0 Support

**NOTE:** This support is on the optional Universal Media Bay

- Energy Star
- ASHRAE A3/A4

For details on configurations supporting ASHRAE A3/4 please see: [www.hp.com/servers/ASHRAE](http://www.hp.com/servers/ASHRAE)

- UEFI (Unified Extensible Firmware Interface Forum)

**NOTE:** UEFI is the default for the DL380 Gen9. Legacy model can be selected in the field, or as a Factory Integration option (758959-B22)
QuickSpecs

HP ProLiant DL380 Generation 9 (Gen9)

Standard Features

**Graphics**
Integrated Matrox G200eH2 video standard with 16MB of Video RAM

- 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)

**HP Server UEFI/Legacy ROM**
Unified Extensible Firmware Interface (UEFI) is an industry standard that provides better manageability and more secured configuration while interacting with your server at boot time. HP ProLiant Gen9 platform defaults to UEFI and can be factory or field configured for Legacy BIOS Boot Mode.

**NOTE:** The UEFI System Utilities function is analogous to the HP ROM-Based Setup Utility (RBSU) of legacy BIOS. For more information, please visit [http://www.hp.com/go/proliantuefi/docs](http://www.hp.com/go/proliantuefi/docs).

UEFI enables numerous new capabilities specific to HP ProLiant servers such as:

- Secure Boot
- Operating system specific functionality
- Support for > 2.2 TB (using GPT) boot drives
- USB 3.0 Stack
- Embedded UEFI Shell
- Mass Configuration Deployment Tool - HP RESTful API.
- PXE boot support for IPv6 networks
- Boot support for option cards that only support a UEFI option ROM

For more information please visit [http://www.hp.com/go/proliant/uefi](http://www.hp.com/go/proliant/uefi)

**NOTE:** For UEFI Boot Mode, boot environment and OS image installations should be configured properly to support UEFI.

**NOTE:** Legacy model can be enabled with Factory Integrated models (758959-B22). All standard skus ship with UEFI as default.

**Form Factor**
One of the following depending on Model

- 2U Rack form factor
- 8 SFF & 24SFF Drive Bay Version: 3.44 x 17.54 x 26.75 in (8.73 x 44.55 x 67.94 cm)
- 4 LFF & 12LFF Drive Bay Version: 3.44 x 17.54 x 28.75 in (8.73 x 44.55 x 73.02 cm)

**NOTE:** Dimensions without bezel

**Embedded Management**

**HP Integrated Lights-Out (HP iLO)**
Monitor your servers for ongoing management, service alerting, reporting and remote management with iLO. Learn more at [www.hp.com/go/ilo](http://www.hp.com/go/ilo).

**UEFI**
Configure and boot your servers securely with industry standard Unified Extensible Firmware Interface (UEFI). Learn more at [www.hp.com/go/ProLiant/uefi](http://www.hp.com/go/ProLiant/uefi).

**HP RESTful API**
RESTful API is an application programming interface. RESTful Web Service API served by iLO’s web server [www.hp.com/go/restfulapi](http://www.hp.com/go/restfulapi).

**Intelligent Provisioning**
Provision servers by discovering and deploying 1 to few servers with Intelligent Provisioning. Learn more at [www.hp.com/go/intelligentprovisioning](http://www.hp.com/go/intelligentprovisioning).
### QuickSpecs

**HP ProLiant DL380 Generation 9 (Gen9)**

## Standard Features

<table>
<thead>
<tr>
<th>Embedded Remote Support</th>
<th>HP’s embedded remote support, used with Insight Online direct connect or HP Insight Remote Support, allows HP ProLiant servers to transmit hardware events directly to HP or an HP Authorized Partner for automated phone home support. Learn more at <a href="http://www.hp.com/go/insightonline/info">www.hp.com/go/insightonline/info</a></th>
</tr>
</thead>
</table>

### Server Utilities

<table>
<thead>
<tr>
<th>HP Smart Update</th>
<th>Optimize firmware and driver updates with HP Smart Update solutions. Learn more at <a href="http://www.hp.com/go/smartupdate">www.hp.com/go/smartupdate</a>.</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP Systems Insight Manager (HP SIM)</td>
<td>HP SIM allows you to monitor the health of your HP ProLiant Servers and HP Integrity Servers, and also provides you with basic support for non-HP servers. HP SIM also integrates with HP SUM to provide quick and seamless firmware updates. Learn more at <a href="http://www.hp.com/go/sim">www.hp.com/go/sim</a>.</td>
</tr>
<tr>
<td>Scripting Tool Kit and Windows PowerShell</td>
<td>Provision 1 to many servers using your own scripts to discover and deploy them with HP Scripting Tool Kit for Windows and Linux or HP Scripting Tools for Windows PowerShell. Learn more at <a href="http://www.hp.com/go/ProLiantSTK">www.hp.com/go/ProLiantSTK</a> or <a href="http://www.hp.com/go/powershell">www.hp.com/go/powershell</a>.</td>
</tr>
<tr>
<td>HP RESTful Interface Tool</td>
<td>HP RESTful Interface tool is a scripting tool to provision servers using RESTful API Interface to discover and deploy servers at scale. Learn more at <a href="http://www.hp.com/go/restfulapi">www.hp.com/go/restfulapi</a>.</td>
</tr>
<tr>
<td>HP iLO Mobile Application</td>
<td>Enables the ability to access, deploy, and manage your server anytime from anywhere from select smartphones and mobile devices. For additional information please visit: <a href="http://www.hp.com/go/ilo/mobileapp">www.hp.com/go/ilo/mobileapp</a>.</td>
</tr>
<tr>
<td>HP Insight Online</td>
<td>HP Insight Online, available at no additional cost as part of your HP warranty, Care Pack or contractual support agreement with HP, is a personalized dashboard for simplified tracking of IT operations and support information from anywhere, anytime. Learn more at <a href="http://www.hp.com/go/insightonline/info">www.hp.com/go/insightonline/info</a>.</td>
</tr>
</tbody>
</table>

## Security

<table>
<thead>
<tr>
<th>Power-on password</th>
<th>Security features include:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial interface control</td>
<td>Power-on password</td>
</tr>
<tr>
<td>Administrator’s password</td>
<td>Serial interface control</td>
</tr>
<tr>
<td>UEFI</td>
<td>Administrator’s password</td>
</tr>
<tr>
<td>iLO 4 (Integrated Lights-Out 4) has 12 customizable user accounts and SSL encryption</td>
<td>UEFI</td>
</tr>
<tr>
<td>Integrated Lights-Out can be disabled via a Global Setting</td>
<td>iLO 4 (Integrated Lights-Out 4) has 12 customizable user accounts and SSL encryption</td>
</tr>
<tr>
<td>iLO Advanced supports directory services integration</td>
<td>Integrated Lights-Out can be disabled via a Global Setting</td>
</tr>
<tr>
<td>TPM 1.2</td>
<td>iLO Advanced supports directory services integration</td>
</tr>
</tbody>
</table>

## Warranty

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through 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 3-Year Parts, 3-Year Labor, 3-Year Onsite 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

### Embedded Management

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>iLO Advanced</strong></td>
<td>HP iLO Advanced licenses offer smart remote functionality without compromise, for all HP ProLiant servers. The license includes the full integrated remote console, virtual keyboard, video, and mouse (KVM), multi-user collaboration, console record and replay, and GUI-based and scripted virtual media and virtual folders. You can also activate the enhanced security and power management functionality. Learn more about HP iLO Advanced at <a href="http://www.hp.com/go/iloadvanced">www.hp.com/go/iloadvanced</a>.</td>
</tr>
</tbody>
</table>

### Server Management

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HP Insight Control</strong></td>
<td>HP Insight Control, lets you deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. For more information, see <a href="http://www.hp.com/go/insightcontrol">http://www.hp.com/go/insightcontrol</a>.</td>
</tr>
<tr>
<td><strong>HP OneView</strong></td>
<td>Powerful converged management of servers, storage, and network for IT service automation and infrastructure simplicity, see <a href="http://www.hp.com/go/oneview">www.hp.com/go/oneview</a>.</td>
</tr>
<tr>
<td><strong>HP Insight Cluster Management Utility (CMU)</strong></td>
<td>HP Insight Cluster Management Utility is a hyperscale-optimized management framework that includes software for the provisioning, control, performance management and monitoring of groups of nodes and infrastructure. Learn more at <a href="http://www.hp.com/go/cmu">www.hp.com/go/cmu</a>.</td>
</tr>
</tbody>
</table>

### Rack and Power Infrastructure

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HP Rack and Power Infrastructure</strong></td>
<td>HP Rack and Power Infrastructure products and services create highly efficient and intelligent solutions for existing or new IT data centers. HP Rack and Power infrastructure solutions – rack infrastructure, power protection and management, performance optimized data centers (PODs) – are the foundation you are looking for to help secure your long-term IT success. These products are designed to help you react to changes in the industry. They deliver efficient, easy-to-use capabilities to manage, monitor, deploy and provision infrastructure from entry to enterprise. As an industry leader, HP is uniquely positioned to address the key concerns of power, cooling, cable management and system access. Learn more at <a href="http://www.hp.com">HP Rack and Power Infrastructure</a>.</td>
</tr>
</tbody>
</table>

### High Performance Clusters

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
</table>

### HPC Interconnects

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NOTE:</strong></td>
<td>High Performance Computing (HPC) interconnect technologies are available for this server under the HP Cluster Platform product portfolio. These high-speed interconnects are fully supported by HP when they are part of these configure to order clusters. Solutions can be defined with a lot of flexibility with the help of configuration tools. Please visit the following URL to configure HPC Clusters with InfiniBand Interconnects: <a href="http://www.hp.com/techservers/clusters/ucp/index.html">http://www.hp.com/techservers/clusters/ucp/index.html</a>.</td>
</tr>
</tbody>
</table>

### Storage Software

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data Protection and Recovery Software</strong></td>
<td>Whether you're a large enterprise or a smaller business, HP data protection and recovery software will cost-effectively protect you against disaster and ensure business continuity.</td>
</tr>
<tr>
<td><strong>Data Archive and Migration Software</strong></td>
<td>HP's storage software enables you to comply with data retention and retrieval requirements, improve application performance, and reduce costs by efficiently migrating infrequently accessed or less valuable data to lower cost storage.</td>
</tr>
<tr>
<td><strong>Storage Resource Management Software (SRM)</strong></td>
<td>HP's storage resource management software reduces operational costs and provides the command and control foundation you need to efficiently manage and visualize your physical and virtual environments.</td>
</tr>
<tr>
<td><strong>Data Replication Software</strong></td>
<td>HP offers array-based and host-based replication software for use in disaster recovery, testing, application development and reporting.</td>
</tr>
</tbody>
</table>

Learn more at [HP Rack and Power Infrastructure](http://www.hp.com).
Optional Features

- **Storage Device Management Software**
  Maximize your investment in HP storage and networking with software that enables hardware-specific configuration, performance tuning and connectivity management.

