



# HPE ProLiant rack and tower servers

The right compute for the right workload at the right economics



## Reimagine the server. Think compute

### Trusted servers built for today and tomorrow

Mobility, the cloud, Big Data, and data security trends are creating high expectations for businesses of all sizes. These modern IT demands are driving a major shift away from a traditional server-based approach to a new compute approach that accelerates IT service delivery, lowers costs, and fuels business growth.

Intelligent HPE ProLiant servers give you the freedom to reimagine the server and start thinking in terms of compute for your business. No matter what your size, there is an HPE ProLiant server that is just right to help you meet increasing user and customer demands—even when time, money, and technology resources are stretched thin.

HPE ProLiant servers can help you focus on key areas of IT transformation that will help you increase agility and flexibility, reduce costs, grow revenue and profits, manage risk, and improve your customers' and employees' experience; in short, transformations that will empower you to compete in the mobile cloud era.

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### A complete compute solution

Choose HPE Rack and Power Infrastructure options to complete your foundation for a modern and optimized IT environment. Hewlett Packard Enterprise delivers the right value where it matters, with:

- Racks in a variety of height, width, and depth options
- Power distribution units (PDUs) ranging from intelligent to basic
- Various sizes of uninterruptible power supplies (UPSs)
- Kernel-based virtual machine solutions and other rack accessories

These include:

### Transform to a hybrid infrastructure

Hybrid is a reality. In the idea economy, finding your right mix of hybrid infrastructure is critical to powering your applications and achieving business outcomes. In the New Style of Business, extracting optimum performance and efficiency from your applications is essential. The best environment for your applications, whether traditional, mobile, or cloud native, is unique to your business. Whatever your needs, Hewlett Packard Enterprise has the right fit for the right workload that can enable your desired business outcomes.

### Protect your digital enterprise

Protection is top of mind—all businesses must manage the emerging risks created by the proliferation of apps, new consumption models, and the shift to mobile and cloud. With Hewlett Packard Enterprise, you can access all the benefits of an app-centric, hybrid world, while proactively protecting your network, business data, and interactions across any location or device.

### Empower a data-driven organization

Rapid evolution in technology has created a distributed, digital world—data is everywhere and presents new opportunities to capture value, as well as new sources of risk. To compete, you need to harness 100 percent of your data, regardless of source or scale, and generate the actionable insights that can drive better business outcomes.

### Enable workplace productivity

The workplace is everywhere—and delivering a superior user experience to your customers, employees, and partners is a major driver of productivity. To be competitive, the modern enterprise needs to support ubiquitous access, seamless communication, and high-performing applications—all without jeopardizing data security and corporate assets.

## Why choose HPE ProLiant rack and tower servers?

To meet the growing demands of your business, HPE ProLiant rack and tower servers redefine compute economics by delivering more compute and storage capacity, right-sized compute with flexible choices, and lower compute energy and floor space consumption.

With HPE ProLiant rack and tower servers, you can accelerate your business results with faster compute, memory, and I/O performance, coupled with increased storage and networking performance—including lower latency.

The rack and tower servers are available in these families:

- HPE ProLiant Easy Connect
- HPE ProLiant MicroServer
- HPE ProLiant ML
- HPE ProLiant DL

While all four families are designed to handle multiple workloads—IT infrastructure, web, business applications, collaboration, analytics, Big Data, and more—each family is optimized for specific use cases.



#### HPE ProLiant Easy Connect

Reduce TCO with a managed solution for retail sites and remote offices



#### HPE ProLiant MicroServer Gen8

Perfect for micro and small businesses



#### HPE ProLiant ML family

Expandable tower servers; ideal choice for remote and branch offices and growing businesses



#### HPE ProLiant DL family

Versatile, rack-optimized server with a balance of efficiency, performance, and management

#### HPE ProLiant Easy Connect

Reduce the need for expensive full-time IT staffing on-site without compromising quality. HPE ProLiant Easy Connect Managed Hybrid Servers are remotely managed services offered through Hewlett Packard Enterprise's best in class service provider partner network, delivered as a 1-year, 3-year, or 5-year subscription paid monthly or annually. Supported by dedicated engineering and operations teams, and embedded with rigorously tested network, security, and cloud integration, the solution provides secure and reliable access to Windows®, Linux®, and SaaS applications.

#### HPE ProLiant MicroServer

The HPE ProLiant MicroServer Gen8 is a small, quiet, and uniquely designed server that is ideal as a first server solution for micro and small businesses. With server-class performance in a form factor that is easy to use and service, the MicroServer Gen8 helps you drive down expenses while improving productivity and efficiency. And best of all, you don't need a server room to have a server. Together with the common industrial design of the HPE PS110 Wireless 11n VPN Router and the PS1810 Switch for a converged solution, they make an elegant front office small- to medium-sized business (SMB) starter solution.

The HPE ProLiant MicroServer Gen8 provides the following benefits:

- Easy to manage and service
- Cool design and ability to place it anywhere
- Seamless networking with stackable HPE router and switch

#### HPE ProLiant Gen9 tower servers

The ML family of servers delivers simple, efficient business value. Industry-leading compute innovations in the new HPE ProLiant Gen9 tower portfolio include simple management and storage tools, along with proven configurations that provide easy remote access and improved energy efficiencies to lower your total cost of ownership (TCO). Integrated with a simplified but comprehensive management suite and industry-leading support, the ProLiant Gen9 tower portfolio delivers more business value and helps increase IT staff productivity and expedite service delivery. In addition, the complete, right-sized tower portfolio includes financing options, a service, and a channel network to significantly increase the speed of IT operations and enable IT to respond to business needs faster.

The HPE ProLiant Gen9 tower portfolio delivers:

- Simplicity with easy-to-use tools, processes, and support to help server administrators keep hardware running
- Efficiency that office managers need to help improve employee productivity
- Affordability to increase business agility and help acquire and retain customers

#### HPE ProLiant Gen9 rack servers

The DL family of servers are the most flexible, reliable, and performance-optimized ProLiant rack servers—ever. As we continue to provide industry-leading compute innovations, the new HPE ProLiant Gen9 rack portfolio, with flexible choices and versatile design, along with improved energy efficiencies, ultimately lowers your TCO. Integrated with a simplified, but comprehensive management suite and industry-leading support, the ProLiant Gen9 rack portfolio delivers a more reliable, fast, and secure infrastructure solution, helps increase IT staff productivity, and accelerates service delivery. In addition, the rack portfolio is performance-optimized for multi-application workloads to significantly increase the speed of IT operations and enable IT to respond to business needs of any size, faster.

The HPE ProLiant Gen9 rack portfolio delivers:

- Flexible choices to redefine compute economics with up to 21% performance improvement<sup>1</sup> and up to 62 percent lower TCO<sup>2</sup>
- Accelerating database applications by 4X faster with SQL cluster replications and 2X faster database logging performance<sup>3</sup>
- Optimized servers boost business performance with 4X faster workload performance<sup>4</sup>

<sup>1</sup> Intel® performance testing, [intel.com/performance](http://intel.com/performance) comparing measurements on platform with two E5-2600 v3 vs E5-2600 v4, November 2015.

<sup>2</sup> One hundred DL380 G6 Servers consolidated down to 16 DL380 Gen9 Servers enabling 62 percent TCO savings over three years including initial acquisition costs. There is also a potential reduction in monthly operating expenditures (OPEX) of more than 80 percent. Includes software support for VMware vSphere® and Microsoft® Windows. Also includes a 25 percent discount on hardware, March 2016.

