

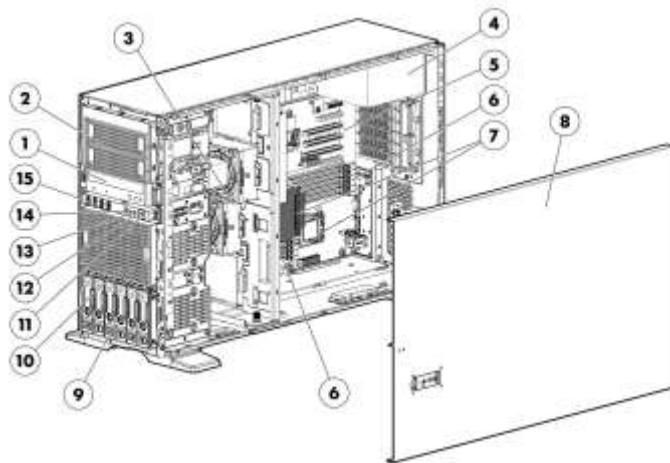
QuickSpecs

HP ProLiant ML350e Generation 8 (Gen8)

Overview

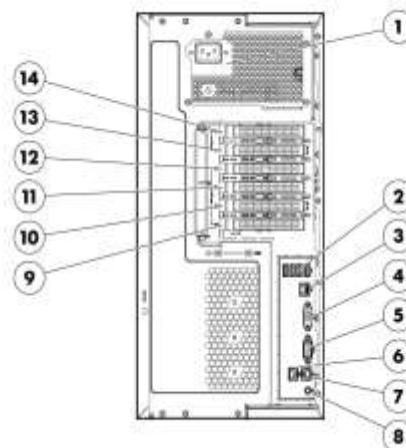
HP ProLiant ML350e Generation 8 (Gen8)

The HP ProLiant ML350e Gen8 is a dual processor tower platform, which is built on the latest Intel® Xeon® E5-2400 processors to create unique system architecture. This unique architecture as well as flexible deployment options allow the businesses to scale as needed so they can optimize their IT spending dollars. The HP ProLiant ML350e Gen8 delivers the industry's most powerful embedded management technology with HP integrated Lights-Out 4 (iLO4), which allows businesses to manage the servers anytime and from anywhere.



Front View:

1. SATA DVD ROM or DVD RW optical drive
2. Two (2) removable media bays
3. Two (2) standard system fans
4. One (1) standard 460W Non-Hot Plug Power Supply
5. Six (6) PCIe expansion slots (4 PCIe 3.0 and 2 PCIe 2.0)
6. 12 total DIMM slots: DDR3 Registered (RDIMM) or Unbuffered (UDIMM) memory (6 DIMM slots per CPU)
7. Processor and processor heatsink
8. Quick removal access panel
9. Standard drive cage (4LFF or 6LFF or 8SFF)
10. Optional drive cage (6LFF or 8SFF)
11. Power On/Standby button and system power LED button
12. NIC status LED
13. Health LED
14. UID LED button
15. Four (4) USB connectors



Rear View:

1. One (1) standard 460W Non-Hot Plug Power supply
2. Four (4) USB connectors
3. iLO connector
4. Video connector
5. Serial connector
6. NIC connector 2
7. NIC connector 1
8. UID LED button
9. PCIe slot 1 (for processor 1)
10. PCIe slot 2 (for processor 1)
11. PCIe slot 3 (for processor 2)
12. PCIe slot 4 (for processor 2)
13. PCIe slot 5 (for processor 1)
14. PCIe slot 6 (for processor 1)

What's New

- Support for 12G SAS High Endurance Hot Plug SFF (2.5-inch) Enterprise Performance and Enterprise Mainstream Solid State Drives

Standard Features

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

Processor

One of the following depending on model

Eight-Core Processors

NOTE: All support up to 1600MHz DDR3 memory speeds.

Intel® Xeon® E5-2470 (2.3GHz/8-core/95W/20MB) Processor

Intel® Xeon® E5-2450 (2.1GHz/8-core/95W/20MB) Processor

Intel® Xeon® E5-2450L (1.8GHz/8-core/70W/20MB) Processor

Six-Core Processors

NOTE: All support up to 1333MHz DDR3 memory speeds.

Intel® Xeon® E5-2440 (2.4GHz/6-core/95W/15MB) Processor

Intel® Xeon® E5-2430 (2.2GHz/6-core/95W/15MB) Processor

Intel® Xeon® E5-2430L (2.0GHz/6-core/60W/15MB) Processor

Intel® Xeon® E5-2420 (1.9GHz/6-core/95W/15MB) Processor

Quad-Core Processors

NOTE: All support up to 1066MHz DDR3 memory speeds.

Intel® Xeon® E5-2407 (2.2GHz/4-core/80W/10MB) Processor

Intel® Xeon® E5-2403 (1.8GHz/4-core/80W/10MB) Processor

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

NOTE: Up to 2 processors supported. Mixing different processor models is not supported.

NOTE: For the Intel® C600 Chipset E5-2400 Series, the letter preceding the model number indicates the Product Line (E3, E5, E7); 2400x 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.

Cache Memory

One of the following depending on model

20MB (1 x 20MB) Level 3

NOTE: For Eight-core processors.

15MB (1 x 15MB) Level 3

NOTE: For Six-core processors.

10MB (1 x 10MB) Level 3

NOTE: For Quad-core processors.

Chipset

Intel® C600 Chipset

Intel® E5-2400 Processor Family

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

<http://www.intel.com/products/server/chipsets/>.

Upgradeability

Upgradeable to two processors

NOTE: Total 8, 12 or 16 cores

Up to 12 DIMM slots available for higher memory capacity

Up to 24 SFF hard drives or 18 LFF hard drives for expanded storage

4 PCIe 3.0 and 2 PCIe 2.0 I/O slots for additional communications and storage expansion

Redundant Power Supplies (92% and 94% efficiency)

Tower to rack conversion

Optical drive bays (up to 2)

Security bezel

QuickSpecs

HP ProLiant ML350e Generation 8 (Gen8)

Standard Features

On System Management Chipset HP iLO (Firmware: HP iLO4)
NOTE: For more information, visit: <http://www.hp.com/go/ilo>

Memory Protection Advanced ECC
 Online Spare
 Lock-step mode

Memory Type HP SmartMemory
 One of the following depending on model DDR3 Registered (RDIMM) or Unbuffered (UDIMM)

| | |
|-------------------------------|--|
| DIMM Slots Available | 12 DIMM slots (6 DIMM slots per CPU) |
| Standard (Entry Models) | 2GB (1 x 2GB) Unbuffered DIMMs PC3L-10600E |
| Standard (Base Models) | 4GB (1 x 4GB) Unbuffered DIMMs PC3L-10600E |
| Standard (Performance Models) | 8GB (2 x 4GB) Unbuffered DIMMs PC3L-10600E |
| Maximum (RDIMM) | 192 GB (12 x 16 GB) RDIMMM |
| Maximum (UDIMM) | 96 GB (12 x 8 GB) UDIMM |

NOTE: Redundant Enablement Kit (part # 664046-B21) is required when Registered DIMM is purchased.
NOTE: HP memory from previous generation servers are not fully compatible with the HP ProLiant ML350e Gen8 Server.
NOTE: To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html
NOTE: If one processor is installed, only 6 DIMM slots are available. When populating with two processors 12 DIMM slots are available.
NOTE: Depending on the memory configuration and processor model, the memory speed may run up to 1600MHz, 1333MHz, or 1066MHz. Please see Memory Population Table or the Online Memory Configuration Tool at: www.hp.com/go/ddr3memory-configurator.

Network Controller HP Ethernet 1Gb 2-port 361i Adapter

Expansion Slots

| Expansion Slot # | Technology | Bus Width | Connector Width | Bus Number | Form Factor | Notes |
|------------------|------------|-----------|-----------------|------------|-------------------------|---|
| 6 | PCIe 2.0 | x1 | X4 | 0 | Half Length/Full Height | Activated when installed with Processor 1 |
| 5 | PCIe 2.0 | x4 | x8 | 0 | Full-length/Full Height | Activated when installed with Processor 1 |
| 4 | PCIe 3.0 | X8 | X16 | 32 | Full Length/Full Height | Activated when installed with Processor 2 |
| 3 | PCIe 3.0 | x16 | x16 | 32 | Full Length/Full Height | Activated when installed with Processor 2 |
| 2 | PCIe 3.0 | X16 | X16 | 0 | Full | Activated |

QuickSpecs

HP ProLiant ML350e Generation 8 (Gen8)

Standard Features

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|---|----------|----|----|---|-------------------------|---|
| 1 | PCIe 3.0 | X4 | X8 | 0 | Length/Full Height | when installed with Processor 1 |
| | | | | | Full Length/Full Height | Activated when installed with Processor 1 |

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number.

HP Server ROM

HP ROM (Read Only Memory) is now digitally signed using HP's Corporate Signing Service. This signature is verified before the flash process starts, reducing accidental programming and preventing malicious efforts to corrupt system ROM.

HP ROM provides for essential initialization and validation of hardware components before control is passed to the customer-installed operating system. The ROM also provides the capability of booting from various fixed media (HDD, CD-ROM) and removable media (USB), to continue operation to the operating system.

HP ROM performs very early configuration of the video controller, to allow monitoring of initialization progress via an attached monitor. If configuration or hardware errors are discovered during this early phase of hardware initialization, suitable messages are now displayed on the connected monitor. Additionally, these configuration or hardware errors are logged to the Integrated Management Log (IML) to assist in diagnosis.

HP's ProLiant ROM is used to configure the following:

- Processor and chipset status registers
- System memory, memory map, and memory initialization
- System hardware configuration (Integrated PCI devices and optional PCIe cards).
- Customer-specific BIOS configuration (using the HP ROM-Based Setup Utility (RBSU)).

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

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| Storage Controller One of the following depending on model | Entry Models | HP Dynamic Smart Array B120i/Zero Memory SATA Controller (RAID 0,1,10) |
| | Base Models | HP Dynamic Smart Array B120i/512MB FBWC SATA Controller (RAID 0,1,5,10) |
| | Performance Models | HP Smart Array P420/1GB FBWC Controller (RAID 0/1/1+0/5/5+0/6/6+0) |

| | | |
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| Internal Storage Devices | Optical Drives | HP Half-Height SATA DVD-ROM Optical Drive |
| | Hard Drives | None ship standard |
| | Hard Drive Bays | Up to 24 SFF hard drive bays or 18 LFF hard drive bays |

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 Gen8 Hard Drive Blank Kit or P/N 666986-B21: HP LFF Gen8 Hard Drive Blank Kit. These part numbers for single HDD blanks below are also provided should the customer require replacement HDD blanks for their server.

| | | | |
|---------------------------------|-------------------|------|----------|
| Maximum Internal Storage | Hot Plug LFF SAS | 54TB | 18 x 3TB |
| | Hot Plug LFF SATA | 54TB | 18 x 3TB |

QuickSpecs

HP ProLiant ML350e Generation 8 (Gen8)

Standard Features

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|---|-----------------------|--------|------------|
| One of the following depending on model | Hot Plug SFF SAS | 28.8TB | 24 x 1.2TB |
| | Hot Plug SFF SATA | 24TB | 24 x 1TB |
| | Non-Hot Plug LFF SATA | 12TB | 4 x 3TB |
| | Hot Plug SFF SAS SSD | 2.4TB | 24 x 100GB |
| | Hot Plug LFF SATA SSD | 1.8TB | 18 x 100GB |

| | | |
|-------------------|---------------------------------------|---|
| Interfaces | Serial | 1 |
| | Video | 1 (rear) |
| | Network RJ-45 (Ethernet) | 3 (1 dedicated for HP Integrated Lights-Out) |
| | HP iLO Remote Management Network Port | 1 Gb Dedicated |
| | SD slot | 1 (internal) NOTE: The 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. |
| | USB | 10 (4 front, 4 rear, 2 internal) |

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| Industry Standard Compliance | ACPI 2.0b Compliant |
| | PCIe 3.0 Compliant |
| | PXE Support |
| | WOL Support |
| | Novell Certified |
| | IPMI 2.0, SMASH CLP, DCMI 1.0 compliant |
| | Microsoft® Logo certifications |
| | USB 2.0 Support |
| SMBIOS 2.7.1 | |

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| Server Power Cords | ProLiant ML servers in a rack-mount configuration no longer ship standard with NEMA power cords that allow connection to 110V US wall outlets in a home or office. These servers are primarily connected to PDU's in data center racks so they now ship standard with only a PDU power cord (416151-B21). If a user wishes to power a ProLiant ML rack-mount server using a 110V receptacle (NEMA-15), the NEMA power cord must be ordered separately. The 12' cord (AF556A) or 6' cord (187335-001) can be purchased online at HP.COM. In a tower configuration, the servers ship standard with a 6' country specific NEMA power cord. If customers require a local power cord, they can check the power cord matrix for the appropriate country specific sku. Please see the following power cord matrix: http://www.hp.com/go/powercordmatrix . |
|---------------------------|---|

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| Power Specifications | To review typical system power ratings use the HP Power Advisor which is available via the online tool located at URL: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor . |
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NOTE: Power Specification and Technical Content for supported power supplies can be found at: http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html

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| Common Slot Power Supplies | NOTE: Mixing of power supplies in the same server is not supported. All power supplies inside a server must be exactly the same model. Mixing Gold, Platinum, and Platinum Plus certified power supplies is not supported. |
|-----------------------------------|---|

HP's Common Slot (CS) power supplies allow for commonality of power supplies across a wide range of ProLiant and Integrity servers, as well as HP Storage solutions, and are designed to provide the highest power supply efficiency without degrading system performance. HP CS power supplies are tested by

Standard Features

the Electric Power Research Institute (EPRI) and certified through the ECOS 80 Plus power supply program. HP CS power supply options provide efficiency ratings of up to 94% (80 Plus Platinum) and are available in power output options - 460W, 750W, and 1200W - allowing the customer to "right-size" a power supply for their specific server configuration. All HP Common Slot power sources are UL, CE Mark Compliant, hot-plug and support redundant configurations.