- **HP StoreVirtual VSA**
  With HP StoreVirtual VSA you can use the power of virtualization to turn a set of heterogeneous and disconnected physical disk drives in your servers and storage devices into a single pool of logical storage capacity.

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

---

**One Config Simple (SCE)**

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**

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 Support recommendation**

**HP Proactive Care** - Call to Repair commitment, 24x7 coverage, three year Care Pack Service

Prevent problems and stabilize IT by utilizing secure, real-time, predictive analytics and proactive consultations when your products are connected to HP. Includes enhanced escalation management and the industry's highest level of hardware support commitment – hardware will be returned to operating conditions within six (6) hours after you open your case. Comes with collaborative software call management with two hour call back to reduce troubleshooting.

As a leading global support provider for Microsoft, Red Hat, VMware, SUSE and other operating systems, HP is able to simplify and shorten your time to resolution with one call for hardware or software questions. [http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855ENW.pdf](http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855ENW.pdf)

**HP ProLiant Server Hardware Installation**

Help ensure your new HP ProLiant hardware is installed smoothly, efficiently and with minimal disruption to your IT and business operations. [http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf](http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf)

**Standard Support recommendation**

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

This service helps prevent problems and stabilize IT by utilizing secure, real-time, predictive analytics and proactive consultations when your products are connected to HP. Includes four hour response for hardware, and collaborative call management for software with a two hour callback. [http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855ENW.pdf](http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855ENW.pdf)

**HP ProLiant ML350 Hardware Installation**

Help ensure your new HP ProLiant hardware is installed smoothly, efficiently and with minimal disruption to your IT and business operations. [http://h20195.www2.hp.com/v2/GetPDF.aspx/5981-9356EN.pdf](http://h20195.www2.hp.com/v2/GetPDF.aspx/5981-9356EN.pdf)

**Related Services**

**Data Center Platform Consulting Services**

These services help modernize key systems and leverage new technology to support a changing business climate and prepare you for the new style of IT. HP understands the needs of the data center of the future and will serve as your guide for the journey. [www.hp.com/services/consulting](http://www.hp.com/services/consulting)

**Data Privacy Services**

Protect your data through better media management. HP Data privacy services help manage and protect sensitive data. [www.hp.com/services/dataprivacy](http://www.hp.com/services/dataprivacy)

**Factory Express for Servers and storage**

HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Choose how your factory solutions are built, tested, integrated, shipped and deployed. [http://www.hp.com/go/factory-express](http://www.hp.com/go/factory-express)

**HP Foundation Care**

Hardware and software support services provide easy connection to HP to resolve support issues quickly. Includes collaborative call management for industry leading software; full software support may also be purchased, giving you one place to call for help. [www.hp.com/services/foundationcare](http://www.hp.com/services/foundationcare)

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

**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.
QuickSpecs

Pre-configured Models

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

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

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

3. If you desire a custom configuration please see "Configuration Information - Factory Integrated Models" section of this QuickSpecs.

NOTE: All Pre-configured Models come populated with some hard drive blanks installed. Should the customer need additional hard drive blanks, they can order more using either P/N 666987-B21: HP SFF Hard Drive Blank or P/N 666986-B21: HP LFF Hard Drive Blank.

NOTE: All pre-configured servers ship with a standard 6-foot IEC C-13/C-14 jumper cord (A0K02A). This jumper cord is also included with each standard AC power supply option kit. If a different power cord is required, please check the ProLiant Power Cables web page.

Caution: HP recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.

---

**Entry Models**

<table>
<thead>
<tr>
<th>SKU Number</th>
<th>Model Name</th>
<th>Processor</th>
<th>Number of Processors</th>
<th>Memory</th>
<th>Network Controller</th>
<th>Storage Controller</th>
<th>Hard Drive</th>
<th>Internal Storage</th>
<th>Optical Drive Bay</th>
<th>PCI-Express Slots</th>
<th>Power Supply</th>
<th>Fans</th>
<th>Management</th>
<th>Form Factor</th>
<th>Warranty</th>
</tr>
</thead>
<tbody>
<tr>
<td>766342-B21</td>
<td>HP ProLiant DL380 Gen9 E5-2609v3 1P 8GB-R B140i 4LFF SATA 500W PS Entry Server</td>
<td>Intel® Xeon® E5-2609v3</td>
<td>One</td>
<td>8GB (1x8GB Registered DIMMs, 2133 MHz) NOTE: with the E5-2609v3 this memory DIMM will only operate at 1600MHz</td>
<td>HP Embedded 1Gb Ethernet 4-port 331i Adapter</td>
<td>HP Dynamic Smart Array B140i</td>
<td>None ship standard</td>
<td>4 LFF HDD Bays</td>
<td>Optional via HP Mobile USB DVDRW Drive (701498-B21)</td>
<td>3 PCIe slots (+3 PCI slots available with upgrade option, second processor required)</td>
<td>(1) HP 500W Flex Slot Platinum Power Supply</td>
<td>4 hot plug fans, redundant</td>
<td>iLO Management (standard), Intelligent Provisioning (standard), iLO Advanced (optional), Insight Control (optional), HP OneView (optional)</td>
<td>Rack (2U), HP Easy Install Rails</td>
<td>Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response</td>
</tr>
<tr>
<td>752686-B21</td>
<td>HP ProLiant DL380 Gen9 E5-2609v3 1P 8GB-R B140i 8SFF SATA 500W PS Entry Server</td>
<td>Intel® Xeon® E5-2609v3</td>
<td>One</td>
<td>8GB (1x8GB Registered DIMMs, 2133 MHz) NOTE: with the E5-2609v3 this memory DIMM will only operate at 1600MHz</td>
<td></td>
<td></td>
<td>None ship standard; includes 10 LFF hard drive blanks</td>
<td>8 SFF HDD Bays</td>
<td>Optional via Universal Media Bay</td>
<td></td>
<td>(2) HP 800W Flex Slot Platinum Power Supply</td>
<td>4 hot plug fans, redundant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>752688-B21</td>
<td>HP ProLiant DL380 Gen9 E5-2620v3 1P 16GB-R P440ar 12LFF 2x800W PS Base Server</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>HP Flexible Smart Array P440/4G Controller</td>
<td>None ship standard</td>
<td>12 LFF HDD Bays</td>
<td>Optional via HP Mobile USB DVDRW Drive (701498-B21)</td>
<td></td>
<td>(1) HP 500W Flex Slot Platinum Power Supply</td>
<td>6 hot plug high performance temperature fans, redundant</td>
<td>iLO Management (standard), Intelligent Provisioning (standard), iLO Advanced (optional), Insight Control (optional), HP OneView (optional)</td>
<td>Rack (2U), HP Easy Install Rails</td>
<td></td>
</tr>
<tr>
<td>752687-B21</td>
<td>HP ProLiant DL380 Gen9 E5-2620v3 1P 16GB-R P440ar 8SFF 500W PS Base Server</td>
<td>Intel® Xeon® E5-2620v3</td>
<td>One</td>
<td>16GB (1x16GB Registered DIMMs, 2133 MHz) NOTE: with the E5-2620v3 this memory DIMM will only operate at 1866MHz</td>
<td></td>
<td>HP Flexible Smart Array P440ar/2GB</td>
<td>None ship standard</td>
<td>8 SFF HDD Bays</td>
<td>Optional via Universal Media Bay</td>
<td></td>
<td></td>
<td>4 hot plug fans, redundant</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## QuickSpecs

### HP ProLiant DL380 Generation9 (Gen9) Pre-configured Models

### Performance Models

<table>
<thead>
<tr>
<th>SKU Number</th>
<th>752689-B21</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model Name</strong></td>
<td>HP ProLiant DL380 Gen9 E5-2650v3 2P 32GB-R P440ar 8SFF 2x10Gb 2x800W Perf Server</td>
</tr>
<tr>
<td><strong>Processor</strong></td>
<td>Intel® Xeon® E5-2650v3</td>
</tr>
<tr>
<td><strong>Number of Processors</strong></td>
<td>Two</td>
</tr>
<tr>
<td><strong>Memory</strong></td>
<td>32GB (2x16GB Registered DIMMs, 2133 MHz)</td>
</tr>
<tr>
<td><strong>Network Controller</strong></td>
<td>HP Embedded 4x1Gb, plus 2x10Gb-T Flexible LOM</td>
</tr>
<tr>
<td><strong>Storage Controller</strong></td>
<td>HP Flexible Smart Array P440ar/2GB</td>
</tr>
<tr>
<td><strong>Hard Drive</strong></td>
<td>None ship standard</td>
</tr>
<tr>
<td><strong>Internal Storage</strong></td>
<td>8 SFF HDD Bays</td>
</tr>
<tr>
<td><strong>Optical Drive</strong></td>
<td>HP Half-Height SATA DVD-RW Optical Drive</td>
</tr>
<tr>
<td><strong>PCI-Express Slots</strong></td>
<td>6 PCIe slots (includes second riser slot upgrade option)</td>
</tr>
<tr>
<td><strong>Power Supply</strong></td>
<td>(2) HP 800W Flex Slot Platinum Power Supply</td>
</tr>
<tr>
<td><strong>Fans</strong></td>
<td>4 hot plug fans, redundant</td>
</tr>
<tr>
<td><strong>Management</strong></td>
<td>iLO Management (standard), Intelligent Provisioning (standard), iLO Advanced (standard), HP OneView (optional)</td>
</tr>
<tr>
<td><strong>Energy Star</strong></td>
<td>Meets Energy Star requirements</td>
</tr>
<tr>
<td><strong>Form Factor</strong></td>
<td>Rack (2U), HP Easy Install Rails with CMA</td>
</tr>
<tr>
<td><strong>Warranty</strong></td>
<td>Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response</td>
</tr>
</tbody>
</table>

