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 in 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' experiences; in short, transformations that will empower you to compete in the mobile cloud era. These include:

Table of contents

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 uninterruptable power supplies (UPSs)

- Kernel-based virtual machine solutions and other rack accessories

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.

HPE ProLiant is available in three families:

- HPE ProLiant MicroServer family

- HPE ProLiant ML family

- HPE ProLiant DL family

While all three 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 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

[1] HPE Internal analysis. Comparison between DL380 Gen9 Server vs. DL380p Gen8 Server with Sandy Bridge processors. Source for system wattage was IDC Qualified Performance Indicator located at **gpicertificate.idc.com**. Performance taken from SPECint_rate_base2006 industry benchmark. Calculation: Performance per watt, August 2014.

[2] 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 vSphere and Microsoft® Windows®. Also includes a 25 percent discount on hardware. March 2016.

[3] Sixty-six times faster to build and deploy infrastructure; anonymous customer results. Customer was able to reduce the time to build and deploy infrastructure for 12 call centers from 66 days to 1. Total of 2,000 servers were deployed. IDC white paper sponsored by HPE, "**Achieving Organizational Transformation with HPE Converged Infrastructure Solutions for SDDC**," January 2014, IDC #246385.

[4] 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.

HPE ProLiant MicroServer Family
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 3X the compute per watt,[1] and up to 62 percent lower TCO[2]

• Reliable infrastructure with up to 66X faster service delivery[3]

• Optimized servers boost business performance with 4X faster workload performance[4]

HPE ProLiant rack and tower server portfolio

HPE ProLiant servers feature user-inspired innovations to make IT simpler,[5] 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 Nonvolatile DIMM (NVDIMM)**—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 management

- **HPE OneView[6]**—Management software to eliminate complexity with automation simplicity

- **HPE Insight Online**—Efficient support management with an online personalized dashboard

- **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[7]
- 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% lower TCO[8]

Move faster with management automation
- Set up, monitor, and maintain your servers faster with reliable, secure embedded management
- Provision faster with simplified software-defined HPE OneView management
- Reduce service call time by 50 percent[9] with HPE Insight Online

Accelerate application performance
- Enjoy support for one million IOPS with 12 Gb/s HPE Smart Array Fast Controllers[10]
- Access data more quickly with up to 4X read and write workload acceleration provided by HPE SmartCache[11]
- Process workloads faster with up to 23 percent better memory performance provided by HPE DDR4 SmartMemory and HPE ProLiant rack servers[12]

Introducing new server models
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.

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[13]	HPE ProLiant ML10 Gen9
HP ProLiant ML310e Gen8 v2	HPE ProLiant ML30 Gen9
HP ProLiant ML310e Gen8 v2	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
New, no transition	HPE ProLiant DL60 Gen9
New, no transition	HPE ProLiant DL80 Gen9
New, no transition	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

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

[13] HP ProLiant ML10 v2 is not considered a "Gen9" server.