NOTE: Mixing of power supplies in the same server is not supported. All power supplies must be of the same output and efficiency rating. If non-matched power supplies are inserted you will get errors and operation will fail.

HP CS Platinum power supplies are required when enabling HP's Intelligent Power Discovery (IPD) solution. IPD is the first technology to create an automated, energy-aware network between IT systems and facilities. This allows your company to reclaim millions of dollars in wasted power capacity and downtime costs across data centers. For more information on HP's IPD solution, go to www.hp.com/go/ipd.

It is highly recommended that you use the HP Power Advisor in defining the "Right-Size" power supply for your needs. HP Power Advisor can be accessed at: www.hp.com/go/hppoweradvisor.

NOTE: The 80 PLUS program is a unique forum that unites electric utilities, the computer industry, and consumers in an effort to bring energy efficient technology solutions to the marketplace. 80 Plus independently tests power supply efficiency and publicly posts the results on 80Plus.org.

Redundant Power: Optional (1 + 1 redundant) power supplies can be purchased through power supply option kits (see Power Supplies for part numbers).

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

System Fans

Two (2) Non-hot plug, non-redundant fans ship standard (support up to 4 fans).

NOTE: Redundant Enablement Kit (part # 664046-B21) is required when redundant fans are needed.

Operating Systems and Virtualization Software Support for ProLiant Servers

[Microsoft Windows Server](#)

[Red Hat Enterprise Linux \(RHEL\)](#)

[SUSE Linux Enterprise Server \(SLES\)](#)

[VMware](#)

NOTE: For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: <http://www.hp.com/go/ossupport> and our driver download page <http://www.hp.com/support/ML350eGen8>

Graphics

Integrated Matrox G200 video standard

- 1280 x 1024 (32 bpp)
- 1920 x 1200 (16 bpp)

HP iLO 4 On System Management Memory

- 16 MB Flash
- 256 MB DDR 3 with ECC (112 MB after ECC and video)

Form Factor

Tower 5U

Standard Features

Rackable with the purchase of tower to rack conversion tray kit

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| On System Management | HP iLO Management Engine | <p>HP iLO Management Engine is a comprehensive set of embedded management features supporting the complete lifecycle of the server, from initial deployment, through ongoing management, to service alerting and remote support. HP iLO Management Engine comes standard on all HP ProLiant Gen8 servers. The HP iLO Management Engine portfolio includes:</p> <ul style="list-style-type: none"> • HP iLO: The HP iLO (Integrated Lights-Out) management processor is the core foundation for the HP iLO Management Engine • HP Agentless Management: Provides built in server health monitoring and alerting capability without OS agents, that starts working the moment a power cord and an Ethernet cable are connected. • HP Active Health System: Always on, continuous monitoring for increased stability and shorter downtimes; 100% configuration history; Health and service alerts and easy export and upload to Service and Support. • HP Intelligent Provisioning: Lets customers provision and configure a single server without any separate media. No more SmartStart CDs or Smart Update Firmware DVD are needed. <ul style="list-style-type: none"> ○ To start Intelligent Provisioning: ○ Press the F10 key during the ProLiant Gen8 server boot process (also known as power on self-test or POST). ○ Please go to the Intelligent Provisioning website at www.hp.com/go/intelligentprovisioning for additional information and to view usage videos. ○ Use the Service Pack for ProLiant (SPP) at www.hp.com/go/spp to get firmware and software updates. • HP iLO Mobile App: Enables the ability to access, deploy, and manage your server anytime from anywhere from select smartphones and mobile devices. For additional information please visit: www.hp.com/go/ilo/mobileapp |
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NOTE: For more information, visit: <http://www.hp.com/go/ilo> or HP iLO Management Engine technologies whitepaper

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|------------------------------|------------------------------|--|
| HP Insight Management | HP Service Pack for ProLiant | <p>HP Service Pack for ProLiant (SPP) and HP Smart Update Manager (HP SUM) provide a comprehensive approach to firmware and system software maintenance. Together they provide better operating stability and ensure maximum uptime. The SPP will be updated at a predictable cadence, typically coinciding with new HP server hardware launches. By enabling firmware to be updated online and integrating firmware and system software updates in one operation, HP SUM and the SPP offer faster updates of individual servers and dramatically faster updates of entire BladeSystem enclosures. Further improving system uptime and stability is the fact that HP provides 12 months of support for each Service Pack for ProLiant release.</p> |
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The user experience around HP SUM and the SPP has been improved in several ways, starting with the web download. A single web page provides access to a single download containing both the latest version of HP SUM and the latest SPP. Optional smaller subsets with only specific types of servers or specific operating systems are offered to save on download

Standard Features

time. The HP SUM application provides a straightforward, intuitive user interface that guides the user through the steps of discovery, analyses and update, providing comprehensive information on available updates, criticality and interdependencies. This information is also available in reports. By providing the option of multiple local or shared repositories which can be easily updated from hp.com, HP SUM provides the tools to optimize stability and consistency throughout the company. While HP SUM and the SPP recommend the combinations of firmware and system software that HP has found to be the best practice, the application gives customers the flexibility to set their own specific baseline.

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

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

Security

Power-on password
Setup password
Serial interface control
Power switch security
Administrator's password

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, 1-Year Labor, 1-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

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| HP Insight Management | HP Insight Control | <p>HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. HP Insight Control also supports Location and Power Discovery Services to automate many configuration, asset tracking, and power management tasks to speed implementation and prevent downtime. For more information, see http://www.hp.com/go/insightcontrol.</p> <p>HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, see: http://www.hp.com/services/insight.</p> |
| | HP iLO Essentials | <p>HP iLO Essentials license ideal for small and medium business customers. The specially created HP iLO Essentials (a subset of iLO Advanced functionality) saves SMB customers time and money, by ease of remote server set up through the interactive virtual media, lowering operational costs with remote access via the Integrated Remote Console, and faster time to resolution with email-based proactive notifications. With this newly designed HP iLO Essentials license SMB customers now have the option of a server management package solely design and priced just right for their IT environments. HP iLO Essentials is available on all HP ProLiant Gen8 e-series making this an ideal solution for small business owners. For more information, see: http://www.hp.com/go/iLO/essentials</p> |
| | HP iLO Advanced | <p>HP Integrated Lights-Out Advanced License a product option, providing smart remote server management without compromise. iLO Advanced unlocks the full set of remote administration functionality for all HP ProLiant servers by activating the full Virtual Keyboard Video and Mouse remote console, multi-user collaboration, console record and replay, GUI-based and scripted virtual media and virtual folders, and enhanced security and power management functionality. For more information, see: http://www.hp.com/go/iLOADvanced</p> |
| | HP Matrix Operating Environment | <p>The HP Matrix Operating Environment (Matrix OE) for ProLiant and Integrity servers is an integrated command center that helps you instantly adjust to dynamic business demands. This advanced infrastructure management software lets you reduce the cost of common data center tasks by up to 40 percent while keeping pace with your changing business.</p> <p>The HP Matrix OE includes the automated provisioning, optimization, and recovery management capabilities for HP CloudSystem Matrix, the ideal platform for private cloud and Infrastructure as a Service (IaaS).</p> <p>NOTE: For more information, visit: http://www.hp.com/go/matrixoe</p> |
| High Performance Clusters | HP Cluster Platforms | <p>HP Cluster Platforms are specifically engineered, factory-integrated large-scale ProLiant clusters optimized for High Performance Computing, with a choice of servers, networks and software. Operating system options include specially priced offerings for Red Hat Enterprise Linux and SUSE Linux Enterprise Server, as well as Microsoft Windows HPC Server. A Cluster Platform Configurator simplifies ordering. http://www.hp.com/go/clusters.</p> |
| | HPC Interconnects | <p>High Performance Computing (HPC) interconnect technologies are available for this server as part of the HP Cluster Platform portfolio. These high-speed InfiniBand and Gigabit interconnects are fully supported by HP when</p> |

Optional Features

| | |
|---------------------------------------|--|
| HP Insight Cluster Management Utility | <p>integrated within an HP cluster. Flexible, validated solutions can be defined with the help of configuration tools.</p> <p>http://www.hp.com/techservers/clusters/ucp/index.html</p> <p>HP Insight Cluster Management Utility (CMU) is an HP-licensed and HP-supported suite of tools that are used for lifecycle management of hyperscale clusters of Linux ProLiant systems. CMU includes software for the centralized provisioning, management and monitoring of nodes. CMU makes the administration of clusters user friendly, efficient, and effective.</p> <p>http://www.hp.com/go/cmu</p> |
|---------------------------------------|--|

Storage Software

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

Storage software that gets the job done:

- Data Protection and Recovery Software**
Whether you're a large enterprise or a smaller business, HP data protection and recovery software will cost-effectively protect you against disaster and ensure business continuity.
- Data Archive and Migration Software**
HP's storage software enables you to comply with data retention and retrieval requirements, improve application performance, and reduce costs by efficiently migrating infrequently accessed or less valuable data to lower cost storage.
- Storage Resource Management Software (SRM)**
HP's storage resource management software reduces operational costs and provides the command and control foundation you need to efficiently manage and visualize your physical and virtual environments.
- Data Replication Software**
HP offers array-based and host-based replication software for use in disaster recovery, testing, application development and reporting.
- Storage Device Management Software**
Maximize your investment in HP storage and networking with software that enables hardware-specific configuration, performance tuning and connectivity management.
- HP StoreVirtual VSA**
With HP StoreVirtual VSA you can use the power of virtualization to turn a set of heterogeneous and disconnected physical disk drives in your servers and storage devices into a single pool of logical storage capacity.

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

HP Insight Online

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

www.hp.com/go/insightonline

HP Proactive Insight experience

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

www.hp.com/go/proactiveinsightexperience

Optional Features

Factory Express Portfolio for Servers and Storage HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

For more information on Factory Express services for your specific server model please contact your sales representative or go to: <http://www.hp.com/go/factory-express>

HP Simple Configurator SCE is a guided self-service tool to help sales and non-technical people provide customers with initial configurations in 3 to 5 minutes. You may then send the configuration on for configuration help, or use in your existing ordering processes. If you require "custom" rack configuration or configuration for products not available in SCE, please contact HP's Customer Business Center or an Authorized Partner for assistance. <http://www.hp.com/products/configurator>

Service and Support

Service and Support**HP Technology Services for Industry Standard Servers**

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

Protect your business beyond warranty with HP Care Pack Services

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

Optimized Care**Supports maintaining servers at optimum performance availability****HP Proactive Care with 24x7 coverage, three year Care Pack Service**

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

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

Standard Care**Service recommendation that maintains high level of server availability****Foundation Care 24x7, three-year Care Pack Service**

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

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

Related Services**HP ProLiant Server Hardware Installation**

Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf>

Factory Express for Servers and storage

HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed. For more information on Factory Express services for your specific server model please contact your sales representative or go to: <http://www.hp.com/go/factory-express>.

Data Privacy Services

Protect your data through better media management. HP Data privacy services help manage and protect sensitive data to reduce the risk of unauthorized access to private information and help meet compliance requirements. Our retention services allow you to keep drives and other devices upon failure, our removal services provide convenient data sanitization and our recovery services allow you to safely retire IT assets and capture any remaining value from the hardware.

www.hp.com/services/dataprivacy

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

Get connected to HP to

Prevent problems with innovative, automated monitoring tools and proactive services. Combining



Service and Support

improve your support experience

Proactive Care Services with our remote support technology such as Insight Online provides you with expert advice and personalized, cloud-based automated IT support, helping to prevent unplanned down time and solve problems quickly. For more information, visit: www.hp.com/go/proactiveinsightexperience

HP Support Center

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

HP's Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime. HP Insight Remote Support and HP Support Center are available at no additional cost with a HP warranty, HP Care Pack or HP contractual support agreement.