*Note that UEFI is the standard default for all Predefined models*
### Step 1: Base Configuration (choose one of the following configurable models)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SKU Number</td>
<td>719064-B21</td>
<td>767032-B21</td>
<td>719061-B21</td>
</tr>
<tr>
<td>Processor</td>
<td>2 (optional) x HP Smart Socket Guides</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIMM Slots</td>
<td>24 DIMM slots for RDIMM, LRDIMM DDR4 Memory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage Controller</td>
<td>HP Dynamic Smart Array B140i, plus optional HP Flexible Smart Array or Smart HBA controller</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCIe</td>
<td>3 PCIe slots (+3 PCI slots available with upgrade option, second processor required)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive Cage</td>
<td>8SFF Hot Plug</td>
<td>24SFF Hot Plug</td>
<td>12LFF Hot Plug</td>
</tr>
<tr>
<td>Network Controller</td>
<td>HP Embedded 1Gb Ethernet 4-port 331i Adapter, plus optional HP Flexible LOM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fans</td>
<td>4 hot plug fans, redundant</td>
<td>6 hot plug high performance temperature fans, redundant</td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td>iLO Management (standard), Intelligent Provisioning (standard), iLO Advanced (optional), Insight Control (optional), HP OneView (optional)</td>
<td>iLO Management (standard), Intelligent Provisioning (standard), iLO Advanced (optional), Insight Control (optional), HP OneView (optional)</td>
<td></td>
</tr>
<tr>
<td>USB</td>
<td>1 front, 1 internal, 2 rear, (2 front optional)</td>
<td>1 front, 1 internal, 2 rear</td>
<td></td>
</tr>
<tr>
<td>Ears</td>
<td>HP Quick Release Ears</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

**HP Processors**

**Entry Processors - E5-2600v3 series Processors**
- HP DL380 Gen9 Intel® Xeon® E5-2603v3 (1.6GHz/6-core/15MB/85W) FIO Processor Kit
- HP DL380 Gen9 Intel® Xeon® E5-2609v3 (1.9GHz/6-core/15MB/85W) FIO Processor Kit

**Base Processors - E5-2600v3 series Processors**
- HP DL380 Gen9 Intel® Xeon® E5-2620v3 (2.4GHz/6-core/15MB/85W) FIO Processor Kit
- HP DL380 Gen9 Intel® Xeon® E5-2623v3 (3GHz/4-core/10MB/105W) FIO Processor Kit
- HP DL380 Gen9 Intel® Xeon® E5-2630v3 (2.4GHz/8-core/20MB/85W) FIO Processor Kit
- HP DL380 Gen9 Intel® Xeon® E5-2630Lv3 (1.8GHz/8-core/20MB/55W) FIO Processor Kit
- HP DL380 Gen9 Intel® Xeon® E5-2637Lv3 (3.5GHz/4-core/15MB/135W) FIO Processor Kit

**Performance Processors - E5-2600v3 series Processors**
- HP DL380 Gen9 Intel® Xeon® E5-2640v3 (2.6GHz/8-core/20MB/90W) FIO Processor Kit
- HP DL380 Gen9 Intel® Xeon® E5-2643v3 (3.4GHz/6-core/20MB/135W) FIO Processor Kit

**NOTE:** Ships with a High Performance Heatsink
- HP DL380 Gen9 Intel® Xeon® E5-2650v3 (2.3GHz/10-core/25MB/105W) FIO Processor Kit
- HP DL380 Gen9 Intel® Xeon® E5-2650Lv3 (1.8GHz/12-core/30MB/65W) FIO Processor Kit
- HP DL380 Gen9 Intel® Xeon® E5-2660v3 (2.6GHz/10-core/25MB/105W) FIO Processor Kit
- HP DL380 Gen9 Intel® Xeon® E5-2667v3 (3.2GHz/8-core/20MB/135W) FIO Processor Kit

**NOTE:** Ships with a High Performance Heatsink
- HP DL380 Gen9 Intel® Xeon® E5-2670v3 (2.3GHz/12-core/30MB/120W) FIO Processor Kit
- HP DL380 Gen9 Intel® Xeon® E5-2680Lv3 (2.5GHz/12-core/30MB/120W) FIO Processor Kit

**NOTE:** Ships with a High Performance Heatsink
- HP DL380 Gen9 Intel® Xeon® E5-2670v3 (2.3GHz/12-core/30MB/120W) FIO Processor Kit
- HP DL380 Gen9 Intel® Xeon® E5-2680Lv3 (2.5GHz/12-core/30MB/120W) FIO Processor Kit
NOTE: For the Intel® C600 Chipset E5-2600 Series, the letter preceding the model number indicates the Product Line (E3, E5, E7); 2600x v#, 2 = number of CPUs in a Node, 4 is socket/segment designation, 00 = Processor SKU, x = L for low power SKUs and v# (not yet designated) = version number

**Registered DIMMs (RDIMMs) for E5-2600v3 Series**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP 8GB (1x8GB) Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit</td>
<td>726718-B21</td>
</tr>
<tr>
<td>HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit</td>
<td>726719-B21</td>
</tr>
</tbody>
</table>

**Load Reduced DIMMs (LRDIMMs) for E5-2600v3 Series**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP 32GB (1x32GB) Quad Rank x4 DDR4-2133 CAS-15-15-15 Load Reduced Memory Kit</td>
<td>726722-B21</td>
</tr>
</tbody>
</table>

**NOTE:** LRDIMM, RDIMM are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen9 servers support LRDIMM and RDIMM.

**NOTE:** HP memory from previous generation servers is not qualified or warranted with this HP ProLiant Server. HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen9.

**NOTE:** If only one processor is installed, only half of the total DIMM slots are available. When populating with two processors all DIMM slots are available.

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

**NOTE:** Depending on the memory configuration and processor model, the memory speed may run at 2133 MHz, 1866 MHz, 1600 MHz or 1333 MHz. Please see Memory Population Table or the Online Memory Configuration Tool [at: www.hp.com/go/ddr4memory-configurator](http://www.hp.com/go/ddr4memory-configurator).

**HP Power Supplies**

**NOTE:** Mixing of power supplies in the same server is not supported. All power supplies must be of the same input voltage, output rating, and efficiency rating. If non-matching power supplies are installed, you may receive an error message and/or experience operational issues with your server.

**NOTE:** Prior to selecting a power supply option, it is highly recommended that you review your server configuration in the HP Power Advisor tool to determine the right size power supply for your server configuration. The HP Power Advisor is located at: [www.hp.com/go/hppoweradvisor](http://www.hp.com/go/hppoweradvisor).

**HP Flex Slot Platinum Power supplies**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP 500W Flex Slot Platinum Hot Plug Power Supply Kit</td>
<td>720478-B21</td>
</tr>
<tr>
<td>HP 800W Flex Slot Platinum Hot Plug Power Supply Kit</td>
<td>720479-B21</td>
</tr>
<tr>
<td>HP 1400W Flex Slot Platinum Plus Hot Plug Power Supply Kit</td>
<td>720620-B21</td>
</tr>
</tbody>
</table>

**NOTE:** The above power supply options are all 80Plus Platinum-certified with an efficiency rating of up to 94%. Support for HP Power Discovery Services is included with the 1400W Flex Slot option. Power specifications and technical content for all HP Server power supplies can be found at [www.hp.com/go/proliant/powersupply](http://www.hp.com/go/proliant/powersupply).

**NOTE:** Maximum of 2 Flex Slot Power Supplies per platform.
### Step 3: Choose Additional Factory Integratable Options (only one of the following from each list unless otherwise noted)

**Embedded B140i Settings**
- HP Enable Kit Hamer BIOS Setting
  - **NOTE:** enable the embedded B140i controller for RAID and Hot-plug capabilities
- HP Legacy FIO Mode Setting
  - **NOTE:** UEFI is the default, this part can be used to enable Legacy mode. If Legacy FIO Mode Setting is selected, then the embedded B140i will no longer be a primary controller and an HP Storage Controller must be selected.

### HP Storage Controllers

**SAS Controllers**

- **HP Flexible Smart Array Controllers**
  - HP Smart Array P440ar/2GB FBWC 12Gb 2-ports Int FIO SAS Controller
    - **NOTE:** Includes the HP Smart Storage Battery
  - HP H240ar 12Gb 1-port Int FIO Smart Host Bus Adapter

- **HP Smart Array Controllers**
  - HP Smart Array P440/4GB FBWC 12Gb 1-port Int FIO SAS Controller
  - HP Smart Array P840/4GB FBWC 12Gb 2-ports Int FIO SAS Controller
    - **NOTE:** The embedded B140i standard on all CTO servers only supports SATA hard drives. To enable the B140i controller, the Enable Kit Hamer BIOS Setting (784308-B21) must be selected. This allows for RAID and Hot-plug capabilities.
    - **NOTE:** SAS Controllers can support both SATA and SAS hard drives.

### HP Insight Software

- **HP Insight Control**
  - HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License
  - HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle FIO Electronic License

### Step 4: Choose Additional Options for Factory Integration from Core and Additional Options sections below.
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.

