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HPE SERVERS AND STORAGE: PORTFOLIO AT A GLANCE

February 2020

OVERVIEW

- View the HPE server and storage portfolio at a high level
- Find the right products to drive infrastructure transformation
- Compare key specifications across the product line

TRANSFORM IT WITH SOFTWARE-DEFINED INFRASTRUCTURE

Cloud is not a destination; it's a model for a better way of doing things. To ensure your private cloud experience mirrors that of the public cloud, you need a partner who can help you build private clouds and manage hybrid cloud successfully, with the flexibility to adapt to changing business needs, by transforming your technology, people, and processes and economics. HPE is uniquely positioned to accelerate your hybrid cloud strategy through world-class software-defined IT solutions, proven hybrid cloud expertise, and flexible consumption and economic options—all supporting your choice of clouds, workloads, and tools. hpe.com/us/en/solutions/data-center-infrastructure.html

HPE SYNERGY

Gain efficiency and control, and deploy IT resources quickly for any workload through a single interface. HPE Synergy, a powerful software-defined solution, enables you to compose fluid pools of physical and virtual compute, storage, and fabric resources into any configuration for any application. Learn more at hpe.com/synergy

THE HPE SERVER FAMILY (hpe.com/servers)

Innovation based on standards

Fundamental to establishing a converged infrastructure are your underlying platform choices. Whether it is a departmental server, an enterprise data center, or anything in between, HPE is committed to meeting your exact needs. Only HPE has the breadth of innovation, open partnerships, and depth of expertise to bring it all together.

Our portfolio includes:

HPE ProLiant servers—The world's most secure industry standard servers,[1] HPE ProLiant Gen10 servers coupled with HPE OneView, HPE InfoSight and HPE OneSphere deliver software-defined compute to accelerate application performance, infrastructure and application deployment, and improve server operations. Our wide selection of multicore, multiprocessor servers, and server blades meet needs ranging from those of cost-sensitive growing businesses to the performance and scalability demands of global enterprises. ProLiant servers support the industry's leading operating systems and applications for data centers of all sizes. hpe.com/info/proliant-dl-servers, hpe.com/info/towerservers, hpe.com/info/blades

HPE BladeSystem—HPE BladeSystem lets you transform legacy infrastructure and scale business performance while optimizing costs. With the powerful HPE OneView management, BladeSystem puts your business on an agile, secure foundation and on the path to a composable experience. hpe.com/info/bladesystem

HPE Apollo—The HPE Apollo high-density server family is built for the highest levels of performance, scale, and efficiency. They are rack-scale compute, storage, networking, power and cooling—massively scale-up and scale-out solutions, ideal for your Big Data analytics, object storage, high performance computing (HPC), and artificial intelligence (AI) workloads. hpe.com/info/apollo

HPE Mission Critical Solutions—When you need real-time business and maximum uptime, HPE Mission Critical Solutions are your ideal choice. This portfolio is unparalleled for its resiliency, availability, and security for mission-critical environments where business continuity is expected.

For industries that never stop, HPE Integrity NonStop is uniquely designed for the very highest level of availability: an integrated solution stack with massive scalability, data integrity, and low TCO. hpe.com/info/nonstop. For your most demanding and critical SAP HANA®, Oracle and SQL Server workloads, HPE Superdome Flex delivers an unmatched combination of performance, availability, and reliability for environments of any size. This is also an ideal platform to tackle AI and HPC workloads holistically. hpe.com/superdome. HPE Integrity Superdome X Server delivers groundbreaking performance and mission-critical availability at industry standard efficiencies. Leverage unparalleled scale and flexible modularity for data-intensive Linux® applications with HPE Integrity MC990 X. For workloads vital to your enterprise, Integrity and HP-UX are designed for always-on business: a highly integrated UNIX® system delivering mission-critical availability, stability, and predictable performance. hpe.com/info/hpux. For time-tested functions, Integrity with OpenVMS remains a rock-solid platform for customers that require high levels of security, availability, and disaster tolerance.