<sup>3</sup> Internal HPE lab testing on a DL380 Gen9 E5-2600 v4 with HPE 8GB NVDIMM-N.

<sup>4</sup> HPE SmartCache performance done with equivalent controller in a controlled environment. HPE Smart Storage engineers, Houston, TX as of 18 May 2014 posted on internal SmartCache wiki page.

Get more depth with the technical white paper:

**Technologies in HPE ProLiant Gen9 2-socket rack and tower servers**

## HPE ProLiant Server Options & Technology portfolio

HPE ProLiant servers feature user-inspired innovations to make IT simpler,<sup>5</sup> including:

- **HPE Smart Socket Guides**—Simplified access, easy processor installation
- **HPE Smart Array Controllers**—Enterprise-class RAID controllers enhance performance, data availability, and storage capacity
- **HPE SmartDrives**—Simplified monitoring, reduced data loss, better serviceability
- **HPE SmartMemory**—Improved performance, manageability, and efficiency; reduced downtime; lower energy costs
- **HPE Persistent Memory**—Accelerated performance, maximum uptime, faster tier of storage than traditional technology
- **HPE Flexible Network adapters**—Easy configuration, fast serviceability
- **HPE ProLiant 3D Sea of Sensors**—Lower energy costs and identify hot spots within the platform to allow for efficient cooling and prevent failures
- **HPE iLO 4 Management**—Rapid deployment, streamlined server management
- **HPE OneView**<sup>6</sup>—Your infrastructure automation engine with software-defined intelligence and a unified API
- **HPE Server Racks**—Efficient and high-performance self-cooling racks designed for maximizing usable cabinet space
- **HPE Power and Cooling Management**—Reduce power requirements, reclaim resources, and reduce errors
- **HP Trusted Platform Module (TPM) 2.0**—Prevents unauthorized access to servers and assets

### HPE ProLiant Gen9 continues to build upon this innovation



#### Increase capacity and lower TCO

- Enjoy 3X more compute per watt using 12 GB/s SAS solid-state drives (SSDs) and HPE DDR4 SmartMemory<sup>7</sup>
- Tailor your solution with flexible choices in storage, networking, and power supplies
- Right-sized compute across multiple workloads delivers better operational efficiencies and up to 63 percent lower TCO<sup>8</sup>



#### Move faster with management automation

- Setup, monitor, and maintain your servers faster with reliable, secure embedded management
- Provision faster with simplified software-defined HPE OneView management



#### Accelerate application performance

- Enjoy support for one million IOPS with 12 Gbps HPE Smart Array Controllers<sup>9</sup>
- Access data more quickly with up to 4X read and write workload acceleration provided by HPE SmartCache<sup>10</sup>
- Process workloads faster with up to 23 percent better memory performance provided by HPE DDR4 SmartMemory and HPE ProLiant rack servers<sup>11</sup>

<sup>5</sup> For a full list of supported options and details, see the server QuickSpecs at [hpe.com/info/qs](http://hpe.com/info/qs)

<sup>6</sup> HPE OneView supported on HPE ProLiant DL and BL servers only.

<sup>7</sup> HP (now Hewlett Packard Enterprise) internal analysis: Comparison between DL380 Gen9 Server vs. DL380 G7 Server. Source for system wattage was IDC Qualified Performance Indicator. Performance taken from SPECint\_rate\_base2006 industry benchmark. Calculation: Performance per watt, August 2014.

<sup>8</sup> 100 DL380 G6 Servers consolidated down to 16 DL380 Gen9 enabling 63 percent TCO savings over three years including initial acquisition costs. There is also a potential reduction in monthly OPEX of over 83 percent. This includes software support for vSphere and Windows. Also includes a 25 percent discount on hardware, March 2016.

<sup>9</sup> Internal performance lab testing using Iometer and the HPE Smart Array P840 with RAID 0, 4K random reads.

<sup>10</sup> HPE SmartCache performance done with equivalent controller in a controlled environment. HPE Smart Storage engineers, Houston, TX as of 18 May 2014, posted on internal SmartCache wiki page.

<sup>11</sup> Up to 23 percent better performance is based on similar capacity DIMM running on HPE server compared to a non-HPE server with DDR4, HPE internal labs estimate, March 2016.

### Transition guide

We have launched 15 models in the rack and tower portfolio. The Gen9 family offers right-sized compute to meet your workload needs. As such, we're tailoring compute to offer more flexibility and choice, such as HPE FlexibleLOM, HPE SmartMemory, HPE Standard Memory, HPE SmartCache, and many more options.



HPE ProLiant sizer tools:  
[HPE server TCO calculator](#)

In the ProLiant Gen8 family, the e (Essential) and p (Performance) designations were assigned to various server models. Our portfolio has expanded with common Intel architecture in ProLiant Gen9 servers; our naming convention now better represents the features and positioning for ProLiant Gen9 servers. The following table shows the transition from Gen8 to Gen9 naming:

Gen8 models	Gen9 models
HP ProLiant ML10 v2	HPE ProLiant ML10 Gen9
HP ProLiant ML310e Gen8 v2	HPE ProLiant ML30 Gen9, HPE ProLiant ML110 Gen9
HP ProLiant ML350e Gen8	HPE ProLiant ML150 Gen9
HP ProLiant ML350p Gen8	HPE ProLiant ML350 Gen9
HP ProLiant DL320e Gen8 v2	HPE ProLiant DL20 Gen9
N/A	HPE ProLiant DL60 Gen9
N/A	HPE ProLiant DL80 Gen9
N/A	HPE ProLiant DL120 Gen9
HP ProLiant DL360e Gen8	HPE ProLiant DL160 Gen9
HP ProLiant DL380e Gen8	HPE ProLiant DL180 Gen9
HP ProLiant DL360p Gen8	HPE ProLiant DL360 Gen9
HP ProLiant DL380p Gen8	HPE ProLiant DL380 Gen9
HP ProLiant DL560 Gen8	HPE ProLiant DL560 Gen9
HP ProLiant DL580 Gen8	HPE ProLiant DL580 Gen9

## Choose your rack or tower server

For additional information on reference architectures including complete configurations, sizing, BOM, and deployment details, refer to [hpe.com/info/ra](http://hpe.com/info/ra)

HPE ProLiant rack and tower servers are available in a variety of platforms to support different compute needs and workloads. The following charts will help you compare the offerings within the HPE ProLiant rack and tower families. These charts are organized according to server needs.

**Essential servers**—The HPE ProLiant MicroServer and the HPE ProLiant 10 and 100 series servers are right-sized servers with enough headroom to run the New Style of Business, web collaboration, and business workloads.

- **New to servers**—For SMBs and service providers
- **Growing IT needs**—For SMBs and enterprise customers

**Performance servers**—The HPE ProLiant 300 and 500 series servers offer the most flexibility and best overall system performance to run compute-intensive workloads.

- **Traditional IT needs**—For SMB, enterprise, and high-performance computing (HPC) customers
- **Needing to scale-up**—For enterprise and HPC customers

## New to servers

Is this your first server? Consider these HPE ProLiant Essential servers.