New to servers

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

	MicroServer Gen8	ML10 v2	ML10 Gen9	ML30 Gen9
	An ideal first server business-ready solution out-of-the-box	Just-right server class performance and reliability at unmatched value	Secure, Collaborate, and Provision	The ideal first server for growing businesses
Number of processors	1	1	1	1
Processors supported	Intel® Xeon® E3-1220L v2 Intel Pentium® Intel Celeron®	Intel Xeon E3-1200 v3 series Intel® Core™ i3 Intel Pentium	Intel Xeon E3-1200 v5 series Intel Pentium G4000 series	Intel Xeon E3-1200 v5 series Intel Core i3-6000 series Intel Pentium G4000 series
Cores per processor	2	2/4	2/4	2/4
Maximum processor frequency/cache	2.5 GHz/3 MB	3.5 GHz/8 MB	3.3 GHz/8 MB	3.6 GHz/8 MB
I/O expansion slots	1 PCIe 3.0/2.0 (processor dependent)	2 PCIe 2.0 2 PCIe 3.0	4 PCIe 3.0	4 PCIe 3.0
Maximum memory/# slots	16 GB/2	32 GB/4	64 GB/4	64 GB/4
Storage controller (embedded)	B120i*	B120i*	Intel RST SATA RAID	B140i*
Maximum storage drive bays	4 LFF SATA, non-hot plug	6 LFF HDD	6 LFF HDD	8 SFF or 4 LFF HDD/SSD
Maximum internal storage	16 TB	24 TB	24 TB	32 TB
Networking ports (embedded)/FlexibleLOM	2 x 1GbE/NA	2 x 1GbE/NA	1 x 1GbE/NA	2 x 1GbE/NA
VGA/serial/USB/SD ports	1/0/7/1	1/0/4/0	1/0/7/0	1/1/10/1
GPU support	None	Optional (1)	Optional	Optional
Form factor	Ultra micro tower	Micro ATX Tower (4U)	Micro ATX Tower (4U)	Micro ATX Tower (4U)
System ROM	Legacy BIOS	Legacy BIOS	UEFI	UEFI Legacy BIOS
Management	HPE iLO 4, Intelligent Provisioning, HPE Insight Online, SUM**, RESTful Interface Tool Optional: HPE iLO Essentials, HPE iLO Advanced, HPE Insight Control	HPE iLO 4, HPE SIM, HPE Insight Online, SUM** Optional: HPE iLO Essentials, HPE iLO Advanced, HPE Insight Control	Intel AMT 11.0	HPE iLO 4, Intelligent Provisioning, HPE Insight Online, SUM** Optional: HPE iLO Essentials, HPE iLO Advanced
Warranty—(years) (parts/labor/onsite)	1/0/0	1/0/0	1/1/1	3/1/1

* For a full list of supported options and details, see the server QuickSpecs at **hpe.com/info/qs**.

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	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
Number of processors	1	1 or 2	1 or 2
Processors supported	Intel Xeon E3-1200 v5 series Intel Core i3 Intel Pentium	Intel Xeon E5-2600 v3/v4 series	Intel Xeon E5-2600 v3/v4 3/v4 series
Cores per processor	2/4	4/6/8/10/12/14	4/6/8/10/12/14
Maximum processor frequency/cache	3.8 GHz/8 MB	3 GHz/30 MB	3 GHz/30 MB
I/O expansion slots	2 PCIe 3.0	Up to 3 PCIe 3.0	Up to 6 PCIe 3.0
Maximum memory/# slots	64 GB/4	256 GB/8	256 GB/8
Storage controller (embedded)	B140i or H240*	B140i*	B140i*
Maximum storage drive bays	4 SFF or 2 LFF HDD/SSD	4 LFF max, HDD/SSD	12 LFF max, HDD/SSD
Maximum internal storage	16 TB	32 TB	96 TB
Networking ports (embedded)/FlexibleLOM	2 x 1GbE/FlexibleLOM slot on riser (optional)	2 x 1GbE/FlexibleLOM slot on riser (optional)	2 x 1GbE/FlexibleLOM slot on riser (optional)
VGA/serial/USB/SD ports	1/0/5/1	1/0/4/1	1/0/4/1
GPU support	Optional	N/A	Single-wide (1)
Form factor	Rack (1U)	Rack (1U)	Rack (2U)
System ROM	UEFI Legacy BIOS	UEFI Legacy BIOS	UEFI Legacy BIOS
Management	HPE iLO 4, Intelligent Provisioning, HPE Systems Insight Manager (SIM), HPE Insight Online, SUM**, RESTful Interface Tool Optional: HPE iLO Essentials, HPE iLO Scale out, HPE iLO Advanced, HPE Insight Control	HPE iLO 4, HPE OneView Standard, Intelligent Provisioning, HPE SIM, HPE Insight Online, SUM**, RESTful Interface Tool Optional: HPE iLO Essentials, HPE iLO Advanced, HPE Insight Control, HPE OneView Advanced	HPE iLO 4, HPE OneView Standard, Intelligent Provisioning, HPE SIM, HPE Insight Online, SUM**, RESTful Interface Tool Optional: HPE iLO Essentials, HPE iLO Advanced, HPE Insight Control, HPE OneView Advanced
Warranty—(years) (parts/labor/onsite)	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**.