*HP Support Center Mobile App is subject to local availability

Warranty / Service Coverage

For ProLiant servers and storage systems, the services cover HP-branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, as well as external monitors up to 22" and tower UPS products; these items will be covered at the same service level and for the same coverage period as the server unless the maximum supported lifetime and/or the maximum usage limitation has been exceeded. Coverage of the UPS battery is not included; standard warranty terms and conditions apply.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HP due to malfunction. It does not apply to any exchange of Disk or SSD/Flash Drives that have not failed. SSD/Flash Drives that are specified by HP as consumable parts and/or that have exceeded maximum supported lifetime and/or the maximum usage limit as set forth in the manufacturer's operating manual or the technical data sheet are not eligible for the defective media retention service feature option.

For more information

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

QuickSpecs

HP ProLiant ML350e Generation 8 (Gen8)

Pre-configured Models

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

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

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

NOTE: 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 Gen8 Hard Drive Blank Kit or P/N 666986-B21: HP LFF Gen8 Hard Drive Blank Kit.

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

Entry Models

| | | |
|---|--|---|
| HP ProLiant ML350e Gen8 E5-2403 1P 2GB-U Non-hot Plug SATA LFF 460W PS Entry Svr 648375-xx1 | Processor Cache Memory Memory Network Controller Storage Controller Hard Drive Internal Storage Optical Drive Power Supply Fans Accessories Management Form Factor Warranty | (1) Intel® Xeon® E5-2403 (1.8GHz/4-core/80W/10MB) Processor 10MB (1 x 10MB) Level 3 2GB (1 x 2GB) Unbuffered DIMMs PC3L-10600E HP Ethernet 1Gb 2-port 361i Adapter HP Dynamic Smart Array B120i/Zero Memory SATA Controller (RAID 0,1,10) (1) 500GB 6G SATA 7.2K NHP 3.5" N MDL HDD; includes 3 hard drive blanks 4 LFF Non Hot Plug SATA HDD Bays only HP Half-Height SATA DVD-ROM Optical Drive (1) 460 Watt Power Supply (non-hot plug, non-redundant) 2 Non-Hot Plug, Non Redundant Fans USB Keyboard and Mouse ship standard HP iLO Management Engine (standard) Optional: HP iLO Essentials or HP Insight Control Tower (5U) Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response |
|---|--|---|

Base Models

| | | |
|--|--|---|
| HP ProLiant ML350e Gen8 E5-2407 1P 4GB-U Hot Plug SATA 4 LFF 460W PS Base Svr 648376-xx1 | Processor Cache Memory Memory Network Controller Storage Controller Hard Drive Internal Storage Optical Drive Power Supply Fans Accessories | (1) Intel® Xeon® E5-2407 (2.2GHz/4-core/80W/10MB) Processor 10MB (1 x 10MB) Level 3 4GB (1 x 4GB) Unbuffered DIMMs PC3L-10600E HP Ethernet 1Gb 2-port 361i Adapter HP Dynamic Smart Array B120i/512MB FBWC SATA Controller (RAID 0,1,5,10) None ships standard; includes 3 LFF hard drive blanks 4 LFF Hot Plug SATA HDD Bays only NOTE: A SAS controller and the HP ML350e Gen8 Large Form Factor (LFF) 5/6 Hard Drive Cable Kit (684527-B21) is required to support 6 LFF drives. Otherwise, only 4 SATA drives are supported with the embedded controller. HP Half-Height SATA DVD-ROM Optical Drive (1) 460 Watt Power Supply (non-hot plug, non-redundant) 2 Non-Hot Plug, Non Redundant Fans USB Keyboard and Mouse ship standard |
|--|--|---|

QuickSpecs

HP ProLiant ML350e Generation 8 (Gen8)

Pre-configured Models

| | |
|--------------------|--|
| Management | HP iLO Management Engine (standard) Optional: HP iLO Essentials or HP Insight Control |
| Form Factor | Tower (5U) |
| Warranty | Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response |

Performance Models

| | |
|---|---|
| HP ProLiant ML350e Gen8 E5-2420 1P 8GB-U P420 Hot Plug 6 LFF 460W PS Perf Server 648377-xx1 | <p>Processor (1) Intel® Xeon® E5-2420 (1.9GHz/6-core/95W/15MB) Processor</p> <p>Cache Memory 15MB (1 x 15MB) Level 3</p> <p>Memory 8GB (2 x 4GB) Unbuffered DIMMs PC3L-10600E</p> <p>Network Controller HP Ethernet 1Gb 2-port 361i Adapter</p> <p>Storage Controller HP Smart Array P420/1GB FBWC Controller (RAID 0/1/1+0/5/5+0/6/6+0)</p> <p>Hard Drive None ships standard; includes 5 LFF hard drive blanks</p> <p>Internal Storage 6 LFF Hot Plug SATA HDD Bays; upgradeable to 12</p> <p>Optical Drive HP Half-Height SATA DVD-ROM Optical Drive</p> <p>Power Supply (1) 460 Watt Power Supply (non-hot plug, non-redundant)</p> <p>Fans 2 Non-Hot Plug, Non Redundant Fans</p> <p>Accessories USB Keyboard and Mouse ship standard</p> |
| Management | HP iLO Management Engine (standard) Optional: HP iLO Essentials or HP Insight Control |
| Form Factor | Tower (5U) |
| Warranty | Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response |

Country Code Key

xx=00
xx=01
xx=29
xx=37
xx=AA

Tower Code Key

US
Australia
Japan
APD
PRC

Configuration Information - Factory Integrated Models

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

NOTE: Factory Integrated Models must start with a CTO Server.

NOTE: FIO indicates that this option is only available as a factory installable option.

NOTE: All Factory Integrated Models will be populated with sufficient hard drive blanks based on the number of initial hard drives ordered with the server.

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

| | | |
|------------------|---|------------|
| HP Models | ML350e Gen8 Tower Models | |
| | HP ProLiant ML350e Gen8 Non-hot Plug 4 LFF Configure-to-order Server | 664043-B21 |
| | Includes: | |
| | HP Ethernet 1Gb 2--port 361i Adapter | |
| | HP Dynamic Smart Array B120i SATA Controller (RAID 0/1/10) | |
| | Four (4) Non-Hot-Plug (LFF) SATA Drive Bays | |
| | Ten (10) USB ports | |
| | Six (6) PCIe slots | |
| | Two (2) Non-hot plug, non-redundant fans | |
| | HP iLO Management Engine (standard) | |
| | Tower (5U) form factor | |
| | HP ProLiant ML350e Gen8 Hot Plug 6 LFF Configure-to-order Server | 664044-B21 |
| | Includes: | |
| | HP Ethernet 1Gb 2--port 361i Adapter | |
| | HP Dynamic Smart Array B120i SATA Controller (RAID 0/1/10) | |
| | Six (6) Hot-Plug (LFF) SATA Drive Bays | |
| | NOTE: A SAS controller is required to support 6 LFF drives. Otherwise, only 4 SATA drives are supported with the embedded controller. HP Hot-Plug 4LFF Shield Metal FIO Kit (704853-B21) must be selected to use 4 SATA drives with embedded controller. | |
| | Ten (10) USB ports | |
| | Six (6) PCIe slots | |
| | Two (2) Non-hot plug, non-redundant fans | |
| | HP iLO Management Engine (standard) | |
| | Tower (5U) form factor | |
| | HP ProLiant ML350e Gen8 Hot Plug 8 SFF Configure-to-order Server | 664045-B21 |
| | Includes: | |
| | HP Ethernet 1Gb 2--port 361i Adapter | |
| | HP Dynamic Smart Array B120i SATA Controller (RAID 0/1/10) | |
| | Eight (8) Hot-Plug (SFF) SATA Drive Bays | |
| | NOTE: A SAS controller is required to support 8 SFF drives. | |
| | Ten (10) USB ports | |
| | Six (6) PCIe slots | |
| | Two (2) Non-hot plug, non-redundant fans | |
| | HP iLO Management Engine (standard) | |
| | Tower (5U) form factor | |

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

| | | |
|----------------------|--|------------|
| HP Processors | Eight-Core Processors | |
| | NOTE: All support up to 1600MHz memory speeds. | |
| | HP ML350e Gen8 Intel® Xeon® E5-2470 (2.3GHz/8-core/20MB/95W) FIO Processor | 678905-L21 |

Configuration Information - Factory Integrated Models

Kit
HP ML350e Gen8 Intel® Xeon® E5-2450 (2.1GHz/8-core/20MB/95W) FIO Processor Kit 678903-L21

Kit
HP ML350e Gen8 Intel® Xeon® E5-2450L (1.8GHz/8-core/20MB/70W) FIO Processor Kit 678901-L21

Six-Core Processors

NOTE: All support up to 1333MHz DDR3 memory speeds.

HP ML350e Gen8 Intel® Xeon® E5-2440 (2.4GHz/6-core/15MB/95W) FIO Processor Kit 665879-L21

HP ML350e Gen8 Intel® Xeon® E5-2430 (2.2GHz/6-core/15MB/95W) FIO Processor Kit 665870-L21

HP ML350e Gen8 Intel® Xeon® E5-2430L (2.0GHz/6-core/15MB/60W) FIO Processor Kit 665862-L21

HP ML350e Gen8 Intel® Xeon® E5-2420 (1.9GHz/6-core/15MB/95W) FIO Processor Kit 665868-L21

Quad-Core Processors

NOTE: All support up to 1066MHz DDR3 memory speeds.

HP ML350e Gen8 Intel® Xeon® E5-2407 (2.2GHz/4-core/10MB/80W) FIO Processor Kit 665866-L21

HP ML350e Gen8 Intel® Xeon® E5-2403 (1.8GHz/4-core/10MB/80W) FIO Processor Kit 665864-L21

HP Memory

NOTE: To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html
(Worldwide)

Registered DIMMs (RDIMMs) - E5-2xxx series Processors

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit 647893-B21

HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 647895-B21

HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit 647897-B21

HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 647899-B21

HP 8GB (1x8GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 690802-B21

HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit 647901-B21

HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 672631-B21

Unbuffered with ECC DIMMs (UDIMM) for E5-2xxx and E3-1xxx v3 series Processors

HP 2GB (1x2GB) Single Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit 669320-B21

HP 2GB (1x2GB) Single Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit 647905-B21

HP 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit 669322-B21

Configuration Information - Factory Integrated Models

| | |
|---|------------|
| HP 4GB (1x4GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit | 647907-B21 |
| HP 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit | 669324-B21 |
| HP 8GB (1x8GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit | 647909-B21 |
| Load Reduced DIMMs (LRDIMMs) | |
| HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit | 647903-B21 |

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

NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: <http://h18004.www1.hp.com/products/servers/platforms/energyefficient/>

HP Power Supplies

NOTE: Mixing of power supplies in the same server is not supported. All power supplies inside a server must be exactly the same model. **NOTE:** Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor.

Primary Power Supplies

| | |
|---|------------|
| HP 460W Factory Integrated Power Supply Kit | 667559-B21 |
|---|------------|

NOTE: This power supply is non-redundant and is factory integrated only.

HP Common Slot Platinum Plus Power Supply Kits

NOTE: The following Power Supplies offer 94% Efficiency with support for Intelligent Power Discovery.

| | |
|---|------------|
| HP 460W Common Slot Platinum Plus Hot Plug Power Supply Kit | 656362-B21 |
| HP 750W Common Slot Platinum Plus Hot Plug Power Supply Kit | 656363-B21 |

Enablement Kit

| | |
|-----------------------------|------------|
| HP Redundant Enablement Kit | 664046-B21 |
|-----------------------------|------------|

NOTE: Redundant Enablement Kit (part # 664046-B21) is required for any common slot power supply.

NOTE: Power Specification and Technical Content for supported power supplies can be found at:

http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html

Step 3: Choose Additional Factory Integratable Options

| | | |
|----------------------------|--|--------|
| HP Insight Software | HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License | C6N36A |
|----------------------------|--|--------|

Step 4: Choose Additional Options for Factory Integration

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

QuickSpecs

HP ProLiant ML350e Generation 8 (Gen8)

Core Options

NOTE: Some options may not be integrated at the factory. Contact your local sales representative for additional information.

HP Processors

Eight-Core Processors

NOTE: All support up to 1600MHz memory speeds.

HP ML350e Gen8 Intel® Xeon® E5-2470 (2.3GHz/8-core/20MB/95W) Processor Kit 678905-B21

HP ML350e Gen8 Intel® Xeon® E5-2450 (2.1GHz/8-core/20MB/95W) Processor Kit 678903-B21

Six-Core Processors

NOTE: All support up to 1333MHz DDR3 memory speeds.

HP ML350e Gen8 Intel® Xeon® E5-2440 (2.4GHz/6-core/15MB/95W) Processor Kit 665879-B21

HP ML350e Gen8 Intel® Xeon® E5-2430 (2.2GHz/6-core/15MB/95W) Processor Kit 665870-B21

HP ML350e Gen8 Intel® Xeon® E5-2430L (2.0GHz/6-core/15MB/60W) Processor Kit 665862-B21

HP ML350e Gen8 Intel® Xeon® E5-2420 (1.9GHz/6-core/15MB/95W) Processor Kit 665868-B21

Quad-Core Processors

NOTE: All support up to 1066MHz DDR3 memory speeds.