	MicroServer Gen8	Easy Connect EC200a	ML10 Gen9	ML30 Gen9
	An ideal first server business-ready solution out of the box	Managed hybrid IT in a showcase form factor design	Secure, collaborate, and provision	The ideal first server for growing businesses
<b>Number of processors</b>	1	1	1	1
<b>Processors supported</b>	Intel® Xeon® E3-1220L v2 Intel Pentium® Intel Celeron®	Intel Xeon D1518	Intel Xeon E3-1200 v5 series Intel Pentium G4000 series	Intel Xeon E3-1200 v5/v6 series Intel® Core™ i3-6000 series Intel Pentium G4000 series
<b>Cores per processor</b>	2	4	2/4	2/4
<b>Maximum processor frequency/cache</b>	2.5 GHz/3 MB	2.2 GHz/6 MB	3.3 GHz/8 MB	3.6 GHz/8 MB
<b>I/O expansion slots</b>	1 PCIe 3.0/2.0 (processor dependent), 1 x 16, 1 LP	N/A	4 PCIe 3.0, 1 x16, 1 x8, 2 x4, 4 FH/HL	4 PCIe 3.0, 1 x16, 1 x8, 2 x4, 3 FH/FL, 1 FH/HL
<b>Maximum memory/# slots/speed</b>	16 GB/2/1600 MHz	64 GB/2/2400 MHz	64 GB/4/2133 MHz	64 GB/4/2133 MHz
<b>Storage controller</b>	B120i, optional Smart Array P222 via PCIe*	Embedded SATA controller (SW RAID 0/1 Support)	Intel RST SATA RAID, optional Smart HBA for external backup via PCIe	B140i, optional Smart Array and Smart HBA via PCIe*
<b>Maximum storage drive bays</b>	4 LFF SATA, non-hot plug	2	6 LFF HDD	8 SFF or 4 LFF HDD/SSD
<b>Maximum internal storage</b>	16 TB	8 TB	24 TB	48 TB
<b>Networking ports (embedded)/FlexibleLOM</b>	2 x 1GbE/NA	2 x 1GbE/iLO 4	1 x 1GbE/NA	2 x 1GbE/NA
<b>VGA/serial/USB/SD ports</b>	1/0/7/1	1/0/4/0	1/0/7/0	1/1/10/1
<b>GPU support</b>	None	None	Optional	Optional NVIDIA® Quadro K2200
<b>Form factor/chassis depth</b>	Ultra Micro Tower/9.65"	Tower/10"	Micro ATX Tower (4U)/ 15.79"	Micro ATX Tower (4U)/18.71"
<b>Power and cooling</b>	150 W non-hot plug, Non-redundant PS (AMS, APJ, and PRC models); 200 W non-hot plug, Non-redundant PS (EMEA models)	120 W non-hot plug, Non-redundant PS (Base models); 120 W FIO non-hot plug, Non-redundant PS (Premium models)	Up to 85% efficiency 300 W multi-output PS	350 W ATX PS; 460 W Redundant PS
<b>Industry compliance</b>	N/A	Contact an HPE technical sales rep for compliance info	FCC Class B	N/A
<b>System ROM</b>	Legacy BIOS	N/A	UEFI	UEFI Legacy BIOS
<b>Management</b>	HPE iLO 4, Intelligent Provisioning, Smart Update Manager, RESTful Interface Tool Optional: HPE iLO Essentials, HPE iLO Advanced	N/A	Intel AMT 11.0	HPE iLO 4, Intelligent Provisioning, Smart Update Manager Optional: HPE iLO Essentials, HPE iLO Advanced
<b>Serviceability—easy install rails</b>	N/A	N/A	N/A	N/A
<b>Warranty—(years) (parts/labor/on-site)</b>	1/0/0	3/3/3	1/1/1	3/1/1

\* For a full list of supported options and details, see the server QuickSpecs at [hpe.com/info/qs](http://hpe.com/info/qs)



	DL20 Gen9	DL60 Gen9	DL80 Gen9
	Compact, versatile, and efficient	Affordable compute and scalability packaged in a dense design	Affordable storage and scalability for cost-conscious service providers and SMBs
<b>Number of processors</b>	1	1 or 2	1 or 2
<b>Processors supported</b>	Intel Xeon E3-1200 v5/v6 series Intel Core i3 Intel Pentium	Intel Xeon E5-2600 v3/v4 series	Intel Xeon E5-2600 v3/v4 series
<b>Cores per processor</b>	2/4	4/6/8/10/12/14	4/6/8/10/12/14
<b>Maximum processor frequency/cache</b>	3.9 GHz/8 MB	3 GHz/30 MB	3 GHz/30 MB
<b>I/O expansion slots</b>	Up to 2 PCIe 3.0, 2 x8, 2 FH/HL	Up to 3 PCIe 3.0, 1 x16, 2 x8, 1 FH/HL, 2 LP	Up to 6 PCIe 3.0, 3 x16, 3 x8, 2 FH/HL, 4 LP
<b>Maximum memory/# slots/speed</b>	64 GB/4/2133 MHz	256 GB/8/2400 MHz	256 GB/8/2400 MHz
<b>Storage controller</b>	B140i, optional Smart Array P440 with FBWC, or H240 Smart HBA via PCIe*	B140i, optional Smart Array and Smart HBA via PCIe*	B140i, optional Smart Array and Smart HBA via PCIe*
<b>Maximum storage drive bays</b>	4 SFF or 2 LFF HDD/SSD	4 LFF max. HDD/SSD, M.2 enabled	12 LFF max. HDD/SSD, M.2 enabled
<b>Maximum internal storage</b>	20 TB	40 TB	120 TB
<b>Networking ports (embedded)/FlexibleLOM</b>	2 x 1GbE/FlexibleLOM slot on riser (optional)	2 x 1GbE/FlexibleLOM slot on riser (optional)	2 x 1GbE/FlexibleLOM slot on riser (optional)
<b>VGA/serial/USB/SD ports</b>	1/0/5/1	1/0/4/1	1/0/4/1
<b>GPU support</b>	Optional	N/A	Single-wide (1)
<b>Form factor/chassis depth</b>	Rack (1U)/ 15.05" (ear to rear)	Rack (1U)/ 23.9" (LFF)	Rack (2U)/ 23.9" (LFF)
<b>Power and cooling</b>	Standard 290 W (80Plus Silver certified) power supply; HPE 900W AC 240VDC Redundant Power Supply Kit (80Plus Gold certified) (optional for SFF chassis only)	Up to 92 percent efficient (Gold), 550 W multi-output, 900 W RPS	Up to 92 percent efficient (Gold), 550 W multi-output, 900 W RPS
<b>Industry compliance</b>	ASHRAE A3, ENERGY STAR® (only on RPS configuration models)	ASHRAE A3	ASHRAE A3
<b>System ROM</b>	UEFI Legacy BIOS	UEFI Legacy BIOS	UEFI Legacy BIOS
<b>Management</b>	HPE iLO 4, HPE OneView Standard, Intelligent Provisioning, HPE Systems Insight Manager (SIM), Smart Update Manager, RESTful Interface Tool Optional: HPE iLO Essentials, HPE iLO Scale-Out, HPE iLO Advanced, HPE OneView Advanced	HPE iLO 4, HPE OneView Standard, Intelligent Provisioning, HPE SIM, Smart Update Manager, RESTful Interface Tool Optional: HPE iLO Essentials, HPE iLO Scale-Out, HPE iLO Advanced, HPE OneView Advanced	HPE iLO 4, HPE OneView Standard, Intelligent Provisioning, HPE SIM, Smart Update Manager, RESTful Interface Tool Optional: HPE iLO Essentials, HPE iLO Scale-Out, HPE iLO Advanced, HPE OneView Advanced
<b>Serviceability—easy install rails</b>	N/A	Standard	Standard
<b>Warranty—(years) (parts/labor/on-site)</b>	1/1/1	1/1/1	1/1/1

\* For a full list of supported options and details, see the server QuickSpecs at [hpe.com/info/qs](http://hpe.com/info/qs)

## Growing IT needs

Are your IT needs growing? Consider these HPE ProLiant Essential servers.