HPE Server Options—Strengthen the foundation of your data center with high-caliber products that enhance system performance and functionality. HPE memory, drives, processors, racks, and power and cooling offerings are easy to manage and are tailored for ProLiant, Integrity, and HPE storage systems. With HPE Qualified Options, you can be confident in your whole infrastructure. hpe.com/info/serveroptions

HPE Data Center Network solutions—Built from HPE FlexNetwork Architecture, HPE Data Center Network solutions meet the demanding needs of today's highly virtualized, large-scale application environments. HPE FlexFabric Data Center is the network foundation for the servers, storage, and software of converged infrastructure. This robust networking foundation helps you improve service levels and agility, enhance business continuity, and reduce operating costs. hpe.com/networking/datacenter

Partner Software—HPE tests, certifies, and supports a broad range of partner OS and virtualization software on HPE ProLiant servers. HPE resells and provides service and support for Microsoft Windows Server, Red Hat® Enterprise Linux, SUSE Linux Enterprise Server, Canonical Ubuntu Server, and VMware®. HPE also resells Cloudera, Hortonworks, Scality, and Cleversafe with support provided by the partner. For more information, visit the OS and Virtualization website. hpe.com/info/ossupport

HPE Server Management is an agile infrastructure management solution for accelerating IT service delivery and support. We provide a comprehensive set of server management capabilities designed to manage the lifecycle for the HPE Server portfolio to reduce the time, complexity, and cost of everyday IT management. hpe.com/us/en/servers/management

hpe.com/info/rackservers
hpe.com/info/towerservers
Security
Benchmarks

[1] Based on external firm conducting cybersecurity penetration testing of three server products from three manufacturers, September 2019

HPE MOONSHOT SYSTEMS

HPE Moonshot is an integrated, workload-optimized, software-defined server system, delivered in a compact, energy efficient form factor. Moonshot infrastructure design delivers breakthrough efficiency and scale by replacing general purpose computing with more energy-efficient System-on-Chip (SoC) containing integrated accelerators tailored for specific workloads. This enables better resource efficiency, while reducing operational cost and improving IT set up and maintenance simplicity.

For more information: hpe.com/info/moonshot

HPE EDGELINE CONVERGED EDGE SYSTEMS

HPE Edgeline Converged Edge Systems is the industry first product category that combines uncompromised IT systems (Intel® Xeon® compute, storage and management) with Operational Technology (OT) Systems (control systems, data capture and industrial networks) in a ruggedized form factor capable to run analytics in virtually any edge environment. HPE Edgeline enable new applications and deliver dramatic improvements in operating cost, speed, reliability and security, while saving time, space, and energy.

For more information: hpe.com/info/edgeline

HPE POINTNEXT SERVICES

Achieve maximum return from your IT investment

Get the expertise you need at every step of the IT journey with HPE Pointnext Services and Support. We help you lower your risks and costs using proven best practices, automation, and methodologies that have been tested and refined by HPE experts through thousands of implementations and deployments globally. With Advisory Services, we focus on your business outcomes and goals, partnering with you to design your transformation and build a road map tuned to your unique challenges. Our professional, operational and technical services can be leveraged to speed up time-to-production, boost performance, and accelerate your business.

HPE Pointnext Services specializes in flawless and on-time implementation, on-budget execution, and creative configurations that get the most out of software and hardware alike. We collaborate with your IT team from technical design to implementation, build to migration, distribution, and finally to operational consulting and service.

- Integration and performance services provide resources to help you get your systems up and running quickly and augment your IT staff for projects.
- HPE Foundation Care provides fast problem resolution with comprehensive coverage and access to experts.
- HPE Proactive Care provides proactive problem prevention and an enhanced support experience for your systems.
- HPE Datacenter Care helps businesses run their IT operations by optimizing day-to-day tasks, integrating technology management and streamlining to a more agile cloud-like model.

Consume IT services on your terms, getting the specific value that you need for your business. HPE GreenLake enables you to scale easily by adding capacity in minutes, not months. You pay only for what you actually need, creating true pay-per-use outcomes. Simplify your IT planning, capacity forecasting, and cost allocation with HPE GreenLake.

Learn more about HPE Pointnext Services and Solutions for your business.