HP ML350e Gen8 Intel® Xeon® E5-2407 (2.2GHz/4-core/10MB/80W) Processor Kit 665866-B21

HP ML350e Gen8 Intel® Xeon® E5-2403 (1.8GHz/4-core/10MB/80W) Processor Kit 665864-B21

HP Memory

NOTE: To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html
(Worldwide)

Registered DIMMs (RDIMMs) - E5-2xxx series Processors

NOTE: Redundant Enablement Kit (part # 664046-B21) is required whenever Registered DIMM is purchased.

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit 647893-B21

HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 647895-B21

HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit 647897-B21

HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 647899-B21

HP 8GB (1x8GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 690802-B21

HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit 647901-B21

HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 672631-B21

Unbuffered with ECC DIMMs (UDIMM) for E5-2xxx and E3-1xxx v3 series Processors

HP 2GB (1x2GB) Single Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit 669320-B21

HP 2GB (1x2GB) Single Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit 647905-B21

HP 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit 669322-B21

HP 4GB (1x4GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit 647907-B21

QuickSpecs

HP ProLiant ML350e Generation 8 (Gen8)

Core Options

HP 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit 669324-B21

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

Load Reduced DIMMs (LRDIMMs)

HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit 647903-B21

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

NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: <http://h18004.www1.hp.com/products/servers/platforms/energyefficient/>

HP Optical Drives

HP Half-Height SATA DVD ROM JackBlack Optical Drive 624189-B21

HP Half-Height SATA DVD RW JackBlack Optical Drive 624192-B21

HP Hard Drives

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

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

SAS Hot Plug with SmartDrive SFF (2.5-inch) Enterprise Drives

HP 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Dual Port Enterprise 3yr Warranty Hard Drive 718162-B21

HP 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 697574-B21

HP 900GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 652589-B21

HP 600GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 652583-B21

HP 450GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 652572-B21

HP 300GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 652564-B21

HP 300GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 652611-B21

HP 146GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 652605-B21

SAS Hot Plug SmartDrive SFF (2.5-inch) Midline 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 SmartDrive LFF (3.5-inch) Enterprise Drives

HP 600GB 6G SAS 15K rpm LFF (3.5-inch) SC Enterprise 3yr Warranty Hard Drive 652620-B21

HP 450GB 6G SAS 15K rpm LFF (3.5-inch) SC Enterprise 3yr Warranty Hard Drive 652615-B21

SAS Hot Plug SmartDrive LFF (3.5-inch) Midline Drives

HP 4TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive 695510-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

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

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



Core Options

6G SATA Hot Plug with SmartDrive 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 |
| HP 500GB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive | 655708-B21 |

6G SATA Hot Plug with SmartDrive LFF (3.5-inch) Midline (MDL) Drives

| | |
|---|------------|
| HP 4TB 6G SATA 7.2k rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive | 693687-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 |

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

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

NOTE: SATA hard drives have a 1-year warranty. Please see the QuickSpecs for Technical Specifications and additional information:

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

12G SAS High Endurance 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 |
|--|------------|

NOTE: This drive supports Gen8 servers only.

| | |
|--|------------|
| HP 400GB 12G SAS High Endurance SFF 2.5-in SC Enterprise Performance 3yr Wty Solid State Drive | 741155-B21 |
|--|------------|

NOTE: This drive supports Gen8 servers only.

| | |
|--|------------|
| HP 200GB 12G SAS High Endurance SFF 2.5-in SC Enterprise Performance 3yr Wty Solid State Drive | 741151-B21 |
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NOTE: This drive supports Gen8 servers only.

12G SAS Mainstream Endurance 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 |
|---|------------|

NOTE: This drive supports Gen8 servers only.

| | |
|---|------------|
| HP 400GB 12G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive | 741142-B21 |
|---|------------|

NOTE: This drive supports Gen8 servers only.

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|---|------------|
| HP 200GB 12G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive | 741138-B21 |
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NOTE: This drive supports Gen8 servers only.

6G SATA Value Endurance 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 | 718171-B21 |
| HP 80GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Boot 3yr Wty Solid State | 734362-B21 |

Core Options

Drive

6G SATA Value Endurance Hot Plug SFF (2.5-inch) Enterprise Value Solid State Drives

HP 600GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive 739898-B21

HP 300GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive 739888-B21

6G SATA Value Endurance 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 718189-B21

HP 600GB 6G SATA Value Endurance LFF 3.5-in SC Converter Enterprise Value 3yr Wty Solid State Drive 739900-B21

HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive 718183-B21

HP 300GB 6G SATA Value Endurance LFF 3.5-in SC Converter Enterprise Value 3yr Wty Solid State Drive 739890-B21

HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive 718177-B21

6G SATA ME 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

HP 200GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive 691864-B21

HP 100GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive 691862-B21

6G SATA ME 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 691860-B21

HP 400GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive 691856-B21

HP 200GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive 691854-B21

HP 100GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive 691852-B21

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

http://h18000.www1.hp.com/products/quickspecs/14038_div/14038_div.html (Worldwide)

Hard Drive Kits

NOTE: All Factory Integrated Models will be populated with sufficient hard drive blanks based on the number of initial hard drives ordered with the server.

HP 2nd Media Bay Cage Kit 661618-B21

HP 5U 6 Large Form Factor (LFF) Hot Plug Drive Cage Kit 659485-B21

NOTE: This kit is for additional hot-plug LFF hard disk drives to a hot-plug LFF system. 1 or 2 additional cages can be added to bring the total drive count to 12 or 18, respectively. A Smart Array Controller is required for each additional drive cage

Core Options

and must be purchased as well.

Note: To install a six-bay, LFF hot-plug drive cage in a server, a Smart array controller option and redundant power supply option is required.

HP 5U 8 Small Form Factor (SFF) Hot Plug Drive Cage Kit 659484-B21

NOTE: This kit is for additional hot-plug SFF hard disk drives to a hot-plug SFF system. 1 or 2 additional cages can be added to bring the total drive count to 16 or 24, respectively. A Smart Array Controller is required for each additional drive cage and must be purchased as well.

HP ML350e Gen8 Large Form Factor (LFF) 5/6 Hard Drive Cable Kit 684527-B21

NOTE: This cable is required for upgrade from 4 LFF hot plug models to 6 LFF hot plug models. A SAS controller needs to be purchased as well.

HP Large Form Factor Hard Drive Blank Kit 666986-B21

HP Small Form Factor Hard Drive Blank Kit 666987-B21

HP Networking

Gigabit Ethernet adapters

HP NC112T PCI Express Gigabit Server Adapter 503746-B21

HP NC365T 4-port Ethernet Server Adapter 593722-B21

HP Ethernet 1Gb 4-port 331T Adapter 647594-B21

HP Ethernet 1Gb 2-port 332T Adapter 615732-B21

HP Ethernet 1Gb 2-port 361T Adapter 652497-B21

10 Gigabit Ethernet adapters

HP NC523SFP 10Gb 2-port Server Adapter 593717-B21

HP NC552SFP 10Gb 2-port Ethernet Server Adapter 614203-B21

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

NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs

HP Power Supplies

NOTE: Mixing of power supplies in the same server is not supported. All power supplies inside a server must be exactly the same model. **NOTE:** Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor.

HP Common Slot Platinum Plus Power Supply Kits

NOTE: The following Power Supplies offer 94% Efficiency with support for Intelligent Power Discovery.

HP 460W Common Slot Platinum Plus Hot Plug Power Supply Kit 656362-B21

HP 750W Common Slot Platinum Plus Hot Plug Power Supply Kit 656363-B21

Enablement Kit

HP Redundant Enablement Kit 664046-B21

NOTE: Redundant Enablement Kit (part # 664046-B21) is required for any common slot power supply.

NOTE: Power Specification and Technical Content for supported power supplies can be found at:

http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html

QuickSpecs

HP ProLiant ML350e Generation 8 (Gen8)

Additional Options

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

| | | |
|---|--|--------|
| HP Insight Software | HP Insight Control | |
| | HP Insight Control including 1yr 24x7 Technical Support and Updates Single Server License | C6N27A |
| | HP Insight Control Server Provisioning Media Kit | BD883A |
| | HP Insight Management Media Kit | C6N31A |
| | 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://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html | |
| | HP Integrated Lights-Out (iLO) | |
| | HP iLO Essentials | |
| HP Integrated Lights-Out Essentials including 3yr 24x7 Tech Support and Updates Single Svr License | BD774A | |
| HP Integrated Lights-Out Essentials including 1yr 24x7 Tech Support and Updates Single Svr License | BD775A | |
| HP Integrated Lights-Out (iLO) Advanced for ProLiant | | |
| HP iLO Advanced including 1yr 24x7 Technical Support and Updates Electronic License | TA850AAE | |
| 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 | |
| NOTE: For additional license options please see the QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/14276_div/14276_div.html | | |
| NOTE: For more information, visit: http://www.hp.com/go/ilo . | | |

High Performance Clusters

| | | |
|--|--|--------|
| | HP Insight Cluster Management Utility | |
| | HP Insight Cluster Management Utility 1yr 24x7 Flexible License | QL803B |
| | HP Insight Cluster Management Utility for ConvergedSystem 3yr 24x7 Flexible License | G2E81A |
| | 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_div/12612_div.html (Worldwide) | | |

Additional Options

| | | |
|-------------------------------|---|------------|
| HP Security | HP Trusted Platform Module Option | 488069-B21 |
| | <p>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.</p> <p>NOTE: ProLiant OS pre-installed units will come with the partition required for TPM deployment.</p> <p>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.</p> | |
| | HP Security Bezel Kit | 660584-B21 |
| | NOTE: For restricting access to rack models only. Tower to Rack Conversion Tray kit (part # 665939-B21 needs to be purchased). | |
| HP Storage Controllers | SAS Controllers | |
| | HP Smart Array P222 Controller | |
| | HP Smart Array P222/512 FBWC 6Gb 1-port Int/1-port Ext SAS Controller | 631667-B21 |
| | HP Smart Array P420 Controller | |
| | HP Smart Array P420/2GB FBWC 6Gb 2-ports Int SAS Controller | 631671-B21 |
| | HP Smart Array P420/1GB FBWC 6Gb 2-ports Int SAS Controller | 631670-B21 |
| | HP Smart Array P421 Controller | |
| | HP Smart Array P421/2GB FBWC 6Gb 2-ports Ext SAS Controller | 631674-B21 |
| | HP Smart Array P421/1GB FBWC 6Gb 2-ports Ext SAS Controller | 631673-B21 |
| | HP Smart Array P822 Controller | |
| | HP Smart Array P822/2GB FBWC 6Gb 2-ports-Int/4-ports Ext SAS Controller | 615418-B21 |
| | NOTE: Please note that this platform can support only one (1) P822 controller. This controller can only be installed in expansion slot#2. | |
| | Optional Upgrades | |
| | HP 2GB P-series Smart Array Flash Backed Write Cache | 631681-B21 |
| | HP 512MB B-series 36 inch Dynamic Smart Array Flash Backed Write Cache for ML/DL | 631922-B21 |
| | HP SmartCache No Media 24x7 Technical Support 1 Svr License | D7S26A |
| | HP SmartCache No Media 24x7 Technical Support Flexible License | D7S27A |
| | HP SmartCache No Media 24x7 Technical Support Electronic License | D7S27AAE |
| | NOTE: Please see the QuickSpecs for Technical Specifications and additional information: | |
| | http://h18000.www1.hp.com/products/quickspecs/14227_div/14227_div.html (Smart Array P222 Controller) | |
| | http://h18000.www1.hp.com/products/quickspecs/14228_div/14228_div.html (Smart Array P420 Controller) | |
| | http://h18000.www1.hp.com/products/quickspecs/14229_div/14229_div.html (Smart Array P421 Controller) | |
| | http://h18000.www1.hp.com/products/quickspecs/14624_div/14624_div.html (Smart Array P822 Controller) | |
| | http://h18000.www1.hp.com/products/quickspecs/14744_div/14744_div.html (Dynamic Smart Array Controllers) | |
| | HP Host Bus Adapters | |

Additional Options

| | |
|---------------------------------------|------------|
| HP H220 Host Bus Adapter | 650933-B21 |
| HP H221 PCIe 3.0 SAS Host Bus Adapter | 729552-B21 |
| HP H222 Host Bus Adapter | 650926-B21 |

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

http://h18004.www1.hp.com/products/quickspecs/14336_div/14336_div.html
(HBA 220)

http://h18004.www1.hp.com/products/quickspecs/14222_div/14222_div.html
(HBA 221)

http://h18004.www1.hp.com/products/quickspecs/14337_div/14337_div.html
(HBA 222)

SCSI HBA

| | |
|--|------------|
| HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter | 412911-B21 |
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NOTE: Supports external drive attach.

NOTE: Please see the following QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html

HP Tape Backup

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

NOTE: Installation of tape drive requires ordering of 2nd Media Bay Cage, Part Number 661618-B21.