**ML110 Gen9**



**ML150 Gen9**

	A performance 1P server for more demanding applications	Essential mix of performance, efficiency, and expandability
<b>Number of processors</b>	1	1 or 2
<b>Processors supported</b>	Intel Xeon E5-2600 v3/v4 series Intel Xeon E5-1600 v3/v4 series	Intel Xeon E5-2600 v3/v4 series
<b>Cores per processor</b>	4/6/8/10	6/8/10/12/14/16/18
<b>Maximum processor frequency/cache</b>	3.5 GHz/35 MB	2.6 GHz/35 MB
<b>I/O expansion slots</b>	Up to 5 PCIe 3.0, 1 x16, 2 x8, 2 x4, 4 FH/HL, 1 FH/¼L	Up to 6 PCIe 3.0, 2 x16, 4 x8, 3 FH/FL, 3 FH/HL
<b>Maximum memory/# slots/speed</b>	256 GB/8/2400 MHz	512 GB/16/2400 MHz
<b>Storage controller</b>	B140i, optional Smart Array and Smart HBA via PCIe*	B140i, optional Smart Array and Smart HBA via PCIe*
<b>Maximum storage drive bays</b>	8 LFF, 16 SFF, or 4 NHP LFF HDD/SSD	10 LFF or 16 SFF HDD/SSD
<b>Maximum internal storage</b>	80 TB	80 TB
<b>Networking ports (embedded)/FlexibleLOM</b>	2 x 1GbE/NA	2 x 1GbE/NA
<b>VGA/serial/USB/SD ports</b>	1/0/8/1	1/0/8/1
<b>GPU support</b>	Optional (1)	NVIDIA Quadro K2200 Graphics Accelerator AMD FirePro W7100 Accelerator Kit (optional)
<b>Form factor/chassis depth</b>	Tower (4.5U)/< 19"	Tower (5U)/ 24"
<b>Power and cooling</b>	Up to 92% efficiency (Gold), 350 W/550 W single, 750 W RPS	Up to 89% efficiency. (Silver) 550 W multi-output, 92% eff. (Gold) 900 W RPS
<b>Industry compliance</b>	ASHRAE A3	ASHRAE A3
<b>System ROM</b>	UEFI Legacy BIOS	UEFI Legacy BIOS
<b>Management</b>	HPE iLO 4, Intelligent Provisioning, HPE SIM, Smart Update Manager, RESTful Interface Tool Optional: HPE iLO Essentials, HPE iLO Advanced	HPE iLO 4, Intelligent Provisioning, HPE SIM, Smart Update Manager, RESTful Interface Tool Optional: HPE iLO Essentials, HPE iLO Advanced
<b>Serviceability—easy install rails</b>	N/A	N/A
<b>Warranty—(years) (parts/labor/on-site)</b>	3/1/1	3/1/1

\* For a full list of supported options and details, see the server QuickSpecs at [hpe.com/info/gs](http://hpe.com/info/gs).





	<b>DL120 Gen9</b>	<b>DL160 Gen9</b>	<b>DL180 Gen9</b>
	Enterprise-class 1S dense server for performance-driven and virtualized workloads	Right-sized performance and storage for space and budget-constrained environments	The new standard for growing data center needs
<b>Number of processors</b>	1	1 or 2	1 or 2
<b>Processors supported</b>	Intel Xeon E5-2600 v3/v4 series Intel Xeon E5-1600 v3/v4 series	Intel Xeon E5-2600 v3/v4 series	Intel Xeon E5-2600 v3/v4 series
<b>Cores per processor</b>	4/6/8/10/12/14/16/18/20/22	4/6/8/10/12/14/16/18	4/6/8/10/12/14/16/18
<b>Maximum processor frequency/cache</b>	3.5 GHz/45 MB	3.0 GHz/45 MB	3.0 GHz/45 MB
<b>I/O expansion slots</b>	Up to 3 PCIe 3.0, 2 x8, 1 x16, 1 FH&FL, 2 FH&HL,	Up to 3 PCIe 3.0, 1 x8, 2 x16, 1 FH&HL, 2 LP	Up to 6 PCIe 3.0, 5 x8, 1 x16, 1 FH&FL, 5 FH/HL
<b>Maximum memory/# slots/speed</b>	256 GB/8/2400 MHz	1 TB/16/2400 MHz; optional NVDIMM (third-party)	1 TB/16/2400 MHz
<b>Storage controller</b>	B140i, optional Smart Array and Smart HBA via PCIe*	B140i, optional Smart Array and Smart HBA via PCIe*	B140i, optional Smart Array and Smart HBA via PCIe*
<b>Maximum storage drive bays</b>	4 LFF or 8 SFF HDD/SSD, M.2 enabled	4 LFF or 8 SFF HDD/SSD, M.2 enabled	12 LFF or 16 SFF HDD/SSD, M.2 enabled
<b>Maximum internal storage</b>	40 TB	40 TB	120 TB
<b>Networking ports (embedded)/FlexibleLOM</b>	2 x 1GbE/Optional FlexibleLOM slot on riser	2 x 1GbE/Optional FlexibleLOM slot on riser	2 x 1GbE/Optional FlexibleLOM slot on riser
<b>VGA/serial/USB/SD ports</b>	1/0/4/1	1/0/4/1	1/0/4/1
<b>GPU support</b>	Single-wide (1)	N/A	Single-wide and active (1)
<b>Form factor/chassis depth</b>	Rack (1U)/ 23.9" (SFF), 23.9" (LFF)	Rack (1U)/ 23.9" (SFF), 23.9" (LFF)	Rack (2U)/ 23.9" (SFF), 23.9" (LFF)
<b>Power and cooling</b>	92 percent efficient (Gold), 550 W multi-output, 900 W RPS	Up to 92 percent efficient (80Plus gold certified) 550 W multi-output, 900 W RPS; Hot swap fans with optional redundancy	Up to 92 percent efficient (80Plus gold certified), 550 W multi-output, 900 W non-RPS; Hot swap fans with optional redundancy
<b>Industry compliance</b>	ASHRAE A3**	ASHRAE A3 and A4**, 1 ENERGY STAR	ASHRAE A3 and A4**, 1 ENERGY STAR
<b>System ROM</b>	UEFI Legacy BIOS	UEFI Legacy BIOS	UEFI Legacy BIOS
<b>Management</b>	HPE iLO 4, HPE OneView Standard, Intelligent Provisioning, HPE SIM, Smart Update Manager, RESTful Interface Tool Optional: HPE iLO Essentials, HPE iLO Scale-Out, HPE iLO Advanced, HPE OneView Advanced	HPE iLO 4, HPE OneView Standard, Intelligent Provisioning, HPE SIM, Smart Update Manager, RESTful Interface Tool Optional: HPE iLO Essentials, HPE iLO Scale-Out, HPE iLO Advanced, HPE OneView Advanced	HPE iLO 4, HPE OneView Standard, Intelligent Provisioning, HPE SIM, Smart Update Manager, RESTful Interface Tool Optional: HPE iLO Essentials, HPE iLO Scale-Out, HPE iLO Advanced, HPE OneView Advanced
<b>Serviceability—easy install rails</b>	Standard	Standard	Standard
<b>Warranty—(years) (parts/labor/on-site)</b>	3/1/1	3/1/1	3/1/1

\* For a full list of supported options and details, see the server QuickSpecs at [hpe.com/info/qs](http://hpe.com/info/qs)

\*\* See [hpe.com/servers/ashrae](http://hpe.com/servers/ashrae) for details.