** Smart Update Manager (SUM).

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
Number of processors	1	1 or 2
Processors supported	Intel Xeon E5-2600 v3/v4 series Intel Xeon E5-1600 v3/v4 series	Intel Xeon E5-2600 v3/v4 series
Cores per processor	4/6/8/10	6/8/10/12/14/16/18
Maximum processor frequency/cache	3.5 GHz/35 MB	2.6 GHz/35 MB
I/O expansion slots	Up to 5 PCIe 3.0	Up to 6 PCIe 3.0
Maximum memory/# slots	256 GB/8	512 GB/16
Storage controller (embedded)	B140i*	B140i*
Maximum storage drive bays	8 LFF, 16 SFF, or 4 NHP LFF HDD/SSD	10 LFF or 16 SFF HDD/SSD
Maximum internal storage	64 TB	72 TB***
Networking ports (embedded)/FlexibleLOM	2 x 1GbE/NA	2 x 1GbE/NA
VGA/serial/USB/SD ports	1/0/8/1	1/0/8/1
GPU support	Optional (1)	NVIDIA Quadro K2200 Graphics Accelerator AMD FirePro W7100 Accelerator Kit (Optional)
Form factor	Tower (4.5U)	Tower (5U)
System ROM	UEFI Legacy BIOS	UEFI Legacy BIOS
Management	HPE iLO 4, Intelligent Provisioning, HPE SIM, HPE Insight Online, SUM**, RESTful Interface Tool Optional: HPE iLO Essentials, HPE iLO Advanced, HPE Insight Control	HPE iLO 4, Intelligent Provisioning, HPE SIM, HPE Insight Online, SUM**, RESTful Interface Tool Optional: HPE iLO Essentials, HPE iLO Advanced, HPE Insight Control
Warranty—(years) (parts/labor/onsite)	3/1/1	3/1/1

* For a full list of supported options and details, see the server QuickSpecs at **hpe.com/info/qs**.

** Smart Update Manager (SUM).

*** Must purchase an optional 9th and 10th NHP LFF SATA HDD Drive

	DL120 Gen9	**DL160 Gen9**	**DL180 Gen9**
	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
Number of processors	1	1 or 2	1 or 2
Processors supported	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
Cores per processor	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
Maximum processor frequency/cache	3.5 GHz/45 MB	3.0 GHz/45 MB	3.0 GHz/45 MB
I/O expansion slots	Up to 3 PCIe 3.0	Up to 3 PCIe 3.0	Up to 6 PCIe 3.0
Maximum memory/# slots	256 GB/8	1 TB/16	1 TB/16
Storage controller (embedded)	B140i*	B140i*	B140i*
Maximum storage drive bays	4 LFF or 8 SFF HDD/SSD	4 LFF or 8 SFF HDD/SSD	12 LFF or 16 SFF HDD/SSD
Maximum internal storage	32 TB	32 TB	96 TB
Networking ports (embedded)/FlexibleLOM	2 x 1GbE/Optional FlexibleLOM slot on riser	2 x 1GbE/Optional FlexibleLOM slot on riser	2 x 1GbE/Optional FlexibleLOM slot on riser
VGA/serial/USB/SD ports	1/0/4/1	1/0/4/1	1/0/4/1
GPU support	Single-wide (1)	N/A	Single-wide and active (1)
Form factor	Rack (1U)	Rack (1U)	Rack (2U)
System ROM	UEFI Legacy BIOS	UEFI Legacy BIOS	UEFI Legacy BIOS
Management	HPE iLO 4, HPE OneView Standard, Intelligent Provisioning, HPE SIM, HPE Insight Online, SUM, SUM**, RESTful Interface Tool Optional: HPE iLO Essentials, HPE iLO Advanced, HPE Insight Control, HPE OneView Advanced	HPE iLO 4, HPE OneView Standard, Intelligent Provisioning, HPE SIM, HPE Insight Online, SUM, SUM**, RESTful Interface Tool Optional: HPE iLO Essentials, HPE iLO Advanced, HPE Insight Control, HPE OneView Advanced	HPE iLO 4, HPE OneView Standard, Intelligent Provisioning, HPE SIM, HPE Insight Online, SUM**, RESTful Interface Tool Optional: HPE iLO Essentials, HPE iLO Advanced, HPE Insight Control, HPE OneView Advanced
Warranty—(years) (parts/labor/onsite)	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**.