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|---|--------|
| HP StoreEver DAT 160 SCSI Internal Tape Drive | Q1573B |
| HP StoreEver LTO-5 Ultrium 3000 SAS External Tape Drive | EH958B |
| HP StoreEver LTO-6 Ultrium 6250 Tape Drive in 1U Rack-mount Kit | C0L99A |
| HP StoreEver LTO-6 Ultrium 6650 SAS Internal Tape Drive | EH963A |
| HP StoreEver LTO-6 Ultrium 6650 SAS External Tape Drive | EH964A |
| HP StoreEver LTO-6 Ultrium 6250 Internal Tape Drive | EH969A |
| HP StoreEver LTO-6 Ultrium 6250 External Tape Drive | EH970A |
| HP StoreEver 1/8 G2 LTO-6 Ultrium 6250 FC Tape Autoloader | C0H19A |

HP Tape Storage Systems**HP StoreEver MSL6480**

| | |
|---|--------|
| HP StoreEver MSL6480 Scalable Base Module | QU625A |
|---|--------|

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

http://h18000.www1.hp.com/products/quickspecs/14604_div/14604_div.html
(Worldwide)

HP Disk Backup

NOTE: For the complete range of RDX drives and media see:

<http://www.hp.com/go/rdx>. For hardware and software compatibility of HP disk backup products see: <http://www.hp.com/storage/SPOCK>.

HP RDX Removable Disk Backup System

| | |
|---|--------|
| HP RDX320 USB3.0 External Disk Backup System | B7B63A |
| HP RDX500 USB3.0 Internal Disk Backup System | B7B64A |
| HP RDX500 USB3.0 External Disk Backup System | B7B66A |
| HP RDX1000 USB3.0 Internal Disk Backup System | B7B67A |
| HP RDX1000 USB3.0 External Disk Backup System | B7B69A |

NOTE: Please see the QuickSpecs for additional part numbers, Technical Specifications, and additional information:

Additional Options

http://h18000.www1.hp.com/products/quickspecs/13036_div/13036_div.html
(Worldwide)

HP Disk Storage Systems Disk Enclosures

HP D2600 w/12 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 48TB Bundle E7W32A

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

http://h18000.www1.hp.com/products/quickspecs/13404_div/13404_div.html
(Worldwide)

HP D6000 w/70 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 280TB Bundle E7W31A

HP D6000 w/35 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 140TB Bundle E7W30A

HP D6000 w/70 3TB 6G SAS 7.2K LFF Dual port MDL HDD 210TB Bundle QQ700A

HP D6000 w/35 3TB 6G SAS 7.2K LFF Dual port MDL HDD 105TB Bundle QQ699A

HP D6000 w/70 2TB 6G SAS 7.2K LFF Dual port MDL HDD 140TB Bundle QQ698A

HP D6000 w/35 2TB 6G SAS 7.2K LFF Dual port MDL HDD 70TB Bundle QQ697A

HP D6000 Dual I/O Module Disk Enclosure QQ695A

NOTE: Please see the QuickSpecs for additional part numbers, Technical Specifications, and additional information:

http://h18000.www1.hp.com/products/quickspecs/14419_div/14419_div.html
(Worldwide)

HP Storage Options**Converged Network Adapter**

HP CN1000Q Dual Port Converged Network Adapter BS668A

HP CN1100E Dual Port Converged Network Adapter BK835A

HP StoreFabric CN1100R Dual Port Converged Network Adapter QW990A

HP Uninterruptible Power Systems**HP Tower UPS****HP T1500 G3 UPS Models**

HP T1500 G3 1400VA INTL Tower Uninterruptible Power System AF451A

HP T1500 G3 1400VA NA Tower Uninterruptible Power System AF450A

HP T1500J JP Uninterruptible Power System AF458A

HP T1000 G3 UPS Models

HP T1000 G3 1000VA INTL Tower Uninterruptible Power System AF449A

HP T1000 G3 1000VA NA Tower Uninterruptible Power System AF448A

HP T1000J JP Uninterruptible Power System AF457A

NOTE: Please see the QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/13160_div/13160_div.html
(Worldwide)

HP Rack-mountable UPS**HP R1500 G3 Uninterruptible Power Supply (UPS)**

HP R1.5kVA G3 1U INTL Uninterruptible Power System AF471A

HP R1.5kVA G3 1U JP/TW Uninterruptible Power System AF470A

HP R1.5kVA G3 1U NA Uninterruptible Power System AF469A

NOTE: Please see the QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/14059_div/14059_div.html
(Worldwide)

HP R/T3000 G2 Uninterruptible Power System (UPS)

HP R/T3000 G2 2U Detachable Cord High Voltage INTL Uninterruptible Power System AF468A

Additional Options

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|---|--------|
| HP R/T3000 G2 2U L530 Low Voltage NA/JP Uninterruptible Power System | AF466A |
| HP R/T3000 G2 2U L620 High Voltage NA/JP Uninterruptible Power System | AF467A |
| NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14058_div/14058_div.html (Worldwide) | |
| R5000 Uninterruptible Power System (UPS) | |
| HP R5KVA 3U IEC309-32A High Voltage INTL Uninterruptible Power System | AF461A |
| HP R5KVA 3U L630 High Voltage NA/JP Uninterruptible Power System | AF460A |
| NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14109_div/14109_div.html (Worldwide) | |
| R7000 Uninterruptible Power System (UPS) | |
| HP R7KVA 4U 50A High Voltage NA/JP Uninterruptible Power System | AF462A |
| HP R7KVA 4U IEC-32A High Voltage INTL Uninterruptible Power System | AF463A |
| NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14110_div/14110_div.html (Worldwide) | |
| NOTE: For additional information on HP Uninterruptible Power Systems please go to: www.hp.com/servers/rackups . | |
| NOTE: For additional information on sizing your server, please reference: http://www.upsizer.com . | |
| NOTE: Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords . | |

| | | |
|--|---|--------|
| HP Basic Power Distribution Units (bPDU) | HP Basic Power Distribution Unit: 1U/OU Version | |
| | HP 1.9kVA 120 Volt L5-20 Input (12xNEMA 5-20R) NA/JP Basic PDU | H5M54A |
| | HP 3.6kVA 200-240 Volt Detachable C20 Input (12xC13) WW Basic PDU | H5M56A |
| | HP Basic Power Distribution Unit: Half Height Version | |
| | HP 2.8kVA 120 Volt L5-30 Input (18xNEMA 5-20R) NA/JP Basic PDU | H5M55A |
| | HP 3.6kVA 200-240 Volt Detachable C20 Input (18xC13) WW Basic PDU | H5M57A |
| | HP 4.9kVA 208 Volt L6-30 Input (20xC13) NA/JP Basic PDU | H5M58A |
| | HP 7.3kVA 230 Volt IEC309 32A Input (20xC13) INTL Basic PDU | H5M68A |
| | HP 8.6kVA 208 Volt L15-30 3-Phase Input (18xC13) NA/JP Basic PDU | H5M61A |
| | HP Basic Power Distribution Unit: Mid Height Version | |
| | HP 4.9kVA 208 Volt L6-30 Input (24xC13/6xC19) NA/JP Basic PDU | H5M59A |
| | HP 7.3kVA 230 Volt IEC309 32A Input (24xC13/6xC19) INTL Basic PDU | H5M70A |
| | HP 8.3kVA 208 Volt CS8265C Input (30xC13/6xC19) NA/JP Basic PDU | H5M60A |
| | HP 11kVA 230 Volt IEC309 63A Input (30xC13/6xC19) INTL Basic PDU | H5M71A |
| | HP Hardwired 200-240 Volt Input (30xC13/6xC19) WW Basic PDU | H5M75A |
| | HP 5.7kVA 208 Volt L21-20 3-Phase Input (24xC13/3xNEMA 5-20R) NA/JP Basic PDU | H5M63A |
| | HP 8.6kVA 208 Volt L21-30 3-Phase Input (24xC13/3xC19/3xNEMA 5-20R) NA/JP Basic PDU | H5M64A |
| | HP 8.6kVA 208 Volt L15-30 3-Phase Input (24xC13/6xC19) NA/JP Basic PDU | H5M62A |
| | HP 11kVA 400 Volt IEC309 16A 3-Phase Input (30xC13/6xC19) INTL Basic PDU | H5M72A |
| | HP Basic Power Distribution Unit: Full Height Version | |
| HP 11kVA 400 Volt IEC309 16A 3-Phase Input (36xC13/6xC19) INTL Basic PDU | H5M73A | |

Additional Options

| | |
|--|--------|
| HP 11kVA 400 Volt IEC309 30A 3-Phase Input (36xC13/6xC19) NA Basic PDU | H5M67A |
| HP Basic Power Distribution Unit: 480/277 Volt Version | |
| HP 13.2kVA 480 Volt IEC309 30A 3-Phase Input (15 Outlet) NA Basic PDU | H3X07A |
| HP 19.9kVA 480 Volt IEC309 30A 3-Phase Input (30 Outlet) NA Basic PDU | H3X08A |
| HP 800VA - 277V Input / 230V Output NA Rack Mount Transformer | H3X09A |
| NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14557_div/14557_div.html (Worldwide) | |
| NOTE: Additional HP Power Distribution Units are available. For a complete list of all HP PDUs and additional information please visit www.hp.com/go/rackandpower . | |

HP Remote Monitoring Power Distribution Units (mPDU)**HP Remote Monitored Power Distribution Unit: 1U Version**

| | |
|---|--------|
| HP 2.8kVA 120 Volt L5-30 Input (12xNEMA 5-20R)NA/JP Monitored PDU | D9N43A |
| HP 3.6kVA 200-240 Volt Detachable C20 Input (12xC13) WW Monitored PDU | D9N46A |
| HP 4.9kVA 208 Volt L6-30 Input (12xC13) NA/JP Monitored PDU | D9N44A |

HP Remote Monitored Power Distribution Unit: Half Height Version

| | |
|---|--------|
| HP 3.6kVA 200-240 Volt Detachable C20 Input (16xC13) WW Monitored PDU | D9N45A |
|---|--------|

HP Remote Monitored Power Distribution Unit: Mid Height Version

| | |
|---|--------|
| HP 4.9kVA 208 Volt L6-30 Input (20xC13/4xC19) NA/JP Monitored PDU | D9N47A |
| HP 7.3kVA 230 Volt IEC309 32A Input (20xC13/4xC19) INTL Monitored PDU | D9N48A |
| HP 8.6kVA 208 Volt L15-30 3-Phase Input (18xC13/3xC19) NA/JP Monitored PDU | D9N51A |
| HP 5.7kVA 208 Volt L21-20 3-Phase Input (18xC13/3xNEMA 5-20R) NA/JP Monitored PDU | D9N52A |
| HP 8.6kVA 208 Volt L21-30 3-Phase Input (20xC13/3xC19/3xNEMA 5-20R) NA/JP Monitored PDU | D9N53A |
| HP 11kVA 400 Volt IEC309 16A 3-Phase Input (18xC13/3xC19) INTL Monitored PDU | D9N55A |

HP Remote Monitored Power Distribution Unit: Full Height Version

| | |
|---|--------|
| HP 8.3kVA 208 Volt CS8265C Input (30xC13/3xC19) NA Monitored PDU | D9N49A |
| HP 7.3kVA 230 Volt IEC309 32A Input (32xC13/4xC19) INTL Monitored PDU | D9N50A |
| HP 11kVA 400 Volt IEC309 16A 3-Phase Input (30xC13/3xC19) INTL Monitored PDU | D9N57A |
| HP 14.4kVA 208 Volt CS8365C 3-Phase Input (12xC13/12xC19)NA Monitored PDU | D9N58A |
| HP 16.6kVA 400 Volt IEC309 30A 3-Phase Input (30xC13/3xC19) NA Monitored PDU | D9N61A |
| HP 16.6kVA 400 Volt IEC309 30A 3-Phase Input (12xC13/12xC19) NA Monitored PDU | D9N62A |
| HP 17.3kVA 208 Volt IEC309 60A 3-Phase Input (24xC13/3xC19) NA/JP Monitored PDU | D9N54A |
| HP 17.3kVA 208 Volt IEC309 60A 3-Phase Input (12xC13/12xC19) NA/JP Monitored PDU | D9N59A |
| HP 17.3kVA 208 Volt IEC309 60A 3-Phase Watertight Input (12xC13/12xC19) NA/JP Monitored PDU | G9Z07A |
| HP 19.9kVA 480 Volt 3-Phase (30 Outlet) NA Monitored PDU | D9N63A |
| HP 22kVA 400 Volt IEC309 32A 3-Phase Input (12xC13/12xC19) INTL Monitored PDU | D9N60A |
| HP 22kVA 400 Volt IEC309 32A 3-Phase Input (30xC13/3xC19) INTL Monitored PDU | D9N56A |
| HP 22kVA 400 Volt IEC309 32A 3-Phase Watertight Input (12xC13/12xC19) INTL Monitored PDU | G9Z08A |

HP Environmental Sensor for Remote Monitored PDUs

| | |
|---|--------|
| HP Environmental Sensor for Remote Monitored PDUs | E2D53A |
|---|--------|

Additional Options

NOTE: Please see the QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/14669_div/14669_div.html