## Traditional IT needs

Are you continuing to need traditional IT? Consider these HPE ProLiant Performance servers.



**ML350 Gen9**

**DL360 Gen9**

	Premium 2P performance with unmatched capacity and reliability	Dense performance for multi-workload compute in the data center
<b>Number of processors</b>	1 or 2	1 or 2
<b>Processors supported</b>	Intel Xeon E5-2600 v3/v4 series	Intel Xeon E5-2600 v3/v4 series
<b>Cores per processor</b>	4/6/8/10/12/14/16/18/20/22	4/6/8/10/12/14/16/18/20/22
<b>Maximum processor frequency/cache</b>	3.5 GHz/55 MB	3.5 GHz/55 MB
<b>I/O expansion slots</b>	Up to 1 PCIe 2.0, 8 PCIe 3.0, 4 x16, 5 x8, 8 FH&FL, 1 FH/HL	Up to 2 PCIe 3.0, 1 x16, 1 x8, 1 FH/¾L, 1 1 FH/HL length
<b>Maximum memory/# slots/speed</b>	3 TB/24/2400 MHz	3 TB/24/2400 MHz
<b>Maximum Persistent Memory</b>	N/A	Up to (16) 8 GB NVDIMMs option (128 GB max)*
<b>Storage controller</b>	B140i, optional Flexible Smart Array or HPE Smart Host Bus Adapter Controllers**	B140i**
<b>Maximum storage drive bays</b>	24 LFF or 48 SFF HDD/SSD Optional: Up to 6 NVMe PCI SSD	4 LFF or 8 + 2 SFF HDD/SSD, M.2 enabled Optional: Up to 2 or 6 NVMe PCIe SSD
<b>Maximum internal storage</b>	240 TB	40 TB
<b>Networking ports (embedded)/option</b>	4 x 1GbE/N/A/standup card	4 x 1GbE/Optional FlexibleLOM/standup card
<b>VGA/serial/USB/SD ports</b>	1/1/8/1	2/1/5/2
<b>GPU support</b>	Single-/double-wide and active up to 10.5" (4)	Single-wide and active up to 9.5" (2)
<b>Form factor/chassis depth</b>	Tower or Rack (5U)/28.5" (SFF), 28.5" (LFF)	Rack (1U)/27.5" (SFF), 29.5" (LFF)
<b>Power and cooling</b>	Up to 4 Flex Slot, redundancy optional, 500 W, 800 W, or 1400 W; 96 percent efficient (Titanium) with Flexible Slot FF	Up to 2 Flex Slot, redundancy optional, 500 W, 800 W, or 1400 W; Up to 96 percent efficient (Titanium) with HPE Flexible Slot Power Supplies with optional HPE Battery Backup Hot plug fans with full N+1 redundancy, optional high performance fans
<b>Industry compliance</b>	ASHRAE A3 and A4, ENERGY STAR	ASHRAE A3 and A4, ENERGY STAR
<b>System ROM</b>	UEFI Legacy BIOS	UEFI Legacy BIOS
<b>Management</b>	HPE iLO 4, HPE OneView Standard, Intelligent Provisioning, HPE SIM, Smart Update Manager, RESTful Interface Tool Optional: HPE iLO Advanced	HPE iLO 4, HPE OneView Standard, Intelligent Provisioning, HPE SIM, Smart Update Manager, RESTful Interface Tool Optional: HPE iLO Advanced
<b>Serviceability—easy install rails</b>	N/A	Standard
<b>Warranty—(years) (parts/labor/on-site)</b>	3/3/3	3/3/3

\*\* For a full list of supported options and details, see the server QuickSpecs at [hpe.com/info/qs](http://hpe.com/info/qs)



**DL380 Gen9**

**DL385p Gen8**

	The no-compromise data center standard for multi-workload compute	Performance and flexibility that means business
<b>Number of processors</b>	1 or 2	1 or 2
<b>Processors supported</b>	Intel Xeon E5-2600 v3/v4 series	AMD Opteron 6300 Series
<b>Cores per processor</b>	4/6/8/10/12/14/16/18/20/22	4/8/12/16
<b>Maximum processor frequency/cache</b>	3.5 GHz/55 MB	3.5 GHz/16 MB
<b>I/O expansion slots</b>	Up to 6 PCIe 3.0, 2 x16, 4 x8, 2 FH/FL, 4 FH/HL	Up to 6 PCIe 2.0, 1 x16, 4 x8, 1 x4, 2 FH/FL, 4 FH/HL
<b>Maximum memory/# slots/speed</b>	3 TB/24/2400 MHz	768 GB/24/1600 MHz
<b>Maximum Persistent Memory</b>	Up to (16) 8 GB NVDIMMs option (128 GB max)*	N/A
<b>Storage controller</b>	B140i, optional Flexible Smart Array or Smart SAS HBA controllers**	P420i, optional**
<b>Maximum storage drive bays</b>	12 + 3 LFF or 24 + 2 SFF HDD/SSD, M.2 enabled Optional: Up to 6 NVMe PCIe SSD	12 LFF or 25 SFF HDD/SSD
<b>Maximum internal storage</b>	150 TB	120 TB
<b>Networking ports (embedded)/option</b>	4 x 1GbE/Optional FlexibleLOM/standup card	N/A/FlexibleLOM
<b>VGA/serial/USB/SD ports</b>	1 + 1/1/5/1	2/1/8/1
<b>GPU support</b>	Single-/double-wide and active/passive up to 10.5" (2) from NVIDIA, Intel and AMD	N/A
<b>Form factor/chassis depth</b>	Rack (2U)/26.75" (SFF), 28.75" (LFF)	Rack (2U)
<b>Power and cooling</b>	Up to 2 Flex Slot, redundancy optional, 500 W, 800 W, or 1400 W; 96 percent efficient (Titanium); Hot plug fans with full N + 1 redundancy, optional high performance fans	Up to 2 Common Slot power supplies, redundancy optional, 460 W, 750 W, or 1200 W
<b>Industry compliance</b>	ASHRAE A3 and A4, ENERGY STAR	N/A
<b>System ROM</b>	UEFI Legacy BIOS	Legacy BIOS
<b>Management</b>	HPE iLO 4, HPE OneView Standard, Intelligent Provisioning, HPE SIM, Smart Update Manager, RESTful Interface Tool Optional: HPE iLO Advanced, HPE OneView Advanced	HPE iLO 4, HPE OneView Standard, Intelligent Provisioning, HPE SIM, Smart Update Manager Optional: HPE iLO Advanced, HPE OneView Advanced
<b>Serviceability—easy install rails</b>	Standard	N/A
<b>Warranty—(years) (parts/labor/on-site)</b>	3/3/3	3/3/3

\* Coming 2H2016.

\*\* For a full list of supported options and details, see the server QuickSpecs at [hpe.com/info/qs](http://hpe.com/info/qs).