** Smart Update Manager (SUM).

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
Number of processors	1 or 2	1 or 2
Processors supported	Intel Xeon E5-2600 v3/v4 series	Intel Xeon E5-2600 v3/v4 series
Cores per processor	4/6/8/10/12/14/16/18/20/22	4/6/8/10/12/14/16/18/20/22
Maximum processor frequency/cache	3.5 GHz/55 MB	3.5 GHz/55 MB
I/O expansion slots	Up to 1 PCIe 2.0, 8 PCIe 3.0	Up to 2 PCIe 3.0
Maximum memory/# slots	3 TB***/24	3 TB/24
Maximum persistent memory		Up to (16) 8 GB NVDIMMs option (128 GB max)***
Storage controller (embedded)	B140i*	B140i*
Maximum storage drive bays	24 LFF or 48 SFF HDD/SSD Optional: NVMe PCIe SSD	4 LFF or 8 + 2 SFF HDD/SSD Optional: NVMe PCIe SSD
Maximum internal storage	192 TB	32 TB
Networking ports (embedded)/FlexibleLOM	4 x 1GbE/NA	4 x 1GbE/Optional FlexibleLOM
VGA/serial/USB/SD ports	1/1/8/1	2/1/5/2
GPU support	Single/double-wide and active up to 10.5" (4)	Single-wide and active up to 9.5" (2)
Form factor	Tower or rack (5U)	Rack (1U)
System ROM	UEFI Legacy BIOS	UEFI Legacy BIOS
Management	HPE iLO 4, HPE OneView Standard, Intelligent Provisioning, HPE SIM, HPE Insight Online, SUM**, RESTful Interface Tool Optional: HPE iLO Advanced, HPE Insight Control	HPE iLO 4, HPE OneView Standard, Intelligent Provisioning, HPE SIM, HPE Insight Online, SUM**, RESTful Interface Tool Optional: HPE iLO Advanced, HPE Insight Control
Warranty—(years) (parts/labor/onsite)	3/3/3	3/3/3

* For a full list of supported options and details, see the server QuickSpecs at **hpe.com/info/qs**.

** Smart Update Manager (SUM).

*** 128 GB LRDIMM support 2H2016

	DL380 Gen9	DL385p Gen8
	The no-compromise data center standard for multi-workload compute	Performance and flexibility that means business
Number of processors	1 or 2	1 or 2
Processors supported	Intel Xeon E5-2600 v3/v4 series	AMD Opteron 6300 series
Cores per processor	4/6/8/10/12/14/16/18/20/22	4/8/12/16
Maximum processor frequency/cache	3.5 GHz/55 MB	3.5 GHz/16 MB
I/O expansion slots	Up to 6 PCIe 3.0	Up to 6 PCIe 2.0
Maximum memory/# slots	3 TB/24	768 GB/24
Maximum persistent memory	Up to (16) 8 GB NVDIMMs option (128 GB max)***	
Storage controller (embedded)	B140i*	P420i*
Maximum storage drive bays	12 + 3 LFF or 24 + 2 SFF HDD/SSD Optional: NVMe PCIe SSD	12 LFF or 25 SFF HDD/SSD
Maximum internal storage	120 TB	96 TB
Networking ports (embedded)/FlexibleLOM	4 x 1GbE/Optional FlexibleLOM	NA/FlexibleLOM
VGA/serial/USB/SD ports	1 + 1/1/5/1	2/1/8/1
GPU support	Single/double-wide and active/passive up to 10.5" (2)	N/A
Form factor	Rack (1U)	Rack (2U)
System ROM	UEFI Legacy BIOS	Legacy BIOS
Management	HPE iLO 4, HPE OneView Standard, Intelligent Provisioning, HPE SIM, HPE Insight Online, SUM**, RESTful Interface Tool Optional: HPE iLO Advanced, HPE Insight Control, HPE OneView Advanced	HPE iLO 4, HPE OneView Standard, Intelligent Provisioning, HPE SIM, HPE Insight Online, SUM** Optional: HPE iLO Advanced, HPE Insight Control, HPE OneView Advanced
Warranty—(years) (parts/labor/onsite)	3/3/3	3/3/3