(Worldwide)

| | | |
|---|---|--------|
| HP Intelligent Power Distribution Units (iPDU) | iPDU Core Units | |
| | HP 4.9kVA 24A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit | AF520A |
| | HP 8.3kVA 40A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit | AF521A |
| | HP 8.6kVA 24A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit | AF522A |
| | HP 14.4kVA 40A Three Phase NA/JP Intelligent Modular Power Distribution Unit | AF533A |
| | HP 17.3kVA 48A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit | AF523A |
| | HP 7.3kVA 32A Single Phase INTL Core Intelligent Modular Power Distribution Unit | AF525A |
| | HP 11kVA 16A Three Phase INTL Core Intelligent Modular Power Distribution Unit | AF526A |
| | HP 22kVA 32A Three Phase INTL Core Intelligent Modular Power Distribution Unit | AF527A |
| | HP 17.3kVA 48A 208V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit | AF535A |
| | HP 17.3kVA 24A 415V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit | AF537A |
| | HP 22kVA 32A 400V Three Phase 12 Outlet Core INTL Intelligent Power Distribution Unit | AF538A |
| | iPDU Kits with Standard Extension Bars | |
| | HP 4.9kVA 24A Single Phase NA/JP Intelligent Modular Power Distribution Kit | AF531A |
| | HP 8.6kVA 24A Three Phase NA/JP Intelligent Modular Power Distribution Kit | AF532A |
| | HP 7.3kVA 32A Single Phase INTL Intelligent Modular Power Distribution Kit | AF534A |
| | iPDU Extension Bars | |
| | HP 5xC13 Intelligent PDU Extension Bar G2 Kit | AF547A |
| | HP 5xC13 Outlets Power and UID LEDs Pair Standard Extension Bar | AF528A |
| | NOTE: Please see the QuickSpecs for Technical Specifications and additional information: | |
| http://h18000.www1.hp.com/products/quickspecs/13650_div/13650_div.html | | |
| (Worldwide) | | |
| NOTE: Additional HP Power Distribution Units are available. For a complete list of all HP PDUs and additional information please visit: www.hp.com/go/rackandpower . | | |

| | | |
|--|--|--------|
| HP Rack Series | HP Intelligent Series Rack | |
| | HP 636 1075mm Pallet Intelligent Series Rack | BW895A |
| | HP 636 1075mm Shock Intelligent Series Rack | BW896A |
| | HP 642 1075mm Pallet Intelligent Series Rack | BW903A |
| | HP 642 1075mm Shock Intelligent Series Rack | BW904A |
| | HP 647 1075mm Pallet Intelligent Series Rack | BW911A |
| | HP 647 1075mm Shock Intelligent Series Rack | BW912A |
| NOTE: Please see the QuickSpecs for Technical Specifications such as height, width, depth, weight, and color: | | |
| http://h18000.www1.hp.com/products/quickspecs/14223_div/14223_div.html | | |
| (Worldwide) | | |
| NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower . | | |

| | |
|------------------------|---------------------------------------|
| HP Rack Options | HP Location Discovery Services |
|------------------------|---------------------------------------|

Additional Options

| | |
|-------------------------------|--------|
| HP 36U Location Discovery Kit | BW945A |
| HP 42U Location Discovery Kit | BW946A |
| HP 47U Location Discovery Kit | BW947A |

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/14429_div/14429_div.html
(Worldwide)

HP TFT7600 G2 KVM Console and Monitor (TFT7600 G2)

| | |
|---|--------|
| HP TFT7600 G2 KVM Console Rackmount Keyboard US Monitor | AZ870A |
| HP TFT7600 G2 KVM Console Rackmount Keyboard UK Monitor | AZ871A |
| HP TFT7600 G2 KVM Console Rackmount Keyboard DE Monitor | AZ872A |
| HP TFT7600 G2 KVM Console Rackmount Keyboard FR Monitor | AZ873A |
| HP TFT7600 G2 KVM Console Rackmount Keyboard IT Monitor | AZ874A |
| HP TFT7600 G2 KVM Console Rackmount Keyboard ES Monitor | AZ875A |
| HP TFT7600 G2 KVM Console Rackmount Keyboard DK Monitor | AZ876A |
| HP TFT7600 G2 KVM Console Rackmount Keyboard NO Monitor | AZ877A |
| HP TFT7600 G2 KVM Console Rackmount Keyboard SE/FI Monitor | AZ878A |
| HP TFT7600 G2 KVM Console Rackmount Keyboard CH Monitor | AZ879A |
| HP TFT7600 G2 KVM Console Rackmount Keyboard PT Monitor | AZ880A |
| HP TFT7600 G2 KVM Console Rackmount Keyboard BE Monitor | AZ881A |
| HP TFT7600 G2 KVM Console Rackmount Keyboard JP Monitor | AZ882A |
| HP TFT7600 G2 KVM Console Rackmount Keyboard RU Monitor | AZ883A |
| HP TFT7600 G2 KVM Console Rackmount Keyboard Intl Monitor | AZ884A |
| HP TFT7600 G2 KVM Console Rackmount Keyboard US TAA Monitor | AZ885A |

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13731_div/13731_div.html
(Worldwide)

HP USB Keyboard and Mouse

| | |
|---|------------|
| HP USB BFR with PVC Free US Keyboard/Mouse Kit | 631341-B21 |
| HP USB BFR with PVC Free UK Keyboard/Mouse Kit | 631344-B21 |
| HP USB BFR with PVC Free FR Keyboard/Mouse Kit | 631346-B21 |
| HP USB BFR with PVC Free ES Keyboard/Mouse Kit | 631348-B21 |
| HP USB BFR with PVC Free DE Keyboard/Mouse Kit | 631358-B21 |
| HP USB BFR with PVC Free JP Keyboard/Mouse Kit | 631360-B21 |
| HP USB BFR with PVC Free IT Keyboard/Mouse Kit | 631362-B21 |
| HP USB BFR with PVC Free CN Keyboard/Mouse Kit | 631364-B21 |
| HP USB BFR with PVC Free AE Keyboard/Mouse Kit | 638212-B21 |
| HP USB BFR with PVC Free RU Keyboard/Mouse Kit | 638214-B21 |
| HP USB BFR with PVC Free IN Keyboard/Mouse Kit | 672097-D63 |
| HP USB BFR with PVC Free AP-Intl Keyboard/Mouse Kit | 672097-373 |
| HP USB BFR with PVC Free Intl Keyboard/Mouse Kit | 672097-B33 |
| HP USB BFR with PVC Free PT Keyboard/Mouse Kit | 672097-133 |
| HP USB BFR with PVC Free TR Keyboard/Mouse Kit | 672097-143 |
| HP USB BFR with PVC Free CZ Keyboard/Mouse Kit | 672097-223 |
| HP USB BFR with PVC Free FI Keyboard/Mouse Kit | 672097-353 |

Additional Options

| | |
|--|------------|
| HP USB BFR with PVC Free SE Keyboard/Mouse Kit | 672097-103 |
| HP USB BFR with PVC Free CH Keyboard/Mouse Kit | 672097-113 |
| HP USB BFR with PVC Free KR Keyboard/Mouse Kit | 672097-KD3 |

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13792_div/13792_div.html
(Worldwide)

HP Server Console Switches

| | |
|---|--------|
| HP Server Console 0x2x8 Port Analog Switch | AF616A |
| HP Server Console 0x2x16 Port Analog Switch | AF617A |
| HP TAA 0x2x16xKVM Server Console G2 Switch | AF626A |
| HP KVM Console USB Interface Adapter | AF628A |

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/11834_div/11834_div.html
(Worldwide)

HP Server Console Switch G2 with Virtual Media & CAC

| | |
|--|------------|
| HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software | AF618A |
| HP 0x2x32 KVM Server Console Switch G2 with Virtual Media CAC Software | AF619A |
| HP KVM Console USB 2.0 Virtual Media CAC Interface Adapter | AF629A |
| HP KVM CAT5 1-pack USB Interface Adapter | 336047-B21 |

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13475_div/13475_div.html
(Worldwide)

HP IP Console Switch G2 with Virtual Media & CAC

| | |
|---|--------|
| HP 1x4 USB/PS2 KVM Console Switch | AF611A |
| HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software | AF620A |
| HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software | AF621A |
| HP 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software | AF622A |

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13474_div/13474_div.html
(Worldwide)

HP USB and SD Options**HP Flash Media Kits for USB Drives**

| | |
|--|------------|
| HP 8GB USB Enterprise Mainstream Flash Media Drive Key Kit | 737953-B21 |
|--|------------|

HP Enterprise Mainstream Flash Media Kits for Memory Cards

| | |
|--|------------|
| HP 8GB SD Enterprise Mainstream Flash Media Kit | 726113-B21 |
| HP 32GB SD Enterprise Mainstream Flash Media Kit | 700136-B21 |

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13971_div/13971_div.html

HP Care Pack Services**Proactive Care**

NOTE: Collaborative Support plus Proactive services delivered by the onshore, local language Advanced Solution Center (ASC), end-to-end case ownership from a Technical Solution Specialists and Technical Account Manager who remotely delivers firmware/software revision management, proactive scans and incident

Additional Options

trend reports. Recommended for customers running a virtualized infrastructure and/or customers who desire an enhanced call support experience.

HP 3 year 4 hour 24x7 ProLiant ML350e Proactive Care Service U6C93E

HP 3 year 4 hour 24x7 with Defective Media Retention ProLiant ML350e Proactive Care Service U6C94E

HP 3 year Next business day ProLiant ML350e Proactive Care Service U6C85E

HP 3 year Next business day with Defective Media Retention ProLiant ML350e Proactive Care Service U6C86E

Installation Services

NOTE: Reduce the time required to get your system up and running and help minimize disruptions to your business.

HP Install ProLiant ML350e Service U6D41E

HP Startup ProLiant ML350e Service U6D43E

NOTE: For more information, customer/resellers can contact:
<http://www.hp.com/services/carepack>

QuickSpecs

HP ProLiant ML350e Generation 8 (Gen8)

Memory

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

DDR3 memory population guidelines

For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool:

www.hp.com/go/ddr3memory-configurator

General Guidelines:

- White DIMM slots denote the first slot of a channel. For 1 DPC (DIMM per channel) populate white slots only.
- 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, balance the total memory capacity between all installed 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
- Do not mix UDIMMs, RDIMMs or LRDIMMs
- Quad rank LR DIMMs are supported at 3 DIMMs per channel.
- DIMMs of different voltages (1.35V & 1.5V) may be mixed in any order
 - The system will power them at the higher voltage
- DIMMs of different speed grades may be mixed in any order
 - The system will select a common optimal speed
- Memory speed is a function of the processor QPI bus speed.

Population Guidelines:

- There are three (3) channels per processor; six (6) channels per server
- There are two (2) DIMM slots for each memory channel; twelve (12) total slots
- Memory channel 1 consists of the two (2) DIMMs that are furthest from the processor
- Memory channel 3 consists of the two (2) DIMMs that are closest to the processor

| DIMM slot/capacity/populated speed table | | | | | | | | | | | | | |
|--|---------------------------|------|------|----------------|------|------|------|------------------------------------|------|----------------|------|--------|------|
| DIMM Type -> | Registered DIMMs (RDIMMs) | | | | | | | Unbuffered with ECC DIMMs (UDIMMs) | | | | | |
| DIMM Rank -> | Single Rank (1R) | | | Dual Rank (2R) | | | | Single Rank (1R) | | Dual Rank (2R) | | | |
| DIMM Capacity -> | 4GB | 4GB | 8GB | 8GB | 8GB | 16GB | 16GB | 2GB | 2GB | 4GB | 4GB | 8GB | 8GB |
| DIMM Native Speed (MHz) -> | 1333 | 1600 | 1600 | 1333 | 1600 | 1333 | 1600 | 1333 | 1600 | 1333 | 1600 | 1333 | 1600 |
| Voltage | LV | Std | Std | LV | Std | LV | Std | LV | Std | LV | Std | LV | Std |
| SLOTS THAT CAN BE POPULATED | | | | | | | | | | | | | |
| 12 slot servers | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| MAXIMUM CAPACITY (GB)* | | | | | | | | | | | | | |
| 12 slot servers | 48 | 48 | 96 | 96 | 96 | 192 | 192 | 24 | 24 | 48 | 48 | 96 | 96 |
| POPULATED DIMM SPEED (MHz) | | | | | | | | | | | | | |
| 1 DIMM Per Channel | 1333 | 1600 | 1600 | 1333 | 1600 | 1333 | 1600 | 1333 | 1600 | 1333 | 1600 | 1333 | 1600 |
| 2 DIMM Per Channel | 1333 | 1600 | 1600 | 1333 | 1600 | 1333 | 1600 | 1333** | 1600 | 1333** | 1600 | 1333** | 1600 |

Please note:



QuickSpecs

HP ProLiant ML350e Generation 8 (Gen8)

Memory

Memory speed is a function of the processor QPI bus speed.