## Scale-up needs

Do you need to scale up? Consider these HPE ProLiant Performance servers.



**DL560 Gen9**



**DL580 Gen9**

	High-density 4-socket server for multi-workload compute	The 4-socket enterprise standard for resource and data-intensive workloads
<b>Number of processors</b>	1, 2, or 4	2, 3, or 4
<b>Processors supported</b>	Intel Xeon E5-4600 v3/v4 series	Intel Xeon E7-4800 v3/v4 series Intel Xeon E7-8800 v3/v4 series
<b>Cores per processor</b>	6/10/12/14/16/18/20/22	4/8/10/12/14/16/18/20/22/24
<b>Maximum processor frequency/cache</b>	2.6 GHz/55 MB	3.2 GHz/60 MB
<b>I/O expansion slots</b>	Up to 7 PCIe 3.0, 1 x16, 6 x8, 6 FH/HL, 1 LP	Up to 9 PCIe 3.0, 5 x16, 4 x8, 9 FH/FL
<b>Maximum memory/# slots/speed</b>	6 TB*/48/2400 MHz	12 TB*/96/1866 MHz
<b>Storage controller (embedded)</b>	Embedded SATA, optional, Flexible Smart Array P440ar or Smart Array or Smart HBA via PCIe**	P830i**
<b>Maximum storage drive bays</b>	24 SFF HDD/SSD, M.2 enabled Optional: Up to 6 NVMe PCIe SSD	10 SFF HDD/SSD Optional: Up to 5 NVMe PCIe SSD
<b>Maximum internal storage</b>	96 TB	40 TB
<b>Networking ports (embedded)/options</b>	N/A/FlexibleLOM/standup card	N/A/FlexibleLOM
<b>VGA/serial/USB/SD ports</b>	2/1/9/1	2/1/8/1
<b>GPU support</b>	Single-wide (2)	Double-wide (5)
<b>Form factor/chassis depth</b>	Rack (2U)/29.5" (SFF)	Rack (4U)/29"
<b>Power and cooling</b>	Up to 2 Common Slot, redundancy optional, 1200 W or 1500 W	Up to 4 Common Slot, redundancy optional, 1200 W or 1500 W, 94 percent efficient (Platinum Plus)
<b>Industry compliance</b>	ASHRAE A3 and A4, ENERGY STAR	ASHRAE A3 and A4
<b>System ROM</b>	UEFI Legacy BIOS	UEFI Legacy BIOS
<b>Management</b>	HPE iLO 4, HPE OneView Standard, Intelligent Provisioning, HPE SIM, Smart Update Manager, RESTful Interface Tool Optional: HPE iLO Advanced, HPE OneView Advanced	HPE iLO 4, HPE OneView Standard, Intelligent Provisioning, HPE SIM, Smart Update Manager, RESTful Interface Tool Optional: HPE iLO Advanced, HPE OneView Advanced
<b>Serviceability—easy install rails</b>	Standard	Standard with CMA
<b>Warranty—(years) (parts/labor/on-site)</b>	3/3/3	3/3/3

\* 128 GB LRDIMM support 2H2016.

\*\* For a full list of supported options and details, see the server QuickSpecs at [hpe.com/info/qs](http://hpe.com/info/qs).

Which operating systems/virtual environments are supported?

HPE ProLiant rack and tower servers support the following operating systems and virtual environments:

- Microsoft
- Red Hat®
- SUSE
- Oracle
- Canonical
- ClearOS

You can purchase your entire operating environment from Hewlett Packard Enterprise; we resell and provide full service and support for Microsoft Windows operating systems; Red Hat Enterprise Linux subscriptions; SUSE Linux subscriptions; and Microsoft Hyper-V, VMware®, and Red Hat Enterprise Virtualization subscriptions.

ClearOS is a simple, secure, and affordable operating system with an application marketplace of over 100 applications that allows customers to lean on their trusted IT partner to build customized solutions. ClearOS is available via CTO, Intelligent Provisioning, or via download. To learn more on what you can do, please visit

[hpe.com/servers/clearos](http://hpe.com/servers/clearos).

For the latest operating system support information and to learn more, see:

[hpe.com/info/ossupport](http://hpe.com/info/ossupport).

## Get enhanced functionality and added benefits with HPE Server Options

Inside each HPE server are essential performance building blocks—think core DNA—such as DDR memory, storage, and network adapters. We call these building blocks HPE Server Options—designed to deliver the highest performance for any workload, deliver that performance with persistent reliability, and at economics that don't slow down your business. Thus, ProLiant Gen9 servers configured with HPE Server Options are the ideal solution for any application workload and any IT environment, from the smallest SMB site to the largest enterprise data center.

HPE Server Options are integrated with many HPE system management tools for easy configuration, maintenance, and installation, lowering your operations costs when compared to non-HPE components.

HPE Server Options have gone through a rigorous testing process for flawless installation, maintenance, and upgrade. There's a wide range of options, from storage drives, memory, network adapters, and processors, to the Rack and Power Infrastructure and beyond.

### HPE Memory

Choosing the right memory is the key to getting the highest application performance, system reliability and faster return on your IT investment. HPE's portfolio includes HPE Standard Memory—suitable for smaller capacity needs—and HPE SmartMemory, for memory-intensive workloads. Customers may select from different HPE memory types and DIMM capacities to optimize server efficiency, capacity, and performance.

All HPE memory modules are tested on every ProLiant server platform beyond industry standards to diagnose problems, deliver rapid resolutions, and avoid failures. Additional authentication assures you that your memory is optimized and performance tuned for your server.

### HPE Storage Options

As data storage and accessibility requirements grow, you need solutions that can help overcome performance bottlenecks. HPE Storage Options for ProLiant Gen9 servers offer the industry's broadest portfolio of storage products, which include HDDs, SSDs, and Smart Array Controllers. These offerings provide enterprise customers with hassle-free performance, outstanding reliability, and exceptional quality. Backed by over 2.4 million hours of the industry's most rigorous testing and qualification programs, there's a solution to fit any application workload.

  
Resources[HPE Server Options home page](#)[HPE Rack and Power Infrastructure home page](#)**HPE Persistent Memory**

HPE Persistent Memory Technology is the way of the future for data-intensive workload computing. Hewlett Packard Enterprise is first to market with the practical implementation of persistent memory server technology, which allows you to unlock new levels of resiliency and up to 4X increase in transaction performance. HPE ProLiant servers are the best compute platforms in the world and they just got turbo charged with new HPE 8 GB NVDIMM modules. This new server technology is ideal for multipurpose workloads like database and analytics, enabling faster business decisions.

**HPE Server Network Adapters**

Cost-effective, dependable server networking products keep your IT running reliably and at peak performance. From switches to network adapters to transceivers and cables to the latest 25 Gb Ethernet technology, HPE Server Networking products are designed, developed, and tested to deliver state-of-the-art, secure performance.

**HPE Rack and Power Infrastructure**

Your data center is required to provide the foundational agility and compute power to support your business and enable your customers. But it can't be overlooked that your data center also has the same needs—infrastructure, agility, and compute power—to perform effectively. HPE Rack and Power Infrastructure provides configurable, state-of-the-art infrastructure solutions out of the box that can meet the needs of businesses of all sizes, now and in the future. HPE Rack and Power Infrastructure offerings deliver server rack, power, and cooling solutions that give you the maximum level of efficiency and integration for data centers of all sizes.