HP Unique Options

HP DL380 Gen9 Universal Media Bay Kit
NOTE: The HP DL380 Gen9 Universal Media bay provides front VGA and 2xUSB 3.0; plus support for 2xSFF Front drives (724865-B21) and ODD support (Not included); and can only be located in Bay1 in either a 8SFF or 8+8SFF model.
NOTE: This can only be populated in Bay1.

HP DL380 Gen9 Graphics Enablement Kit
NOTE: This kit includes alternative 2 Heatsinks plus 6 cables to enable GPU support with a 2P configuration. Other limitations apply, see Graphic section for more details.

HP DL380 Gen9 High Performance Temperature Fan Kit
NOTE: This kit is required for specific Ambient temperature environments, more details here: www.hp.com/go/proliant/Ashrae
NOTE: This kit is required for some GPGPU options, please see Graphics section for more details by card.

HP DL380 Gen9 25FF Front/Rear SAS/SATA Kit
NOTE: For 25FF front the Universal Media Bay (724865-B21) is required.
NOTE: 25FF in the rear is only supported with a 24SFF or 12LFF (719061-B21) model.

HP DL380 Gen9 3LFF Rear SAS/SATA Kit
NOTE: This is only supported in the 12LFF model (719061-B21)
NOTE: 3LFF rear drives will consume the 2nd riser expansion slot.

HP DL380 Gen9 Primary 2 Slot GPU Ready Riser Kit Slot1: 1x Gen3 x16 FH/FL, 1x Gen3 x8 FH/HL
HP DL380 Gen9 Secondary 3 Slot GPU Ready Riser Kit Slot2: 2x Gen3 x16 FH/FL, 1x Gen3 x8 FH/HL
HP DL380 Gen9 8SFF Bay1 Cage/Backplane Kit
NOTE: To add an additional 8SFF drive cage in Bay1.
NOTE: This ships with 6 High Efficiency Fans.
NOTE: Selecting this option does not allow you to select the Universal Media Bay.

HP DL380 Gen9 Additional 8SFF Bay2 Cage/Backplane Kit
NOTE: To add an additional 8SFF drive cage in Bay 2.
HP DL380 Gen9 12Gb SAS Expander Card with Cables for DL380 Gen9
NOTE: SAS expander to enable 24SFF field upgrade
NOTE: This kit included 6 High Efficiency Fans
HP DL380 Gen9 Systems Insight Display Kit
NOTE: The Systems Insight Display no longer ships as standard, but is available as a Factory Integrated, or field upgrade option.

HP Processors

Entry Processors - E5-2600v3 series Processors
HP DL380 Gen9 Intel® Xeon® E5-2603v3 (1.6GHz/6-core/15MB/85W) Processor Kit
HP DL380 Gen9 Intel® Xeon® E5-2609v3 (1.9GHz/6-core/15MB/85W) Processor Kit

Base Processors - E5-2600v3 series Processors
HP DL380 Gen9 Intel® Xeon® E5-2620v3 (2.4GHz/6-core/15MB/85W) Processor Kit
HP DL380 Gen9 Intel® Xeon® E5-2623v3 (3GHz/4-core/10MB/105W) Processor Kit
HP DL380 Gen9 Intel® Xeon® E5-2630v3 (2.4GHz/8-core/20MB/85W) Processor Kit
HP DL380 Gen9 Intel® Xeon® E5-2630Lv3 (1.8GHz/8-core/20MB/55W) Processor Kit
HP DL380 Gen9 Intel® Xeon® E5-2637v3 (3.5GHz/4-core/15MB/135W) Processor Kit
NOTE: Ships with a High Performance Heatsink
HP DL380 Gen9 Intel® Xeon® E5-2640v3 (2.6GHz/8-core/20MB/90W) Processor Kit

Performance Processors - E5-2600v3 series Processors
HP DL380 Gen9 Intel® Xeon® E5-2643v3 (3.4GHz/6-core/20MB/135W) Processor Kit
NOTE: Ships with a High Performance Heatsink
HP DL380 Gen9 Intel® Xeon® E5-2650v3 (2.3GHz/10-core/25MB/105W) Processor Kit
HP DL380 Gen9 Intel® Xeon® E5-2650Lv3 (1.8GHz/12-core/30MB/65W) Processor Kit
HP DL380 Gen9 Intel® Xeon® E5-2660v3 (2.6GHz/10-core/25MB/105W) Processor Kit
HP DL380 Gen9 Intel® Xeon® E5-2667v3 (3.2GHz/8-core/20MB/135W) Processor Kit

NOTE: Ships with a High Performance Heatsink

HP DL380 Gen9 Intel® Xeon® E5-2670v3 (2.3GHz/12-core/30MB/120W) Processor Kit

NOTE: Ships with a High Performance Heatsink

HP DL380 Gen9 Intel® Xeon® E5-2680v3 (2.5GHz/12-core/30MB/120W) Processor Kit

NOTE: Ships with a High Performance Heatsink

HP DL380 Gen9 Intel® Xeon® E5-2683v3 (2GHz/14-core/35MB/120W) Processor Kit

NOTE: Ships with a High Performance Heatsink

HP DL380 Gen9 Intel® Xeon® E5-2690v3 (2.6GHz/12-core/30MB/135W) Processor Kit

NOTE: Ships with a High Performance Heatsink

HP DL380 Gen9 Intel® Xeon® E5-2695v3 (2.3GHz/14-core/35MB/120W) Processor Kit

NOTE: Ships with a High Performance Heatsink

HP DL380 Gen9 Intel® Xeon® E5-2697v3 (2.6GHz/14-core/35MB/145W) Processor Kit

NOTE: Ships with a High Performance Heatsink

HP DL380 Gen9 Intel® Xeon® E5-2698v3 (2.3GHz/16-core/40MB/135W) Processor Kit

NOTE: Ships with a High Performance Heatsink

HP DL380 Gen9 Intel® Xeon® E5-2699v3 (2.3GHz/18-core/45MB/145W) Processor Kit

NOTE: Ships with a High Performance Heatsink

HP DL380 Gen9 Intel® Xeon® E5-2687Wv3 (3.1GHz/10-core/25MB/160W) Processor Kit

NOTE: Up to 2 processors supported in each model. Performance and Energy Star Preconfigured Models include two processors.

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

NOTE: Turbo2: Intel® Turbo Boost Technology 2.0 provides more computing power when you need it with performance that adapts to spikes in your workload and delivers more performance upside than previous generation turbo technology.

NOTE: DDR4 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

NOTE: All B21 processors ship with 2 additional FANs for factory of field installation.

NOTE: Double wide PCIe cards are only supported in risers with the Processors leveraging the High Performance Heatsink. For Processors requiring double wide GPU support please order the GPU enablement kit (719082-B21)

**HP Memory**

**Registered DIMMs (RDIMMs) for E5-2600v3 Series**

NOTE: The following memory is supported by the E5-2600v3 series Processors.

HP 8GB (1x8GB) Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit

HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit

NOTE: Depending on Processor selected this memory will run at 1600, 1866 or 2133MHz

**Load Reduced DIMMs (LRDIMMs) for E5-2600v3 Series**

NOTE: The following memory is supported by the E5-2600v3 series Processors.

HP 32GB (1x32GB) Quad Rank x4 DDR4-2133 CAS-15-15-15 Load Reduced Memory Kit

NOTE: Depending on Processor selected this memory will run at 1600, 1866 or 2133MHz

**HP Optical Drives**

HP 9.5mm SATA DVD-ROM JackBlack Gen9 Optical Drive

NOTE: The Universal Media Bay (724865-B21) is required for this option

HP 9.5mm SATA DVD-RW JackBlack Gen9 Optical Drive

NOTE: The Universal Media Bay (724865-B21) is required for this option

HP Mobile USB Non Leaded System DVD RW Drive

701498-B21

**HP Drives**

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

HP 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Dual Port Enterprise 3yr Warranty Hard Drive

HP 900GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive

HP 600GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive

HP 600GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive

HP 600GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive
HP 450GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 759210-B21
HP 450GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 652572-B21
HP 300GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 759208-B21
HP 300GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 652564-B21
HP 146GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 652605-B21

**SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives**
HP 1TB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive 652749-B21
HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive 652745-B21
SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives
HP 450GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive 737394-B21
HP 300GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive 737261-B21

**SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives**
HP 6TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive 761477-B21
HP 3TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive 652766-B21
HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive 652757-B21
HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive 652753-B21

**SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives**
HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive 655710-B21

**SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives**
HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive 753874-B21
HP 4TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive 693687-B21
HP 4TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive 695510-B21
HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive 628061-B21
HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive 658079-B21
HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive 657750-B21
HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive 658071-B21

**12G SAS Hot Plug SFF (2.5-inch) Enterprise Performance Solid State Drives**
HP 800GB 12G SAS High Endurance SFF 2.5-in SC Enterprise Performance 3yr Wty Solid State Drive 741159-B21
HP 400GB 12G SAS High Endurance SFF 2.5-in SC Enterprise Performance 3yr Wty Solid State Drive 741155-B21
HP 200GB 12G SAS High Endurance SFF 2.5-in SC Enterprise Performance 3yr Wty Solid State Drive 741151-B21

**12G SAS Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives**
HP 800GB 12G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive 741146-B21
HP 400GB 12G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive 741142-B21
HP 200GB 12G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive 741138-B21

**12G SAS Hot Plug SFF (2.5-inch) Enterprise Value Solid State Drives**
HP 1.6TB 12G SAS Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive 762263-B21
HP 800GB 12G SAS Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive 762261-B21
HP 12G SAS Hot Plug LFF (3.5-inch) Enterprise Value Solid State Drives
HP 1.6TB 12G SAS Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive 762272-B21
HP 800GB 12G SAS Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive 762270-B21

**6G SATA Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives**
HP 800GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive 691868-B21
HP 400GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive 691866-B21
QuickSpecs