* For a full list of supported options and details, see the server QuickSpecs at **hpe.com/info/qs**.

** Smart Update Manager (SUM).

*** Coming mid-2016.

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
Number of processors	1, 2, or 4	2, 3, or 4
Processors supported	Intel Xeon E5-4600 v3/v4 series	Intel Xeon E7-4800 v3/v4 series Intel Xeon E7-8800 v3/v4 series
Cores per processor	6/10/12/14/16/18/20/22	4/8/10/12/14/16/18/20/22/24
Maximum processor frequency/cache	2.6 GHz/55 MB	3.2 GHz/60 MB
I/O expansion slots	Up to 7 PCIe 3.0	Up to 9 PCIe 3.0
Maximum memory/# slots	6 TB***/48	12 TB***/96
Storage controller (embedded)	Embedded SATA*	P830i*
Maximum storage drive bays	24 SFF HDD/SSD Optional: NVMe PCIe SSD	10 SFF HDD/SSD Optional: NVMe PCIe SSD
Maximum internal storage	48 TB	20 TB
Networking ports (embedded)/FlexibleLOM	NA/FlexibleLOM	NA/FlexibleLOM
VGA/serial/USB/SD ports	2/1/9/1	2/1/8/1
GPU support	Single-wide (2)	Double-wide (5)
Form factor	Rack (2U)	Rack (4U)
System ROM	UEFI Legacy BIOS	UEFI Legacy BIOS
Management	HPE iLO 4, HPE OneView Standard, Intelligent Provisioning, HPE SIM, HPE Insight Online, SUM**, RESTful Interface Tool Optional: HPE iLO Advanced, HPE Insight Control, HPE OneView Advanced	HPE iLO 4, HPE OneView Standard, Intelligent Provisioning, HPE SIM, HPE Insight Online, SUM**, RESTful Interface Tool Optional: HPE iLO Advanced, HPE Insight Control, HPE OneView Advanced
Warranty—(years) (parts/labor/onsite)	3/3/3	3/3/3

* For a full list of supported options and details, see the server QuickSpecs at **hpe.com/info/qs**.

** Smart Update Manager (SUM).

*** 128 GB LRDIMM support 2H2016

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

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.

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

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 able to 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.

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), HPE OneView, and HPE Insight Online. With HPE infrastructure management's built-in automation, HPE ProLiant servers are so intelligent 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
Eliminating infrastructure complexity with automation simplicity
Based on a unique modern architecture, HPE OneView speeds IT service rollouts and helps actively prevent error-induced downtime through a template-based, software-defined approach to management.

And HPE OneView also saves time by acting as an automation hub that performs infrastructure configuration and management tasks at the request of other applications. HPE OneView is:

• **Converged**—Manage across compute, storage, and networking, and enjoy up to a 50 percent reduction in tools to learn, manage, deploy, and integrate.[14]

• **Software-defined**—Capture best practice knowledge in templates to guarantee that infrastructure is deployed and managed the right way every time.

• **Automated**—Use HPE OneView REST application programming interfaces to deploy a VMware vSphere cluster in just five easy steps[15] and leverage HPE OneView as the infrastructure automation hub for your enterprise.

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

Embedded management
Embedded management for the full server lifecycle
A set of essential, yet powerful server management capabilities are embedded on all HPE servers. These capabilities, such as HPE iLO, are designed to meet the needs of any organization, from enterprise to smaller IT environments.

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 Insight Online
Support from anywhere, at any time
HPE Insight Online is an online infrastructure management and support dashboard available through the HPE Support Center portal and powered by HPE remote support technology. The Insight Online dashboard in the HPE Support Center Mobile App enables you to remain up to date whether you are in the office or on the road.