**HPE Power Supplies**

HPE Power Supplies offer high-efficiency operation and multiple input and output options, allowing users to right size a power supply for specific server/storage configurations and environments. This flexibility helps to minimize power waste, lower overall energy costs, and avoid trapped power capacity in the data center.

Power Supplies available in common slot and flex slot supports battery backup.

### HPE Support for ASHRAE guidelines

Data center cooling systems represent a significant portion of your capital expenditure (CAPEX) and use a substantial amount of energy.

Hewlett Packard Enterprise supports the adoption of less expensive and eco-friendly cooling methods encouraged by the latest American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) guidelines for temperature and humidity operating ranges of IT equipment.

Most HPE Gen9 server products support the 2014 ASHRAE class A3 guidelines or higher.

For specific server details, visit [hpe.com/servers/ashrae](http://hpe.com/servers/ashrae).

For additional details on supported options, refer to the server QuickSpecs at [hpe.com/info/qs](http://hpe.com/info/qs).

For complete information on the HPE Server Management portfolio, refer to the webpage at [hpe.com/info/servermanagement](http://hpe.com/info/servermanagement).

## HPE infrastructure management software

### For better insight and control

Today, most IT professionals wrestle with numerous management pains, including:

- **Infrastructure management complexity**—There are too many infrastructure management tools to learn and operate, resulting in high IT operating expenses. This proliferation drives up software license costs, as well as increases the time and cost of maintenance—including skills maintenance.
- **Scale and speed**—In enterprise data centers with thousands or tens of thousands of servers, traditional infrastructure management tools cannot scale or operate at the high speeds necessary to effectively manage server sprawl.
- **Siloed infrastructure and outdated IT operational models**—There are often too many non-standard manual tasks, an over-reliance on subject matter experts, and an ever-expanding backlog of projects. The answer to these challenges is to follow a new IT operational model—namely the software-defined data center (SDDC).
- **Planned and unplanned downtime**—Depending on your line of business, the cost of downtime can be millions of dollars of lost revenue. Knowing these costs, IT pros need tools and processes designed to eliminate or dramatically reduce downtime.

To address these gaps, a new management methodology is required—one that drives better system control and greater insight into problems before they occur. And Hewlett Packard Enterprise has it.

HPE infrastructure management is delivered through a complete portfolio of HPE ProLiant lifecycle management capabilities that can flexibly operate from embedded management and system utilities, converged management for software-defined data centers, and support management. Managing HPE ProLiant servers with HPE infrastructure management results in increased efficiency and precise control of resources, with a rich set of capabilities that are easy to access and simple to use. HPE infrastructure management encompasses critical areas such as server deployment and configuration, health and alerting, energy, power, remote management, and warranty and contract information access via a cloud-based portal. The core components that comprise HPE infrastructure management are Embedded Management, Integrated Lights-Out (iLO), and HPE OneView. With HPE infrastructure management's built-in automation, HPE ProLiant servers are so intelligent that they practically manage themselves.

In addition, scripting tools such as the Scripting Tool Kit (STK) as well as Service Pack for ProLiant and Smart Update Manager provide breakthrough system maintenance tools that systematically update HPE ProLiant rack and tower servers with one-click simplicity at the scale of your data center.

**HPE OneView**

HPE OneView is your infrastructure automation engine to simplify operations, increasing the speed of IT delivery for new applications and services. Through software-defined intelligence, HPE OneView brings a new level of automation to infrastructure management by taking a template driven approach to provisioning, updating, and integrating compute, storage, and networking infrastructure. Designed with a modern, standard-based API and supported by a large and growing partner ecosystem, HPE OneView also makes it easy to integrate powerful infrastructure automation into existing IT tools and processes.

Take command with HPE OneView to:

**Deploy infrastructure faster:** Template-based automation enables IT generalists to rapidly and reliably provision resources in response to application owner requirements.

**Simplify operations:** Agentless monitoring, online firmware updates, and a new Global Dashboard deliver streamlined lifecycle operations at scale.

**Increase productivity:** The unified API gives developers and ISVs the power to unify infrastructure automation with application and IT service delivery.

HPE OneView innovations provide you the industry's best infrastructure management experience, simplifying operations for HPE BladeSystem, HPE ProLiant servers, HPE 3PAR storage, HPE Networking and HPE ConvergedSystem. It is an essential ingredient in the HPE Hyper Converged 380 virtual machine vending environment and powers management for the industry's first composable infrastructure, HPE Synergy. By deploying HPE OneView today, you place your IT operations firmly on the path toward a composable future.

Please note that the HPE OneView license includes the right to use HPE Insight Control until you complete your transition.

**Embedded management**

HPE Integrated Lights-Out (iLO) allows you to configure, monitor and update your HPE servers seamlessly from anywhere in the world. Providing you with consistent insight into the health and operation of your servers, HPE iLO arms you with the tools to resolve issues and keep your business. Featuring the latest innovations in intuitive design, reliability and optimized operations, HPE iLO allows you to manage your entire server environment with ease.

Upgrade your licenses for additional functionality, such as graphical remote console, multi-user collaboration, video record/playback, and much more. Use the **[HPE iLO Licensing Guide](#)** to determine which of our three licensing upgrade options is right for you.



**iLO Advanced**

Ideal for the enterprise environment, this license provides advanced remote functionality and all the HPE iLO features to improve speed, scale and simplicity.

Learn more at [hpe.com/servers/iloadvanced](https://hpe.com/servers/iloadvanced).

**iLO Essentials**

This license offers remote server management features that are uniquely designed for small and midsize business at an affordable price.

Learn more at [hpe.com/servers/ilo/essentials](https://hpe.com/servers/ilo/essentials).

**iLO Scale-Out**

For companies with massive scale-out data centers, this license delivers advanced power management and scripting tools to help lower operating costs.

Learn more at [hpe.com/servers/ilo/scale-out](https://hpe.com/servers/ilo/scale-out).

In addition to embedded offerings like iLO, other products and tools, such as System Utilities, **Intelligent Provisioning**, **Smart Update Manager (SUM)**, **Service Pack for ProLiant (SPP)**, and scripting tools such as **RESTful Interface Tool**, **Scripting Toolkit for Windows and Linux**, and **Scripting Tools for Windows PowerShell**, are available to all HPE ProLiant server customers.

## HPE storage solutions for HPE ProLiant servers

No matter what your storage needs, HPE offers virtualized shared storage, data protection, and data retention and archiving solutions that complement your HPE ProLiant investment and are designed to offer a seamless service, support, and management experience. With storage solutions for any scale, performance or investment level, you can handle more workloads more simply and more affordably by combining servers and storage solutions from HPE.