HP ProLiant DL380 Generation9 (Gen9)

Core Options

HP 200GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive
HP 100GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive

6G SATA Hot Plug SFF (2.5-inch) Enterprise Value Solid State Drives
HP 800GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive
HP 600GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive
HP 480GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive
HP 300GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive
HP 240GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive

6G SATA Hot Plug SFF (2.5-inch) Enterprise Boot Solid State Drives
HP 120GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Boot 3yr Wty Solid State Drive
HP 80GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Boot 3yr Wty Solid State Drive

6G SATA Hot Plug LFF (3.5-inch) Enterprise Mainstream Solid State Drives
HP 800GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive
HP 400GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive
HP 200GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive
HP 100GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive

6G SATA Hot Plug LFF (3.5-inch) Enterprise Value Solid State Drives
HP 800GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive
HP 600GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive
HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive
HP 300GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive
HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive

6G SATA Hot Plug LFF (3.5-inch) Enterprise Boot Solid State Drives
HP 120GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Boot 3yr Wty Solid State Drive
HP 80GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Boot 3yr Wty Solid State Drive

Hard Drive Blank Kits
HP Large Form Factor Hard Drive Blank Kit
HP Small Form Factor Hard Drive Blank Kit

Disk Enclosures
HP D2600 w/12 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 48TB Bundle

Hard Drive Kits
HP DL380 Gen9 8SFF Bay1 Cage/Backplane Kit
HP DL380 Gen9 Additional 8SFF Bay2 Cage/Backplane Kit
HP DL380 Gen9 2SFF Front/Rear SAS/SATA Kit
HP DL380 Gen9 3LFF Rear SAS/SATA Kit

Media Bay Kits
HP DL380 Gen9 Universal Media Bay Kit

NOTE: The Universal Media Bay offers front VGA and 2xUSB 3.0, plus ability to add optional Optical drive, or 2SFF.
NOTE: This is only compatible with the 8SFF or 8+8 SFF Models.

HP Networking

1 Gigabit Ethernet adapters
HP Ethernet 1Gb 4-port 331T Adapter
HP Ethernet 1Gb 2-port 361T Adapter
HP Ethernet 1Gb 2-port 332T Adapter
HP Ethernet 1Gb 4-port 331FLR Adapter
**10 Gigabit Ethernet adapters**

- HP Ethernet 10Gb 2-port 530SFP Adapter 652503-B21
- HP Ethernet 10Gb 2-port 530T Adapter 656596-B21
- HP Ethernet 10Gb 2-port 560SFP+ Adapter 665249-B21
- HP Ethernet 10Gb 2-port 561T Adapter 716591-B21
- HP Ethernet 10Gb 2-port 570SFP+ Adapter 718904-B21
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter 727060-B21
- HP StoreFabric CN1200E 10Gb Converged Network Adapter E7Y06A

**NOTE:** A minimum of two Gigabytes (2 GB) of server memory is required per each adapter.

**NOTE:** Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately. Please see the related NIC QuickSpecs for Technical Specifications and additional information: [www.hp.com/go/ProLiantNICs](http://www.hp.com/go/ProLiantNICs).

**FlexibleLOM Adapters**

- HP Ethernet 1Gb 4-port 366FLR Adapter 665240-B21
- HP FlexFabric 10Gb 2-port 533FLR-T Adapter 700759-B21
- HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter 665243-B21
- HP Ethernet 10Gb 2-port 561FLR-T Adapter 700699-B21

**NOTE:** Only one FlexibleLOM can be added to the server. These options are upgradeable and can be changed from the original configuration after the server is shipped.

**NOTE:** Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately. Please see the related NIC QuickSpecs for Technical Specifications and additional information: [www.hp.com/go/ProLiantNICs](http://www.hp.com/go/ProLiantNICs).

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**HP InfiniBand**

- HP InfiniBand FDR 2-port 545QSFP Adapter 702211-B21

**HP I/O Expansion Options**

- HP DL380 Gen9 Primary 2 Slot GPU Ready Riser Kit 719076-B21
  **NOTE:** This is for slot 2 and supports double wide GPGPUs
  Slot1: 1x Gen3 x16 FH/FL, 1xGen3 x8 FH/HL
- HP DL380 Gen9 Secondary 3 Slot GPU Ready Riser Kit 719073-B21
  **NOTE:** This is for slot 2 and supports double wide GPGPUs
  Slot2: 2x Gen3 x16 FH/FL, 1xGen3 x8 FH/HL
  **NOTE:** To support Graphics cards please also order the DL380 Gen9 Graphics Enablement kit, 719082-B21 that ships with 2 Performance Heatsinks and 6 cables. 1 kit needed for a 2P unit.

**HP Power Supplies**

**NOTE:** Mixing of power supplies in the same server is not supported. All power supplies must be of the same input voltage, output rating, and efficiency rating. If non-matching power supplies are installed, you may receive an error message and/or experience operational issues with your server.

**NOTE:** Prior to selecting a power supply option, it is highly recommended that you review your server configuration in the HP Power Advisor tool to determine the right size power supply for your server configuration. The HP Power Advisor is located at: [www.hp.com/go/hppoweradvisor](http://www.hp.com/go/hppoweradvisor).

**HP Flex Slot Platinum Hot-plug Power supplies**

- HP 500W Flex Slot Platinum Hot Plug Power Supply Kit 720478-B21
- HP 800W Flex Slot Platinum Hot Plug Power Supply Kit 720479-B21
- HP 1400W Flex Slot Platinum Plus Hot Plug Power Supply Kit 720620-B21

**NOTE:** The above power supply options are all 80Plus Platinum-certified with an efficiency rating of up to 94%. Support for HP Power Discovery Services is included with the 1400W Flex Slot option. Power specifications and technical content for all HP Server power supplies can be found at [www.hp.com/go/proliant/powersupply](http://www.hp.com/go/proliant/powersupply).

**NOTE:** Maximum of 2 Flex Slot PS per platform

**HP Computation and Graphics Accelerators**

- HP DL380 Gen9 Graphics Enablement Kit 719082-B21

**NOTE:** This GPU enablement kit includes 2 Heatsinks and 6 cables to enable double wide GPUs to be supported.

**NOTE:** For doublewide GPU support you are required to have at least 1x1400W Power Supply (720620-B21), per card.

**NOTE:** There are limitations on the chassis and processor supported when adding Graphics accelerators.
NOTE: Some cards will require the addition of the High Performance Ambient Temperature Fan Kit (719079-B21)

HP NVIDIA GRID K1 Quad GPU PCIe Graphics Accelerator
NOTE: This GPU enablement kit includes 2 Heatsinks and 6 cables to enable double wide GPUs to be supported.
NOTE: Is supported in all models with either increased or Max cooling settings
NOTE: The Primary GPU riser (719076-B21) is required to support this in slot1
NOTE: The secondary GPU riser (719073-B21) is required to support this in slot2 (2nd processor required).
NOTE: For doublewide GPU support you are required to have at least 1x1400W Power Supply (720620-B21), per card.

NVIDIA GRID K2 Reverse Air Flow Dual GPU PCIe Graphics Accelerator
NOTE: This GPU enablement kit includes 2 Heatsinks and 6 cables to enable double wide GPUs to be supported.
NOTE: For doublewide GPU support you are required to have at least 1x1400W Power Supply (720620-B21), per card.
NOTE: There are limitations on the models and processor supported when adding Graphics accelerators
NOTE: This card will require the addition of the High Performance Ambient Temperature Fan Kit (719079-B21)

NVIDIA Tesla K40C 12GB Computational Accelerator
NOTE: This GPU enablement kit includes 2 Heatsinks and 6 cables to enable double wide GPUs to be supported.
NOTE: This is supported in all models.
NOTE: The Primary GPU riser (719076-B21) is required to support this in slot1
NOTE: The secondary GPU riser (719073-B21) is required to support this in slot2 (2nd processor required).
NOTE: For doublewide GPU support you are required to have at least 1x1400W Power Supply (720620-B21), per card.

HP NVIDIA Quadro K2200 Graphics Accelerator
NOTE: This GPU enablement kit includes 2 Heatsinks and 6 cables to enable double wide GPUs to be supported.
NOTE: This is supported in all models.
NOTE: The Primary GPU riser (719076-B21) is required to support this in slot1
NOTE: The secondary GPU riser (719073-B21) is required to support this in slot2 (2nd processor required).
NOTE: For doublewide GPU support you are required to have at least 1x1400W Power Supply (720620-B21), per card.

HP NVIDIA Quadro K4200 Graphics Accelerator
NOTE: This GPU enablement kit includes 2 Heatsinks and 6 cables to enable double wide GPUs to be supported.
NOTE: This is supported in all models.
NOTE: The Primary GPU riser (719076-B21) is required to support this in slot1
NOTE: The secondary GPU riser (719073-B21) is required to support this in slot2 (2nd processor required).
NOTE: For doublewide GPU support you are required to have at least 1x1400W Power Supply (720620-B21), per card.

NVIDIA Quadro K6000 PCI-E Graphics Adapter
NOTE: This GPU enablement kit includes 2 Heatsinks and 6 cables to enable double wide GPUs to be supported.
NOTE: This is supported in all models.
NOTE: The Primary GPU riser (719076-B21) is required to support this in slot1
NOTE: The secondary GPU riser (719073-B21) is required to support this in slot2 (2nd processor required).
NOTE: For doublewide GPU support you are required to have at least 1x1400W Power Supply (720620-B21), per card.

HP 150W PCI-E Power Cable Kit
NOTE: Each DL380 Gen9 server will accommodate up to three single-width or two double width PCIe cards for Computational Graphics support
**NOTE:** The NVIDIA Tesla, GRID and Quadro modules are supported only on 64-bit versions of Linux and Windows operating systems as well as on Virtual Machine client operating systems. The supported bare metal operating systems are RHEL6, SLES 11 and Windows Server 2012 R2.