* Maximum capacity will vary based on individual server platform qualification schedule

** For HP SmartMemory, UDIMM is supported at 2DPC@DDR3-1333. Third party memory may only support up to 2DPC@DDR3-1066.

DIMM slot and configuration diagrams

Basic memory slot & population diagram

- Population order; start with "A" first, "B" second, "C" third, etc.

| 12 DIMM SLOTS (6 per CPU node) | | | | | |
|--------------------------------|-------------|------------------|-------------|------------------|--------|
| | Processor 1 | | Processor 2 | | |
| | slot # | population order | slot # | population order | |
| Chnl 1 | 6 | A | 1 | A | Chnl 1 |
| | 5 | D | 2 | D | |
| Chnl 2 | 4 | B | 3 | B | Chnl 2 |
| | 3 | E | 4 | E | |
| Chnl 3 | 2 | C | 5 | C | Chnl 3 |
| | 1 | F | 6 | F | |

Standard memory configuration (1 CPU model) - Entry models

- 2GB, consisting of one (1) 2GB single-rank PC3L-10600E-9 UDIMM

| | Processor 1 | | Processor 2 | | |
|--------|-------------|------------------|-------------|------------------|--------|
| | slot # | population order | slot # | population order | |
| Chnl 1 | 6 | A; 2GB UDIMM | 1 | A; empty | Chnl 1 |
| | 5 | D; empty | 2 | D; empty | |
| Chnl 2 | 4 | B; empty | 3 | B; empty | Chnl 2 |
| | 3 | E; empty | 4 | E; empty | |
| Chnl 3 | 2 | C; empty | 5 | C; empty | Chnl 3 |
| | 1 | F; empty | 6 | F; empty | |

Standard memory configuration (1 CPU model) - Base models

- 4GB, consisting of one (1) 4GB dual-rank PC3L-10600E-9 UDIMM

| | Processor 1 | | Processor 2 | | |
|--------|-------------|------------------|-------------|------------------|--------|
| | slot # | population order | slot # | population order | |
| Chnl 1 | 6 | A; 4GB UDIMM | 1 | A; empty | Chnl 1 |
| | 5 | D; empty | 2 | D; empty | |
| Chnl 2 | 4 | B; empty | 3 | B; empty | Chnl 2 |

QuickSpecs

HP ProLiant ML350e Generation 8 (Gen8)

Memory

| | | | | | |
|--------|---|----------|---|----------|--------|
| | 3 | E; empty | 4 | E; empty | |
| Chnl 3 | 2 | C; empty | 5 | C; empty | Chnl 3 |
| | 1 | F; empty | 6 | F; empty | |

Standard memory configuration (1 CPU model) - Performance models

- 8GB, consisting of two (2) 4GB dual-rank PC3L-10600E-9 UDIMMs

| | Processor 1 | | Processor 2 | | |
|--------|-------------|------------------|-------------|------------------|--------|
| | slot # | population order | slot # | population order | |
| Chnl 1 | 6 | A; 4GB UDIMM | 1 | A; empty | Chnl 1 |
| | 5 | D; empty | 2 | D; empty | |
| Chnl 2 | 4 | B; 4GB UDIMM | 3 | B; empty | Chnl 2 |
| | 3 | E; empty | 4 | E; empty | |
| Chnl 3 | 2 | C; empty | 5 | C; empty | Chnl 3 |
| | 1 | F; empty | 6 | F; empty | |

RDIMM maximum configuration (1 CPU model)

- 96GB, consisting of six (6) 16GB dual-rank PC3L-10600R-9 RDIMMs

| | Processor 1 | | Processor 2 | | |
|--------|-------------|------------------|-------------|------------------|--------|
| | slot # | population order | slot # | population order | |
| Chnl 1 | 6 | A; 16GB RDIMM | 1 | A; empty | Chnl 1 |
| | 5 | D; 16GB RDIMM | 2 | D; empty | |
| Chnl 2 | 4 | B; 16GB RDIMM | 3 | B; empty | Chnl 2 |
| | 3 | E; 16GB RDIMM | 4 | E; empty | |
| Chnl 3 | 2 | C; 16GB RDIMM | 5 | C; empty | Chnl 3 |
| | 1 | F; 16GB RDIMM | 6 | F; empty | |

UDIMM maximum configuration (1 CPU model)

- 48GB, consisting of six (6) 8GB dual-rank PC3L-10600E-9 UDIMMs

| | Processor 1 | | Processor 2 | | |
|--------|-------------|------------------|-------------|------------------|--------|
| | slot # | population order | slot # | population order | |
| Chnl 1 | 6 | A; 8GB RDIMM | 1 | A; empty | Chnl 1 |
| | 5 | D; 8GB RDIMM | 2 | D; empty | |
| Chnl 2 | 4 | B; 8GB RDIMM | 3 | B; empty | Chnl 2 |
| | 3 | E; 8GB RDIMM | 4 | E; empty | |

QuickSpecs

HP ProLiant ML350e Generation 8 (Gen8)

Memory

| | | | | | |
|--------|---|--------------|---|----------|--------|
| Chnl 3 | 2 | C; 8GB RDIMM | 5 | C; empty | Chnl 3 |
| | 1 | F; 8GB RDIMM | 6 | F; empty | |

RDIMM maximum configuration (2 CPU model)

- " 192GB, consisting of twenty (20) 16GB dual-rank PC3L-10600R-9 RDIMMs

| | Processor 1 | | Processor 2 | | |
|--------|-------------|------------------|-------------|------------------|--------|
| | slot # | population order | slot # | population order | |
| Chnl 1 | 6 | A; 16GB RDIMM | 1 | A; 16GB RDIMM | Chnl 1 |
| | 5 | D; 16GB RDIMM | 2 | D; 16GB RDIMM | |
| Chnl 2 | 4 | B; 16GB RDIMM | 3 | B; 16GB RDIMM | Chnl 2 |
| | 3 | E; 16GB RDIMM | 4 | E; 16GB RDIMM | |
| Chnl 3 | 2 | C; 16GB RDIMM | 5 | C; 16GB RDIMM | Chnl 3 |
| | 1 | F; 16GB RDIMM | 6 | F; 16GB RDIMM | |

UDIMM maximum configuration (2 CPU model)

- 96GB, consisting of twelve (12) 8GB dual-rank PC3L-10600E-9 UDIMMs

| | Processor 1 | | Processor 2 | | |
|--------|-------------|------------------|-------------|------------------|--------|
| | slot # | population order | slot # | population order | |
| Chnl 1 | 6 | A; 8GB RDIMM | 1 | A; 8GB RDIMM | Chnl 1 |
| | 5 | D; 8GB RDIMM | 2 | D; 8GB RDIMM | |
| Chnl 2 | 4 | B; 8GB RDIMM | 3 | B; 8GB RDIMM | Chnl 2 |
| | 3 | E; 8GB RDIMM | 4 | E; 8GB RDIMM | |
| Chnl 3 | 2 | C; 8GB RDIMM | 5 | C; 8GB RDIMM | Chnl 3 |
| | 1 | F; 8GB RDIMM | 6 | F; 8GB RDIMM | |

NOTE: Capacity references are rounded to the common Gigabyte values.

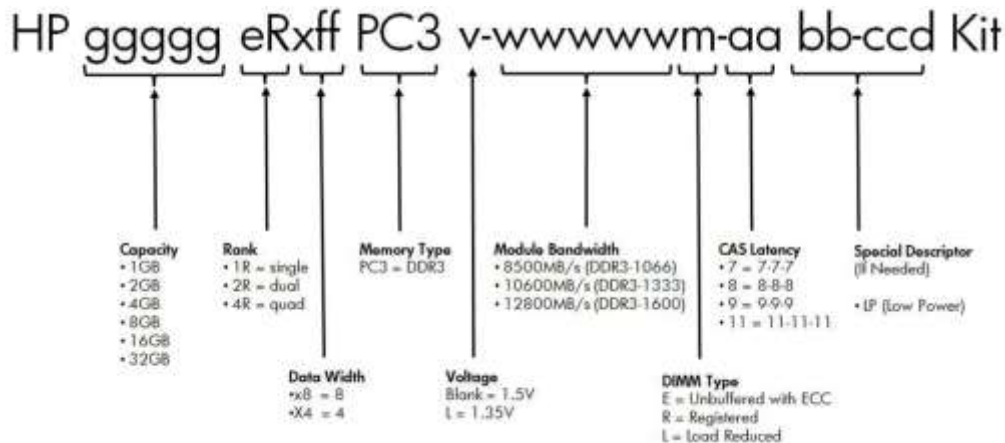
- 1GB = 1024MB
- 2GB = 2048MB
- 4GB = 4096MB
- 8GB = 8192MB
- 16GB = 16384MB

DDR3 memory options part number decoder

QuickSpecs

HP ProLiant ML350e Generation 8 (Gen8)

Memory



Following are memory options available from HP:

HP Memory

NOTE: To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html
 (Worldwide)

Registered DIMMs (RDIMMs) - E5-2xxx series Processors

NOTE: Redundant Enablement Kit (part # 664046-B21) is required whenever Registered DIMM is purchased.

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit 647893-B21

HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 647895-B21

HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit 647897-B21

HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 647899-B21

HP 8GB (1x8GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 690802-B21

HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit 647901-B21

HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 672631-B21

Unbuffered with ECC DIMMs (UDIMM) for E5-2xxx and E3-1xxx v3 series Processors

HP 2GB (1x2GB) Single Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit 669320-B21

HP 2GB (1x2GB) Single Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit 647905-B21

HP 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit 669322-B21

HP 4GB (1x4GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit 647907-B21

HP 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit 669324-B21

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

Memory

Voltage Memory Kit

Load Reduced DIMMs (LRDIMMs)

HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit 647903-B21

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

NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: <http://h18004.www1.hp.com/products/servers/platforms/energyefficient/>

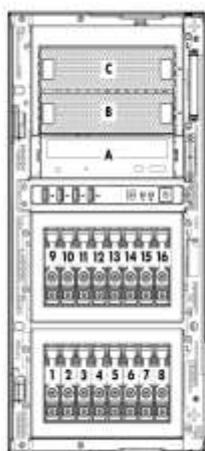
QuickSpecs

HP ProLiant ML350e Generation 8 (Gen8)

Storage



- 1-12 12 x 3.5" (LFF) Hot-Plug SAS/SATA hard drive bays
NOTE: Optional 2nd hard drive cage shown in configuration.
- A Optical Drive
- B-C Available half-height media bays, for up to two half-height optical/tape drives or a single, full-height tape drive.



- 1-16 16 x 2.5" (SFF) Hot-Plug SAS/SATA hard drive bays
NOTE: Optional 2nd hard drive cage shown in configuration.
- A Optical Drive
- B-C Available half-height media bays, for up to two half-height optical/tape drives or a single, full height tape drive.

Drive Support

External Storage

| | Quantity Supported | Position Supported | Controller |
|----------------------|--------------------|--------------------|---|
| D2600 Disk Enclosure | Up to 4 | External | HP Smart Array P222/512MB FBWC Controller |
| | Up to 8 | External | HP Smart Array P421/1GB FBWC Controller |
| | | | HP Smart Array P421/2GB FBWC Controller |
| D2700 Disk Enclosure | Up to 4 | External | HP Smart Array P222/512MB FBWC Controller |
| | Up to 8 | External | HP Smart Array P421/1GB FBWC Controller |
| | | | HP Smart Array P421/2GB FBWC Controller |
| | | | HP Smart Array P822/2GB FBWC Controller |

Tape and Disk-Based Backup

NOTE: For the complete range of tape drives, autoloaders, libraries and media, including the internal fitting models, see:

QuickSpecs

HP ProLiant ML350e Generation 8 (Gen8)

Storage

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

| | Position Supported | Controller | Controller/HBA Option Kit Part Number |
|--|----------------------|---|---------------------------------------|
| HP SCSI Tape Drives LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO4 Ultrium 1760 LTO-4 Ultrium 1840 DAT 72 DAT 160 | Internal or External | HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter NOTE: Please check the full compatibility information at: http://www.hp.com/storage/SPOCK | 412911-B21 |
| HP SCSI Rack Mount Kits 1U Rack-Mount Kit 3U Rack-Mount Kit | External | HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter | 412911-B21 |
| HP USB Tape Drives DAT 72 DAT 160 | Internal or External | USB 2.0 Port | N/A |
| HP USB Rack Mount Kits 1U USB Rack-Mount Kit | External | USB 2.0 Port | |
| HP SAS Tape Drives DAT 160 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-4 Ultrium 1760 LTO-4 Ultrium 1840 LTO-5 Ultrium 3000 LTO-5 Ultrium 3280 | Internal or External | HP Smart Array P222/512 FBWC 6Gb 1-port Int/1-port Ext SAS Controller NOTE: Please check the full compatibility information at: http://www.hp.com/storage/SPOCK | 631667-B21 |
| HP SCSI Tape Autoloaders 1/8 G2 Autoloader | External | HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter | 412911-B21 |
| HP SCSI Tape Libraries MSL2024 MSL4048 MSL8096 MSL6000 | External | HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter NOTE: Please check the full compatibility information at: http://www.hp.com/storage/SPOCK | 412911-B21 |
| HP SAS Tape Autoloaders and Libraries 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096 | External | HP Smart Array P222/512 FBWC 6Gb 1-port Int/1-port Ext SAS Controller NOTE: Please check the full compatibility information at: http://www.hp.com/storage/SPOCK | 631667-B21 |