**HPE disk enclosures**

Manage growing storage needs with modular solutions for ProLiant capacity expansion. HPE disk enclosures let you deploy low-cost, high-capacity, high-performance storage for ProLiant servers—the ideal choice for small application environments in SMBs, remote offices, and departmental locations. [hpe.com/storage/disk-enclosures](https://hpe.com/storage/disk-enclosures)

**Entry-level shared storage**

HPE is a leader in affordable, flexible storage that scales to accommodate growth and adapt automatically when the unexpected happens. Easy to manage, our entry-level storage systems offer rich features including support for flash and multiple connectivity and storage protocol options. Our flexible options for entry let you choose from direct attached storage to extend your server capabilities, NAS appliances for file sharing and home directory consolidation, and highly scalable shared storage arrays for physical and virtual applications that can run on your existing IP network or a dedicated Fibre Channel SAN. [hpe.com/storage/entry](https://hpe.com/storage/entry)

**All-flash and hybrid flash storage**

The world is changing, fast. An all-flash datacenter is now a reality thanks to the flagship HPE 3PAR StoreServ family of flash arrays. These lightning fast arrays deliver 99.9999% uptime with built-in enterprise-class resiliency and Adaptive Data Reduction technologies that can reduce capacity requirements by 75% to make flash affordable for all of your applications. But all-flash arrays are only one way to realize the benefits of flash. Learn more about flash for HPE 3PAR and other HPE primary disk arrays. [hpe.com/storage/flash](https://hpe.com/storage/flash)

**Data availability, protection and retention**

Today's businesses demand aggressive service levels. Data loss, risk, and downtime must be avoided at all costs. When an outage does occur, recovery time must be minimized. HPE can equip you meet the most stringent Recovery Time Objectives (RTOs) and Recovery Point Objectives (RPOs), all while reducing your protection storage capacity requirements. Learn more about our affordable portfolio of modern data availability, protection and retention solutions with the right scale, performance and application integration to meet your needs.

[hpe.com/storage/bura](https://hpe.com/storage/bura)

**Storage management and orchestration**

With Hewlett Packard Enterprise, you can get past hardware management limitations with open, automated orchestration. Control storage, compute and networking resources as well as data services across physical and virtual domains. It's all compatible with many third-party tools and fully integrated into HPE data storage solutions—from flash-optimized to software-defined.

[hpe.com/storage/management](https://hpe.com/storage/management)

**Storage networking**

Hewlett Packard Enterprise provides dynamic end-to-end solutions, solving your storage networking challenges with nearly 15 million storage area network (SAN) fabric ports deployed worldwide. Agile HPE StoreFabric host adapters, multi-protocol switches and highly scalable directors for cloud-optimized SANs ensure reliability and high performance.

[hpe.com/storage/san](https://hpe.com/storage/san)

**Integration services**

HPE Factory Express provides customization and deployment services along with your storage and server purchases. You can customize hardware to your exact specifications in the factory—helping speed deployment. [hpe.com/info/factoryexpress](https://hpe.com/info/factoryexpress)

Optimize your IT investment strategy with new ways to acquire, pay for and use technology, in lock-step with your business and transformation goals.

[hpe.com/solutions/hpefinancialservices](https://hpe.com/solutions/hpefinancialservices)

## Training and certification

Gain the skills you need with ExpertOne training and certification from Hewlett Packard Enterprise. With HPE ProLiant server training, you will accelerate your technology transition, improve operational performance, and get the best return on your Hewlett Packard Enterprise investment. Our training is available when and where you need it, through flexible delivery options and a global training capability. [hpe.com/ww/learnproliant](https://hpe.com/ww/learnproliant)

## HPE Technology Services

The HPE Support Services portfolio for HPE ProLiant servers and HPE BladeSystem redefines support, factoring in the breakthrough capabilities of HPE ProLiant rack and tower servers.

Through this portfolio of services, Hewlett Packard Enterprise can help you align support service levels to your business needs worldwide—while also saving you costs and resources. With Hewlett Packard Enterprise, you receive the right support for the new age, benefiting from a support experience that is personalized, proactive, and simplified.

[hpe.com/services/support](https://hpe.com/services/support)

- **HPE Foundation Care**—Cost-effective, reactive services with separate or integrated hardware and software support options; includes HPE Collaborative Support with independent software vendor (ISV) software problem resolution and enhanced call management.
- **HPE Proactive Care**—Combines reactive and proactive hardware and software support; offers a single point of contact for remote and on-site hardware support delivered by advanced HPE technology experts to help you proactively address potential issues and minimize downtime.
- **HPE Datacenter Care**—Supports your entire data center environment; developed for environments that have HPE and multi-vendor equipment; customized for your needs and service-level agreements.
- **HPE Lifecycle Event Services**—Comprehensive end-to-end services, covering strategy, planning, deployment, technical, and education services that can be used at any stage of the solution lifecycle.
- **Connect your devices**—Unlock all of the benefits of your technology investment by connecting your products to Hewlett Packard Enterprise. Achieve up to 77 percent<sup>12</sup> reduction in downtime, near 100 percent<sup>13</sup> diagnostic accuracy, and a single consolidated view of your environment. By connecting, you will receive 24x7 monitoring, prefailure alerts, automatic call logging, and automatic parts dispatch. HPE Proactive Care Service and HPE Datacenter Care Service customers will also benefit from proactive activities to help prevent issues and increase optimization. All of these benefits are already available to you with your server storage and networking products, securely connected to HPE Support.
- **For Education services and training**, visit [hpe.com/ww/learnproliant](https://hpe.com/ww/learnproliant) or contact your local HPE sales representative or authorized HPE ServiceOne partner.

<sup>12</sup>, <sup>13</sup> IDC has determined that customers who take advantage of the Gen9 support capabilities have near 100 percent diagnostic accuracy and reduce service times by 77 percent. IDC white paper sponsored by HP (now Hewlett Packard Enterprise) and Intel. The Business Value of Connected Support from HP, Doc# 254594, March, 2015; [hpe.com/h20195/v2/getpdf.aspx/4AA5-8020enw.pdf?ver=1.0](https://hpe.com/h20195/v2/getpdf.aspx/4AA5-8020enw.pdf?ver=1.0)

### The undisputed server market leader

With one HPE ProLiant server shipping every 16 seconds<sup>14</sup> and 40,000 more servers in 3rd quarter of CY 2016. HPE ProLiant servers are the undisputed market share leader.<sup>15</sup> The industry-leading success of HPE ProLiant stems in part from our ongoing commitment to providing a complete industry-standard server infrastructure that delivers innovation, quality, and proven performance.

## HPE server families

### A server for every need

Hewlett Packard Enterprise understands that when it comes to servers, one size does not fit all. That's why we offer you a comprehensive array of server families, purpose-built for a wide variety of business needs. Explore our other server portfolios:

- **HPE BladeSystem family**—Delivering a whole new experience for IT with the Power of One—one infrastructure and one management platform to speed the delivery of services.
- **HPE Moonshot System family**—The industry's first workload-optimized server—designed for the data center and built for the planet.
- **HPE Hyperscale solutions family**—When your IT is the core of your business.
- **HPE Integrity server family**—When you need continuous business, Integrity servers help you achieve mission-critical results.
- **HPE NonStop server family**—For industries that never stop.

## Learn more

To learn more about how HPE ProLiant rack and tower servers—together with Server Options and HPE Services—can help you confidently lay the foundation for your converged infrastructure, visit the links below.

Learn more at

[hpe.com/info/servers](http://hpe.com/info/servers)

[hpe.com/servers/rack](http://hpe.com/servers/rack)

[hpe.com/servers/tower](http://hpe.com/servers/tower)

[hpe.com/servers/microserver](http://hpe.com/servers/microserver)

[hpe.com/info/servermanagement](http://hpe.com/info/servermanagement)

[hpe.com/servers/easyconnect](http://hpe.com/servers/easyconnect)

[hpe.com/info/serveroptions](http://hpe.com/info/serveroptions)

[hpe.com/info/rackandpower](http://hpe.com/info/rackandpower)

[hpe.com/info/ra](http://hpe.com/info/ra)

<sup>14, 15</sup> [The Real Story about Server Market Share](#)



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