**NOTE:** There are limitations on fan types, setting, and model support by card.

<table>
<thead>
<tr>
<th>HP Cooling Options</th>
<th>HP DL380 Gen9 High Performance Temperature Fan Kit</th>
<th>719079-B21</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NOTE:</strong> High Performance Temperature Fan kit consists of 6 fans, these will need to replace all the standard Fans in the unit, and fill all 6-Fan cages.</td>
<td><strong>NOTE:</strong> The High Performance Temperature Fan Kit is needed to support certain GPGPU (Graphics cards) configurations; or ASHRAE operating environments.</td>
<td></td>
</tr>
<tr>
<td><strong>NOTE:</strong> the 12LFF and 24SFF models (including field upgrades to 24SFF) will already include 6 High Performance Fan kits.</td>
<td><strong>NOTE:</strong> For elevated ambient temperature support please see: <a href="http://www.hp.com/servers/ASHRAE">www.hp.com/servers/ASHRAE</a></td>
<td></td>
</tr>
</tbody>
</table>
**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.

### HP Insight Software
- **HP Insight Control**
  - HP Insight Control including 1yr 24x7 Technical Support and Updates Single Server License: C6N27A
  - HP Insight Control including 1yr 24x7 Technical Support and Updates Electronic License: C6N28ABE
- **HP Insight Control Server Provisioning Media Kit**
  - HP Insight Management Media Kit: BD883A

**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.

**NOTE:** For additional license options please see the QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/12612_na/12612_na.html.

### Embedded Management
- **HP iLO Advanced**
  - HP iLO Advanced Electronic License with 3yr 24x7 Tech Support and Updates: BD506AAE
  - HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License: 512485-B21
  - HP iLO Advanced 1 Server License with 3yr 24x7 Tech Support and Updates: BD505A
  - HP iLO Advanced including 1yr 24x7 Technical Support and Updates E-LTU: E6U59ABE
  - HP iLO Advanced including 3yr 24x7 Technical Support and Updates E-LTU: E6U64ABE
  - HP iLO Advanced including 1yr 24x7 Technical Support and Updates Electronic License: TA850AAE

### High Performance Clusters
- **HP Cluster Management Utility**
  - HP Insight Cluster Management Utility 1yr 24x7 Flexible License: QL803B
  - HP Insight Cluster Management Utility 3yr 24x7 Flexible License: BD476A

**NOTE:** These part numbers can be used to purchase one certificate for multiple licenses and support with a single activation key. Each license is for one node (server). Customer will receive a printed end user license agreement and license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online in order to obtain a license key. Customer also will receive a support agreement.

- HP Insight Cluster Management Utility Media: BD477A

**NOTE:** For additional license kits please see the QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/12612_na/12612_na.html.

### HP Security
- **HP 2U Security Bezel Kit**
  - HP Trusted Platform Module Option: 666988-B21

**NOTE:** The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. 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.

**NOTE:** ProLiant OS pre-installed units will come with the partition required for TPM deployment.

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

### HP Storage Controllers
- **SAS Controllers**
  - HP Flexible Smart Array Controllers
  - HP Smart Array P440ar/2GB FBWC 12Gb 2-ports Int SAS Controller: 726736-B21

**NOTE:** Includes the HP Smart Storage Battery
**QuickSpecs**

**Additional Options**

**HP Smart Array Controllers**
- HP Smart Array P440/4GB FBWC 12Gb 1-port Int SAS Controller 726821-B21
- HP Smart Array P840/4GB FBWC 12Gb 2-ports Int SAS Controller 726897-B21
- HP Smart Array P441/4GB FBWC 12Gb 2-ports Ext SAS Controller 726825-B21

**HP Smart Array P440zmid**
- HP Smart Array P440zmid 4GB FBWC 12Gb 1-port Int SAS Controller 726821-B21

**HP Smart Array P840zmid**
- HP Smart Array P840zmid 4GB FBWC 12Gb 2-ports Int SAS Controller 726897-B21

**HP Smart Array P441zmid**
- HP Smart Array P441zmid 4GB FBWC 12Gb 2-ports Ext SAS Controller 726825-B21

**HP Cable Options**
- HP DL380 Gen9 P840/440 SAS Cable Kit 783007-B21
- HP DL380 Gen9 2SFF Front SAS x4 Cable Kit 783008-B21
- HP DL380 Gen9 8SFF SAS Cable Kit 783009-B21
- HP DL380 Gen9 2SFF x8 Front Cable Kit 785989-B21
- HP DL380 Gen9 12LFF SAS Cable Kit 785991-B21
- HP DL380 Gen9 8SFF H240 Cable Kit 786092-B21
- HP DL380 Gen9 12LFF H240 SAS Cable Kit 786215-B21

For details on cabling options, additional information available here: [Cabling Matrix](#)

**Optional Upgrades**
- HP 96W Smart Storage Battery with 145mm Cable for DL/ML/SL Servers 727258-B21
  **NOTE:** Provide backup power for multiple HP Smart Array controllers or other devices (up to 16)
- HP 12Gb SAS Expander Card with Cables for DL380 Gen9 727250-B21

**HP Tape Backup**


**Tape Drives**
- HP StoreEver LTO-6 Ultrium 6650 SAS External Tape Drive EH964A
- HP StoreEver 1/8 G2 LTO-6 Ultrium 6250 FC Tape Autoloader COH19A
- HP StoreEver LTO-6 Ultrium 6250 Tape Drive in 1U Rack-mount Kit C0L99A
- HP StoreEver LTO-4 Ultrium 1760 SAS External Tape Drive EH920B
- HP StoreEver LTO-4 Ultrium 1760 SAS (1) in 1U Rack-mount Kit EH946C
- HP StoreEver LTO-5 Ultrium 3000 SAS External Tape Drive EH958B
- HP StoreEver LTO-5 Ultrium 3000 SAS Tape Drive in 1U Rack-mount EJ014B
- HP StoreEver LTO-5 Ultrium 3280 SAS External Tape Drive EH900B
- HP StoreEver LTO-5 Ultrium 3280 SAS Tape Drive in 3U Rack-mount EJ013B
- HP StoreEver LTO-6 Ultrium 6250 External Tape Drive EH970A
- HP StoreEver 1U SAS Rack-mount Kit AE459B
- HP StoreEver LTO-4 Ultrium 1760 SCSI External Tape Drive EH922B

**HP Tape Storage Systems**
- HP StoreEver MSL6480
- HP StoreEver MSL6480 Scalable Base Module QU626A
- HP MSL2024 0-Drive Tape Library AK379A
- HP MSL4048 0-Drive Tape Library AK381A
- HP MSL Library Extender Kit AQ746A

**HP Storage Options**


**Emulex Fibre Channel HBAs**
- HP 81E 8Gb 1-port PCIe Fibre Channel Host Bus Adapter AJ762B
QuickSpecs

HP ProLiant DL380 Generation9 (Gen9)

Additional Options

**QLogic Fibre Channel HBAs**
- HP 81Q 8Gb 1-port PCIe Fibre Channel Host Bus Adapter
  - AK344A
- HP 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter
  - AJ764A
- HP StoreFabric SN1000Q 16Gb 1-port PCIe Fibre Channel Host Bus Adapter
  - QW971A
- HP StoreFabric SN1000Q 16Gb 2-port PCIe Fibre Channel Host Bus Adapter
  - QW972A

**Converged Network Adapter**
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
  - QW990A

**HP Disk Storage Systems**

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<th>Disk Enclosures</th>
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<td>HP D6000 w/35 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 140TB Bundle</td>
<td>E7W30A</td>
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<tr>
<td>HP D6000 w/70 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 280TB Bundle</td>
<td>E7W31A</td>
</tr>
<tr>
<td>HP D6000 w/35 2TB 6G SAS 7.2K LFF Dual port MDL HDD 70TB Bundle</td>
<td>Q697A</td>
</tr>
<tr>
<td>HP D6000 w/70 2TB 6G SAS 7.2K LFF Dual port MDL HDD 140TB Bundle</td>
<td>Q698A</td>
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<tr>
<td>HP D6000 w/35 3TB 6G SAS 7.2K LFF Dual port MDL HDD 105TB Bundle</td>
<td>Q699A</td>
</tr>
<tr>
<td>HP D6000 w/70 3TB 6G SAS 7.2K LFF Dual port MDL HDD 210TB Bundle</td>
<td>Q700A</td>
</tr>
</tbody>
</table>

**HP Data Center Racks**

**HP 11000 G2 Series Racks**
- HP 11648 1075mm Pallet Universal Rack
  - H6J87A
- HP 11648 1075mm Shock Universal Rack
  - H6J88A
- HP 11642 1075mm Pallet Universal Rack
  - H6J65A
- HP 11642 1075mm Shock Universal Rack
  - H6J66A
- HP 11642 1200mm Pallet Universal Rack
  - H6J67A
- HP 11642 1200mm Shock Universal Rack
  - H6J68A
- HP 11636 1075mm Pallet Universal Rack
  - H6J77A
- HP 11636 1075mm Shock Universal Rack
  - H6J78A
- HP 11622 G2 1075mm Pallet Universal Rack
  - H6J83A
- HP 11622 G2 1075mm Shock Universal Rack
  - H6J84A
- HP 11614 1075mm Shock Universal Rack
  - H6J82A

**NOTE:** Please see the HP 11000 G2 Series Racks QuickSpec for information on additional racks options and rack specifications.