QuickSpecs

HP ProLiant ML350e Generation 8 (Gen8)

Storage

| | | |
|--|----------------------|---|
| HP Fibre Channel Tape Libraries MSL2024 MSL4048 MSL8096 | External | Please consult the EBS connectivity matrix at: http://www.hp.com/go/ebs for connectivity information and the supported Fibre Channel HBAs shown in this QuickSpec. |
| HP USB RDX Removable Disk Backup System RDX160 RDX320 RDX500 RDX1TB | Internal or External | USB 2.0 port N/A |
| HP D2D Backup Systems, iSCSI D2D2500i D2D4000i | External | Embedded Network Controller. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended. |
| HP D2D Backup Systems, Fibre Channel D2D4000fc | External | Direct server attach is not supported, requires connection via SAN fabric. See: http://www.hp.com/storage/SPOCK |

QuickSpecs

HP ProLiant ML350e Generation 8 (Gen8)

Technical Specifications

| | | | |
|--------------------|---|--|---|
| System Unit | Dimensions (H x W x D) (with feet/bezel) | 18.19 x 8.58 x 29.13 in (46.2 x 21.8 x 74.0 cm) | |
| | Weight (approximate) | Maximum (all hard drives, power supplies, and processors installed) | 96.67 lb (43.85 kg) |
| | | Minimum (one hard drive, power supply, and processor installed) | 57.21 lb (25.95 kg) |
| | Input Requirements (per power supply) | Rated Line Voltage | 100 to 240 VAC |
| | | Rated Input Current | 7.1 Amps (at 120VAC) to 3.5 Amps (at 240 VAC) |
| | | Rated Input Frequency | 50 to 60 Hz |
| | | Rated Input Power | 852 W |
| | BTU Rating | Maximum | 460W - 1773 BTU / hr (at 120 VAC), 1715 (at 240 VAC) 750W - 2892 BTU / hr (at 120 VAC), 2797 (at 240 VAC) 1200W - 3530 BTU / hr (at 120 VAC), 4600 (at 240 VAC) |
| | Power Supply Output (per power supply) | Rated Steady-State Power | 460(750) W (at 100 VAC) 460(750) W (at 200 VAC) |
| | | Maximum Peak Power | 460(750) W (at 100 VAC) 460(750) W (at 200 VAC) |
| | System Inlet Temperature | Operating | 10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 304.8 m (1.8°F per every 1000 ft) above sea level to a maximum of 3048 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F). |
| | | Non-operating | -30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr). |
| | Relative Humidity (non-condensing) | Operating | 10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non- condensing. |
| | | Non-operating | 5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing. |
| | Altitude | Operating | 3048 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min). |
| | | Non-operating | 9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min). |

Technical Specifications

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

| | |
|--------------|---|
| L WAd | 4.2 B (Entry models) 4.2 B (Base models) |
| L pAm | 26 dB (Entry models) 25 dB (Base models) |

Operating

| | |
|--------------|---|
| L WAd | 4.2 B (Entry models) 4.3 B (Base models) |
| L pAm | 26 dB (Entry models) 26 dB (Base models) |

NOTE: Configurations tested for Entry models included Windows 2008 Enterprise 64-bit.

NOTE: Configurations tested for Base models included one (1) 1TB non-hot plug LFF SATA HDD and Windows 2008 Enterprise 64-bit.

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

Emissions Classification (EMC)**FCC Rating**

Class B

Normative Standards

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

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

HP Dynamic Smart Array B120i Controller**Dimensions**

Embedded

Disk Drive and Enclosure Interface - Transfer rate

Up to 6Gb/s SATA (Serial ATA)

Connectors

6 internal SATA connectors

Server Interface

x4 PCIe 2.0

SATA Speed

6Gb/s SATA links

Cache Memory

Zero Memory RAID has no cache memory

Logical Drives Supported

Up to 8 logical volumes (6 physical drives)

Host Memory Addressing

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

Hot Plug Support

Yes

RAID Support

RAID 0 (Striping), RAID 1 (Mirroring)
RAID 1+0 (Striping & Mirroring)

HP Ethernet 1Gb 2-port 361i Adapter**Network Interface**

10Base-T/100Base-TX/1000Base-TX

Compatibility

IEEE 802.3 10Base-T
IEEE 802.3ab 1000Base-T
IEEE 802.3u 100Base-TX
IEEE 1588, IEEE 802.1AS

QuickSpecs

HP ProLiant ML350e Generation 8 (Gen8)

Technical Specifications

| | |
|------------------------------|--|
| | IEEE 802.3az - Energy Efficient Ethernet (EEE) |
| Data Transfer Method | PCI Express V2.0, 5.0 GT/s with x2 link (fixed) |
| Controller | Intel I350 Powerville |
| Network Transfer Rate | 10Base-T (Half-Duplex) 10 Mb/s per port, 20 Mb/s Combined |
| | 10Base-T (Full-Duplex) 20 Mb/s per port, 40 Mb/s Combined |
| | 100Base-TX (Half-Duplex) 100 Mb/s per port, 200 Mb/s Combined |
| | 100Base-TX (Full-Duplex) 200 Mb/s per port, 400 Mb/s Combined |
| | 1000Base-TX (Half-Duplex) 1000Mb/s per port, 2000 Mb/s Combined |
| | 1000 Base-TX (Full-Duplex) 2000Mb/s per port, 4000 Mb/s Combined |
| Connector | RJ-45 |
| Cable Support | 10Base-T Categories 3, 4 or 5 UTP; up to 328 ft (100 m) |
| | 10/100/1000Base-TX Category 5E or better; up to 328 ft (100 m) |

Environment-friendly Products and Approach **End-of-life Management and Recycling** Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: <http://www.hp.com/go/green>. 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.

QuickSpecs

HP ProLiant ML350e Generation 8 (Gen8)

Summary of Changes

| Date | Version History | Action | Description of Change: |
|-------------|-----------------------|---------|---|
| 01-Dec-2014 | From Version 29 to 30 | Removed | Foundation Care services and Proactive Care Personalized Support Option were removed from HP Care Pack Services. Obsolete skus were removed from QuickSpecs. |
| 01-Nov-2014 | From Version 28 to 29 | Changed | Service and Support section was revised. |
| 16-Jul-2014 | From Version 27 to 28 | Changed | Changes in Pre-configured Models, Configuration Information - Factory Integrated Models, Core Options, and Additional Options sections. |
| 10-Jun-2014 | From Version 26 to 27 | Added | HP iLO Advanced including 1yr 24x7 Technical Support and Updates Electronic License and HP iLO Advanced Electronic License with 3yr 24x7 Tech Support and Updates were added to Insight Software. HP Insight Cluster Management Utility for ConvergedSystem 3yr 24x7 Flexible License was added to High Performance Clusters. HP D6000 enclosures added to Disk Enclosures. |
| | | Changed | Pre-configured Models, Additional Options and Memory were revised. Storage Controllers and HP Remote Monitoring Power Distribution Units (mPDU) were revised. |
| | | Removed | HP Insight Control Server Deployment including 1yr 24x7 Support Electronic License and HP Insight Control Server Deployment including 1yr 24x7 Support Single Server License were removed from Insight Software. |
| 18-Apr-2014 | From Version 25 to 26 | Changed | Service and Support, Memory, HP Insight Software, Storage Controllers, HP Basic and Remote Monitoring Power Distribution Units, and HP Care Pack Services were revised. |
| 18-Feb-2014 | From Version 24 to 25 | Changed | Hard Drives, Storage Controllers, and Tape Backup were revised. |
| 13-Dec-2013 | From Version 23 to 24 | Changed | Load Reduced DIMMs were added to Memory HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle FIO Electronic License was added to Step 3 in Configuration Information HP 1.2TB 6G SAS 10k rpm SFF SC Dual Port Enterprise 3yr Warranty Hard Drive was added to Hard Drives HP SmartCache and HP H221 PCIe 3.0 SAS Host Bus Adapter were added to Storage Controllers HP Tape and Disk Storage Systems were added to Additional Options HP 8GB USB EM Flash Media Kit was added to HP USB and SD Options HP ML350e Gen8 Intel Xeon E5-2450L Processor Kit was |

QuickSpecs

HP ProLiant ML350e Generation 8 (Gen8)

Summary of Changes

| | | | |
|-------------|-----------------------|---------|--|
| | | | <p>removed from Processors</p> <p>HP Power Distribution Units were removed from Additional Options</p> <p>HP Basic Power Distribution Units and HP Remote Monitoring Power Distribution Unites were revised in Additional Options</p> |
| 12-Oct-2013 | From Version 22 to 23 | Changed | Correction made in the North America version only. |
| 11-Oct-2013 | From Version 21 to 22 | Added | <p>HP 4TB 6G SAS 7.2K rpm LFF SC Midline Hard Drive, 6G SATA Value Endurance Hot Plug SFF Enterprise Value Solid State Drives, and HP 300GB and 600GB 6G SATA Value Endurance LFF SC Enterprise Boot Solid State Drives were added to Hard Drives</p> <p>HP Ethernet 10Gb 2-port 530T Adapter was added to Networking</p> <p>HP Remote Monitoring Power Distribution Units was added to Additional Options</p> <p>HP 8GB SD Enterprise Mainstream Flash Media Kit was added to HP USB and SD Options</p> |
| 20-Sep-2013 | From Version 20 to 21 | Changed | HP Dynamic Smart Array B120i Controller in Technical Specifications was revised. |
| 13-Sep-2013 | From Version 19 to 20 | Added | Added a NOTE to the Base Models section. |
| 10-Sep-2013 | From Version 18 to 19 | Changed | <p>HP Insight Management, Memory, Hard Drives, HP Storage Controllers, HP Power Distribution Units, and HP Care Pack Services were revised</p> <p>HP HPC Linux Value Pack was removed from High Performance Clusters</p> <p>HP Ethernet 10Gb 2P 561T Adapter was added to Networking</p> |
| 30-Jul-2013 | From Version 17 to 18 | Changed | Notes section was revised for Memory in the Standard Features section. |
| 19-Jul-2013 | From Version 16 to 17 | Changed | Correction made in the Smart Buys section for the North America and Canada versions only. |
| 15-Jul-2013 | From Version 15 to 16 | Added | HP Disk Backup was added to Additional Options. |
| 15-May-2013 | From Version 14 to 15 | Changed | <p>Changes made in the following sections:</p> <p>Standard Features - Maximum Internal Storage</p> <p>Configuration Information - HP Hard Drives, HP Insight Software</p> <p>Core Options - HP Hard Drives</p> <p>Additional Options - HP Insight Software, HP Tape Backup, HP Power Distribution Units, and HP USB and SD Options; Added HP Basic Power Distribution Units</p> |
| 29-Apr-2013 | From Version 13 to 14 | Changed | Technical Specifications: Updated HP Dynamic Smart Array B120i Controller section. |
| 26-Apr-2013 | From Version 12 to 13 | Changed | Change made in the North America and Canada versions only. |

QuickSpecs

HP ProLiant ML350e Generation 8 (Gen8)

Summary of Changes

| | | | |
|-------------|-----------------------|---------|---|
| 01-Mar-2013 | From Version 11 to 12 | Removed | Additional Options: Removed T9074BAE, 452148-B22 and TC278AAE from the HP Insight Software section. |
| 19-Feb-2013 | From Version 10 to 11 | Added | Added new 6G SATA ME Hot Plug Enterprise Mainstream Solid State Drive s Supports new HP iLO Essentials license ideal for small and medium business customers |
| 07-Dec-2012 | From Version 9 to 10 | Added | HP Power Distribution Units, HP Intelligent Power Distribution Units (iPDU) & HP Rack Series sections |
| | | Changed | Changes made to the Graphics, On System Management sections in Standard Features. Updated HP Insight Management Software throughout the document. Changed the HP Security section to HP Hard Drives in Step 2 of Configuration Information. HP Insight Software section and High Performance Clusters were completed revised Revised HP Tape Backup |
| | | Removed | Removed HP Drive Cage Options & HP Cooling Options from the Core Options section Removed HP Backup & Recovery Software, HP Disk Backup from Additional Options section. |
| 12-Oct-2012 | From Version 8 to 9 | Changed | Change made in the North America and Canada versions only. |
| 28-Sep-2012 | From Version 7 to 8 | Changed | Changes made in the Options and Memory sections. |
| 24-Sep-2012 | From Version 5 to 7 | Changed | Changes made throughout the QuickSpec. |
| 13-Aug-2012 | From Version 4 to 5 | Changed | Changes made throughout the QuickSpec. |
| 18-Jun-2012 | From Version 3 to 4 | Changed | Changes made throughout the QuickSpec. |
| 07-Jun-2012 | From Version 2 to 3 | Changed | Changed Smart Drive to SmartDrive in Core Options. |
| 06-Jun-2012 | From Version 1 to 2 | Changed | Changes made throughout the QuickSpec. |

Summary of Changes

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