You can use the Insight Online dashboard to track service events and support cases, view device configurations, create reports, and proactively monitor your HPE contracts and warranties, as well as manage your HPE Proactive Service credits.

[14] Based on HPE internal analysis, March 2016, comparing OneView 2.0 vs. the traditional approach to infrastructure management requiring eight tools.

[15] Determined during HPE internal testing in January 2014, comparing HPE OneView 1.05 with the HPE Insight Control for VMware vCenter Server v7.30 plug-in vs. traditional HPE management tools.

HPE storage solutions for HPE ProLiant servers

You can gain the full value from your investments when you choose advanced HPE storage devices, such as fabric switching, disk enclosures, and shared storage. Hewlett Packard Enterprise also offers backup systems, tape drives, auto loaders, and libraries for backup or disaster recovery.

HPE StoreFabric SAN switches
Choose from a wide range of Fibre Channel switches, multi protocol routers, host bus adapters, converged network adapters, and cables and optics for your SAN. These offerings deliver the scalability, performance, and broad interoperability that your mission-critical data and applications demand. Combining ease-of-use, flexibility, and improved security with cost-effective pricing, these switches are key enablers of your dynamic and adaptive storage-networking environment. **hpe.com/storage/SAN**

HPE disk enclosures
Is your storage growing by leaps and bounds, exceeding your current system capacity? Manage your growing storage needs by deploying low-cost, high capacity, high performance external storage disk enclosures—the ideal choice for small application environments in SMBs, remote offices, and departmental locations. **hpe.com/storage/disk-enclosures**

HPE shared storage
When it comes to storage, Hewlett Packard Enterprise has the broadest and most comprehensive portfolio in the industry, featuring external shared storage that scales capacity and performance as your business grows. With easy-to-use Windows-based NAS file and print solutions for SMBs, through modern scale-out Tier 1 arrays for the most demanding data centers, Hewlett Packard Enterprise has a storage solution to fit your exact needs and budget. **hpe.com/info/storage**

HPE backup systems
Remove the time and frustration from backup and disaster recovery across your enterprise. HPE StoreOnce Backup is the only federated deduplication solution to provide leading disk-based backup for the full spectrum of IT environments—from small remote sites to large enterprises. Seamlessly integrating with your current backup applications, HPE StoreOnce Backup provides flexible integration for NAS, SAN, and virtualized environments. **hpe.com/storage/StoreOnce**

HPE tape drives, autoloaders, and libraries
Tape plays a critical role in the storage strategy for companies of all sizes. Combined with disk storage in a multi-tier protection strategy, HPE tape products offer a storage solution with low (TCO). Tape is also portable, making it ideal for secure offsite and offline backup, disaster recovery, data compliance, and long-term archiving. **hpe.com/storage/tape**

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**

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**

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 core 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**

- **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 onsite 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%[16] reduction in down time, near 100%[16] diagnostic accuracy and a single consolidated view of your environment. By connecting, you will receive 24x7 monitoring, pre-failure 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** or contact your local HPE sales representative or authorized HPE ServiceOne Partner.

[16] IDC has determined that customers who take advantage of the Gen9 support capabilities have near 100% diagnostic accuracy and reduce service times by 77%.

IDC White Paper Sponsored by HPE & Intel, The Business Value of Connected Support from HPE, Doc# 254594, December, 2015. **hp.com/h20195/ v2/getpdf.aspx/4AA5-8020ENW.pdf?ver=1.0**

The undisputed server market leader
With one HPE ProLiant server shipping every 11.6 seconds[17] and more than 37.1 million sold, HPE ProLiant servers are the undisputed market share leader.[18] 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.

- **HPE Server Management Family**—Improve efficiency and accelerate service delivery.

- **HPE ProLiant Easy Connect**—provides simplified IT services to small and midsize businesses, education, remote and branch offices.

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
hpe.com/servers/rack
hpe.com/servers/tower
hpe.com/servers/microserver
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