**HP Intelligent Series Racks**
- HP 647 1075mm Pallet Intelligent Series Rack
  - BW911A
- HP 647 1075mm Shock Intelligent Series Rack
  - BW912A
- HP 647 1200mm Pallet Intelligent Series Rack
  - BW913A
- HP 647 1200mm Shock Intelligent Series Rack
  - BW914A
- HP 642 1075mm Pallet Intelligent Series Rack
  - BW903A
- HP 642 1075mm Shock Intelligent Series Rack
  - BW904A
- HP 642 1200mm Pallet Intelligent Series Rack
  - BW907A
- HP 642 1200mm Shock Intelligent Series Rack
  - BW908A
- HP 636 1075mm Pallet Intelligent Series Rack
  - BW895A
- HP 636 1075mm Shock Intelligent Series Rack
  - BW896A
- HP 842 1075mm Pallet Intelligent Series Rack
  - BW917A
- HP 842 1075mm Shock Intelligent Series Rack
  - BW918A

**NOTE:** Please see the HP Intelligent Series Racks QuickSpec for information on additional racks options and rack specifications.

**HP Value Series Rack**
- HP 1142 1075mm deep Pallet 100 series Rack
  - AF046A

**NOTE:** Please see the HP Value Series Rack QuickSpec for information on additional racks options and rack specifications.
**QuickSpecs**

**HP ProLiant DL380 Generation9 (Gen9)**

## Additional Options

### HP Power Distribution Units (PDUs)

- **HP Basic Power Distribution Unit (bPDU)**
  - HP 4.9kVA 24A High Voltage NA/JP Core Modular Power Distribution Unit
  - HP 8.3kVA 40A High Voltage NA/JP Core Modular Power Distribution Unit
  - HP 17.3kVA 48A Three Phase NA/JP Modular Power Distribution Unit
  - HP 3.6kVA 200-240 Volt Detachable C20 Input (12xC13) WW Basic PDU
  - HP 4.9kVA 208 Volt L6-30 Input (20xC13) NA/JP Basic PDU
  - **NOTE:** To learn more about HP Basic Power Distribution Units (bPDU), please visit the HP website at [www.hp.com/go/pdu](http://www.hp.com/go/pdu).

- **HP Monitored Power Distribution Units (mPDU)**
  - HP 2.8kVA 120 Volt L5-30 Input (12xNEMA 5-20R) NA/JP Monitored PDU
  - HP 3.6kVA 200-240 Volt Detachable C20 Input (16xC13) WW Monitored PDU
  - HP 4.9kVA 208 Volt L6-30 Input (20xC13/4xC19) NA/JP Monitored PDU
  - HP 17.3kVA 208 Volt IEC309 60A 3-Phase Input (12xC13/12xC19) NA/JP Monitored PDU
  - **NOTE:** Please see the HP Monitored Power Distribution Units QuickSpec for information on additional options and product specifications.

- **HP Intelligent Power Distribution Units (iPDU)**
  - HP 4.9kVA 24A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit
  - HP 8.3kVA 40A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit
  - HP 8.6kVA 24A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit
  - HP 17.3kVA 48A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit
  - HP 17.3kVA 48A 208V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit
  - HP 4.9kVA 24A Single Phase NA/JP Intelligent Modular Power Distribution Kit
  - HP 8.6kVA 24A Three Phase NA/JP Intelligent Modular Power Distribution Kit
  - **NOTE:** Please see the HP Intelligent Power Distribution Units QuickSpec for information on additional options and product specifications.

### Rail Kits

- **NOTE:** Gen9 rail kits have changed significantly from prior generation rail kits. Please take a moment to review the installation documentation that comes with the server to help you with the installation of your Gen9 server.
- **NOTE:** Rail kits are optional for DL380 Gen9 and are no longer included standard with the server. Customers have the option to purchase their server without a rail kit.
- **NOTE:** Ball bearing and Easy Install rail kits contain telescoping rails which allow for in-rack serviceability.
- **NOTE:** To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001).
- **Caution:** HP recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.

- HP 2U Small Form Factor Easy Install Rail Kit
  - **NOTE:** Does not include CMA (733664-B21)
  - 733660-B21
- HP 2U Large Form Factor Easy Install Rail Kit
  - **NOTE:** Does not include CMA (733664-B21)
  - 733662-B21
- HP 2U Cable Management Arm for Easy Install Rail Kit
  - 733664-B21
- HP 2U Small Form Factor Ball Bearing Rail Kit
  - **NOTE:** Does not include CMA (720865-B21)
  - 720863-B21
- HP 2U Large Form Factor Ball Bearing Rail Kit
  - **NOTE:** Does not include CMA (720865-B21)
  - 720864-B21
- HP 2U Cable Management Arm for Ball Bearing Rail Kit
  - 720865-B21

### HP KVM Switches

- HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software
  - AF620A
- HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software
  - AF621A
### Additional Options

<table>
<thead>
<tr>
<th>HP Server Console 0x2x8 Port Analog Switch</th>
<th>AF616A</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP Server Console 0x2x16 Port Analog Switch</td>
<td>AF617A</td>
</tr>
<tr>
<td>HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software</td>
<td>AF618A</td>
</tr>
<tr>
<td>HP 1x4 USB/PS2 KVM Console Switch</td>
<td>AF611A</td>
</tr>
</tbody>
</table>

**NOTE:** To learn more, please visit the [HP KVM Switches web page](#).

<table>
<thead>
<tr>
<th>HP USB Keyboard and Mouse</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>HP USB BFR with PVC Free US Keyboard/Mouse Kit</td>
<td>631341-B21</td>
</tr>
</tbody>
</table>

**NOTE:** Please see the [HP USB Keyboard and Mouse QuickSpec](#) for information on additional options and product specifications.

<table>
<thead>
<tr>
<th>HP 1U Rackmount Keyboard with USB</th>
<th>AG072A</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP 1U US Rackmount Keyboard with USB</td>
<td></td>
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</table>

**NOTE:** Please see the [HP 1U Rackmount Keyboard QuickSpec](#) for information on additional options and product specifications.

<table>
<thead>
<tr>
<th>HP Uninterruptible Power Systems (UPS)</th>
<th>AF466A</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP Rack-mountable UPS</td>
<td></td>
</tr>
<tr>
<td>HP R/T3000 G2 2U L530 Low Voltage NA/JP Uninterruptible Power System</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** To learn more, please visit the [HP Uninterruptible Power Systems (UPS) web page](#).
Memory Subsystem Architecture
Each Intel® Xeon® E5-2600v3 family processor socket contains four memory channels per installed processor with three DIMMs per channel for a total of twelve (12) DIMMs or a grand total of twenty-four (24) DIMMs for the server.

Memory Population guidelines

General Memory Population Rules and Guidelines:
- White DIMM slots denote the first slot of a channel. For 1 DPC (DIMM per channel) populate white slots only.
- A minimum of one DIMM is required per server.
- Install DIMMs only if the corresponding processor is installed.
- If only one processor is installed in a two processor system, only half of the DIMM slots are available.
- To maximize performance, it is recommended to balance the total memory capacity between all installed processors and to load the channels similarly whenever possible.
- When two processors are installed, balance the DIMMs across the two processors.
- Populate DIMMs from heaviest load (quad-rank) to lightest load (single-rank) within a channel. Heaviest load (DIMM with most ranks) within a channel goes furthest from the processor.
- RDIMMs operating at either 1.35V or 1.5V may be mixed in any order, but the system will power them at the higher voltage.
- Do not mix RDIMMs or LRDIMMs.
- LRDIMMs are supported up to 3 DIMMs per channel.
- Using the HP RBSU, 1.35V DIMMs can be changed to operate at 1.5V.
- DIMMs of different speeds may be mixed in any order; the server will select a common optimal speed.
The maximum memory speed is a function of the memory type, memory configuration, and processor model.

The maximum memory capacity is a function of the memory type and number of installed processors.

HP memory from previous generation servers is not compatible with the DL380 Gen9 Server. Certain HP SmartMemory features such as memory authentication and enhanced performance may not be supported. To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at:


For memory population rules and additional memory guidelines, please see the DL380 Gen9 user guide at:

http://www.hp.com/support.

There are four (4) Memory channels per processor; eight (8) channels per 2 processor server.

There are three (3) DIMM slots for each memory channel; twenty four (24) total slots for 2 processor server.

Memory channels 1 and 3 consist of the three (3) DIMMs that are furthest from the processor.

Memory channel 2 and 4 consist of the three (3) DIMMs that are closest to the processor.

---

### Intel Gen9 Supported Memory Bandwidth for HP ProLiant Gen8 Intel® Xeon®E5-2600v3 Series Processor Family

<table>
<thead>
<tr>
<th>DIMM Type</th>
<th>Registered DIMMs (RDIMMs)</th>
<th>Load Reduced (LRDIMMs)</th>
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</thead>
<tbody>
<tr>
<td>DIMM Capacity</td>
<td>Single Rank</td>
<td>Dual Rank</td>
</tr>
<tr>
<td>8GB</td>
<td>16GB</td>
<td>32GB</td>
</tr>
<tr>
<td>DIMM Native Speed (MT/s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage</td>
<td></td>
<td>Std Voltage 1.2V</td>
</tr>
</tbody>
</table>

**SLOTS THAT CAN BE POPULATED**

- 24 slot servers: 24

**MAXIMUM CAPACITY (GB)**

- 192
- 384
- 768

**DIMM slot and configuration diagram**

- **Basic memory slot & population diagram**
  - Population order: start with "A" first, "B" second, "C" third, etc.
  - When one processor is installed, install DIMMs in sequential alphabetic order: A, B, C, D, E, F ...
  - When two processors are installed, install DIMMs in sequential
  - alphabetic order: CPU1-A, CPU2-A, CPU1-B, CPU2-B, CPU1-C, CPU2-C

<table>
<thead>
<tr>
<th>Slot #</th>
<th>population order</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
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</tbody>
</table>
Memory Speed by Processor Model

<table>
<thead>
<tr>
<th>Processor Models</th>
<th>Supported Memory Speeds</th>
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</thead>
<tbody>
<tr>
<td>E5-2603v3, E5-2609v3,</td>
<td>1600MHz</td>
</tr>
<tr>
<td>E5-2620v3, E5-2623v3,</td>
<td>1666MHz</td>
</tr>
<tr>
<td>E5-2637v3, E5-2643v3,</td>
<td>2133MHz</td>
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<tr>
<td>E5-2650v3, E5-2650Lv3,</td>
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<tr>
<td>E5-2660v3, E5-2667v3,</td>
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<tr>
<td>E5-2670v3, E5-2680v3,</td>
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<tr>
<td>E5-2683v3, E5-2690v3,</td>
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<td>E5-2695v3, E5-2697v3,</td>
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<td>E5-2698v3, E5-2699v3,</td>
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<tr>
<td>E5-2687Wv3,</td>
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Standard and Maximum Memory Capacity (Pre-configured Models)

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<th>Pre-Configured Models</th>
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<th>Maximum Memory Plus Optional Memory</th>
<th>Standard Memory Replaced with Optional Memory</th>
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<tr>
<td>E5-2609v3,</td>
<td>8GB (1x8GB)</td>
<td>376GB (23x16GB, 1x8GB)</td>
<td>768GB (24x32GB)</td>
</tr>
<tr>
<td>E5-2620v3,</td>
<td>16GB (1x16GB)</td>
<td>384GB (23x16GB, 1x16GB)</td>
<td>768GB (24x32GB)</td>
</tr>
<tr>
<td>E5-2650v3,</td>
<td>32GB (2x16GB)</td>
<td>384GB (22x16GB, 2x16GB)</td>
<td>768GB (24x32GB)</td>
</tr>
</tbody>
</table>

DDR4 memory options part number decoder

**NOTE:** Capacity references are rounded to the common gigabyte (GB) values.

- 2GB = 2,048MB
- 4GB = 4,096MB
- 8GB = 8,192MB
- 16GB = 16,384MB
- 32GB = 32,768MB
Storage

4LFF hot-plug drive model

1-4

4 x LFF SATA/SAS/SSD Hot Pluggable Hard Drive Bays

12 LFF + 3 rear LFF hot-plug drive model

1-12

12 x LFF SATA/SAS/SSD Hot Pluggable Hard Drive Bays

1-3

3 x LFF SATA/SAS/SSD Hot Pluggable Rear Hard Drive Bays

12 LFF + 2 rear SFF hot-plug drive model

1-12

12 x LFF SATA/SAS/SSD Hot Pluggable Hard Drive Bays

1-2

2 x SFF SATA/SAS/SSD Hot Pluggable Rear Hard Drive Bays

8 SFF (+2 SFF) hot-plug drive model with Universal Media Bay

1-8

8 x SFF SATA/SAS/SSD Hot Pluggable Hard drive bays

1-2

2 x SFF SATA/SAS/SSD Hot Pluggable Hard Drive Bays

16 SFF (+2 SFF) hot-plug drive model with Universal Media Bay

1-16

16 x SFF SATA/SAS/SSD Hot Pluggable Hard drive bays

1-2

2 x SFF SATA/SAS/SSD Hot Pluggable Hard Drive Bays
24 SFF + rear 2 SFF hot-plug drive model

1-24 24 x SFF SATA/SAS/SDD Hot Pluggable Hard drive bays

1-2 2 x SFF SATA/SAS/SSD Hot Pluggable Rear Hard Drive Bays
# System Unit

## Dimensions

- **SFF Drives**: 3.44 x 17.54 x 26.75 in (8.73 x 44.55 x 67.94 cm)
- **LFF Drives**: 3.44 x 17.54 x 28.75 in (8.73 x 44.55 x 73.02 cm)

**NOTE:** Dimensions without Bezel

## Weight

**Minimum:**
- 8SFF model with 1xSFF HDD and 7 HDD blanks, 1x processor, 1x power supply (plus blank), 1x Flexible Smart Array, 1x Riser installed

**Maximum:**
- 12 LFF hard drives (No rear drives), 2x processors, 2x power supplies, 1x Flexible Smart Array, 2x Risers installed

- **Minimum:** 32.6 lb (14.759 kg)
- **Maximum:** 51.5 lb (23.6 kg)

## System Inlet Temperature

- **Standard Operating Support**: 10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (10,000 ft) above sea level, 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. For approved hardware configurations, the supported system inlet range is extended to be: 5° to 40°C (41° to 104°F) at sea level with an altitude derating of 1.0°C per every 175 m (574 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL: www.hp.com/go/proliant/Ashrae

## Input Requirements

### BTU Rating

**Maximum**
- For 800W Power Supply: 3207 BTU/hr (at 100 VAC), 3071 BTU/hr (at 200 VAC), 3112 BTU/hr (at 240 VAC) for China Only
- For 500W Power Supply: 1979 BTU/hr (at 100 VAC), 1911 BTU/hr (at 200 VAC), 1965 BTU/hr (at 240 VAC) for China Only

### Power Supply Output

**Rated Steady-State Power**
- For 1400W Power Supply: 1400W (at 100 VAC), 1400W (at 240 VAC), 1400W (at 240 VAC)
- For 800W Power Supply: 800W (at 100 VAC), 800W (at 240 VAC), 800W (at 240 VAC) input for China only
- For 500W Power Supply: 500W (at 100 VAC), 500W (at 240 VAC), 500W (at 240 VAC) input for China only

**Maximum Peak Power**
- For 1400W Power Supply: 1400W (at 100 to 127 VAC), 1400W (at 200 to 240 1VAC), 1400W (at 240 VAC) input for China only
- For 800W Power Supply: 800W (at 100 to 127 VAC), 800W (at 200 to 240 1VAC), 800W (at 240 VAC) input for China only
- For 500W Power Supply: 500W (at 100 to 127 VAC), 500W (at 200 to 240 VAC), 500W (at 240 VAC) input for China only

## Extended Ambient Operating Support

**Non-operating**
- -30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).

## Relative Humidity

### Operating

Minimum to be the higher (more moisture) of -12°C (10.4°F) dew point or 8% relative humidity. Maximum to be the lower (less moisture) of 24°C (75.2°F) dew point or 90% relative humidity.

### (non-condensing) 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).

**Idle**

<table>
<thead>
<tr>
<th>LWAd</th>
<th>4.0 B Entry LFF</th>
<th>4.1 B Entry</th>
<th>4.2 B Base</th>
<th>5.7 B Base LFF</th>
<th>4.3 B Perf</th>
</tr>
</thead>
<tbody>
<tr>
<td>LpAm</td>
<td>23 dBA Entry LFF</td>
<td>24 dBA Entry</td>
<td>24 dBA Base</td>
<td>39 dBA Base LFF</td>
<td>25 dBA Perf</td>
</tr>
</tbody>
</table>

**Operating**

<table>
<thead>
<tr>
<th>LWAd</th>
<th>4.3 B Entry LFF</th>
<th>4.6 B Entry</th>
<th>4.8 B Base</th>
<th>5.9 B Base LFF</th>
<th>5.6 B Perf</th>
</tr>
</thead>
<tbody>
<tr>
<td>LpAm</td>
<td>25 dBA Entry LFF</td>
<td>29 dBA Entry</td>
<td>30 dBA Base</td>
<td>31 dBA Base LFF</td>
<td>39 dBA Perf</td>
</tr>
</tbody>
</table>

**NOTE:** The Listed sound levels apply to standard shipping configurations (Entry LFF, Entry, Base, Base LFF and Performance models). Additional options may result in increased sound levels. The Base LFF model leverages our High Efficiency Fans, other models are shipping with standard fan options.

**Emissions Classification (EMC)**

FCC Rating: Class A

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-

**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.

**NOTE:** The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.

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**HP Dynamic Smart Array B140i Controller**

<table>
<thead>
<tr>
<th>Number of PCI links</th>
<th>Four</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCI link rate</td>
<td>4 Gb/s</td>
</tr>
<tr>
<td>Storage protocol support</td>
<td>SATA</td>
</tr>
<tr>
<td>SAS/SATA peak data transfer rate</td>
<td>6 Gb/s</td>
</tr>
<tr>
<td>Number of SAS/SATA links</td>
<td>10 links</td>
</tr>
<tr>
<td>SAS/SATA connectivity</td>
<td>2x4 connectors; 2x1 connectors</td>
</tr>
<tr>
<td>Expander support</td>
<td>No</td>
</tr>
<tr>
<td>Drives supported (max)</td>
<td>Up to 10 Internal Drives</td>
</tr>
<tr>
<td>RAID support</td>
<td>0, 1, 10, 5 SATA</td>
</tr>
</tbody>
</table>
QuickSpecs

Technical Specifications

### Software management
- HP SSA, SMH, SIM

### Warranty
- Server warranty

### HP Secure Encryption license
- Not Supported

### HP SmartCache License
- Not Supported

### HP Smart Storage Administrator
- Supported

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**HP Ethernet 1Gb 4-port 331i Adapter**

<table>
<thead>
<tr>
<th>Network Interface</th>
<th>10Base-T/100Base-TX/1000Base-TX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compatibility</td>
<td>IEEE 802.3 10Base-T</td>
</tr>
<tr>
<td></td>
<td>IEEE 802.3ab 1000Base-T</td>
</tr>
<tr>
<td></td>
<td>IEEE 802.3u 1000Base-TX</td>
</tr>
</tbody>
</table>

**Ports**

- PCI Express, two lanes (x2)

**Controller**

- BCM5719

**Network Transfer Rate**

- 10Base-T (Half-Duplex) 10 Mb/s per port, 40 Mb/s combined
- 10Base-T (Full-Duplex) 20 Mb/s per port, 80 Mb/s combined
- 100Base-TX (Half-Duplex) 100 Mb/s per port, 400 Mb/s combined
- 100Base-TX (Full-Duplex) 200 Mb/s per port, 800 Mb/s combined
- 1000Base-TX (Half and Full-Duplex) 1000Mb/s per port, 4000 Mb/s combined
- 1000Base-TX (Full-Duplex) 2000Mb/s per port, 8000 Mb/s combined

**Connector**

- Four RJ-45

**Cable Support**

- 10 Base-T Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
- 10/100/1000 Base-TX Category 5 or higher UTP; up to 328 ft (100 m)

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**Environment-friendly Products and Approach**

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.

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