HPE PROLIANT SERVERS—10, 100, 300, 500 SERIES

HPE ProLiant servers

			ML/DL10 series: Small scale server: Easy to buy and deploy		**ML/DL100 series:** Right-sized server: Balance of performance, efficiency, and manageability			**ML/DL300 series:** Versatile server: Industry-leading portfolio offering flexible choices for multi-workload compute and storage					**DL500 series:** Scalable performance for business-critical workloads	
														
	MicroServer Gen10 Plus	**MicroServer Gen10**	**ML30 Gen10**	**DL20 Gen10**	**ML110 Gen10**	**DL160 Gen10**	**DL180 Gen10**	**ML350 Gen10**	**DL325 Gen10**	**DL360 Gen10**	**DL380 Gen10**	**DL385 Gen10**	**DL560 Gen10**	**DL580 Gen10**
Number of processors	1	1	1	1	1	1 or 2	1 or 2	1 or 2	1	1 or 2	1 or 2	1 or 2	1, 2, or 4	1, 2, 3, or 4
Cores per processor	2/4	2/4	2/4/6	2/4/6	4/6/8/10/12/14/16	4/6/8/10/12/14/16/ 18/20/22/24	4/6/8/10/12/14/16/ 18/20/22/24	4/6/8/10/12/ 14/16/18/20/ 22/24/26/28	8/16/24/32/64	4/6/8/10/12/14/16/ 18/22/24/26/28	4/6/8/10/12/14/16/ 18/20/22/24/26/28	8/16/24/32/64	4/6/8/10/12/14/16/18/ 20/22/24/26/28	4/6/8/10/12/14/16/18/20/ 22/24/26/28
Processors supported	Intel Xeon E2200 series Intel Pentium® G5400 series	AMD Opteron X3421 AMD Opteron X3216	Intel Xeon E-2100 series; Intel® Core™ i3-8300; Intel Pentium G5400	Intel Xeon E-2100 Series; Intel Core i3-8300; Intel Pentium G5400	Intel Xeon Scalable processor 5200, 4200, and 3200 series; Intel Xeon Scalable processor 5100, 4100, and 3100 series	Intel Xeon Scalable processor 8200, 6200, 5200, 4200, 3200 series; Intel Xeon Scalable processor 4100 and 3100 series	Intel Xeon Scalable processor 8200, 6200, 5200, 4200, 3200 series; Intel Xeon Scalable processor 4100 and 3100 series	Intel Xeon Scalable processor 8200, 6200, 5200, 4200, 3200 series;* Intel Xeon Scalable processor 8100, 6100, 5100, 4100, and 3100 series	AMD EPYC 7000 series processors	Intel Xeon Scalable processor 8200, 6200, 5200, 4200, 3200 series; Intel Xeon Scalable processor 8100, 6100, 5100, 4100, and 3100 series	Intel Xeon Scalable processor 8200, 6200, 5200, 4200, 3200 series; Intel Xeon Scalable processor 8100, 6100, 5100, 4100, and 3100 series	AMD EPYC 7000 series processors	Intel Xeon Scalable processor 8200, 6200, 5200 series; Intel Xeon Scalable processor 8100, 6100, and 5100 series	Intel Xeon Scalable processor 8200, 6200, and 5200 series; Intel Xeon Scalable processor 8100, 6100, and 5100 series
Maximum processor frequency	3.8 GHz	3.4 GHz	3.8 GHz	3.8 GHz	3.8 GHz	3.8 GHz	3.8 GHz	3.8 GHz	3.4 GHz	3.8 GHz	3.8 GHz	3.4 GHz	3.8 GHz	3.8 GHz
Cache	Up to 8 MB L3	2 MB L2	Up to 12 MB L3	Up to 12 MB L3	Up to 22 MB	Up to 35.75 MB	Up to 35.75 MB	Up to 38.5 MB	Up to 256 MB L3	Up to 38.5 MB	Up to 38.5 MB	Up to 256 MB L3	Up to 38.5 MB	38.5 MB
Maximum memory	32 GB (2 DIMM slots)	32 GB (2 DIMM slots)	64 GB (4 DIMM slots)	64 GB (4 DIMM slots)	192 GB (6 DIMM slots)	1 TB (16 DIMM slots)	1 TB (16 DIMM slots)	3 TB (24 DIMM slots)	2 TB (16 DIMM slots)	3 TB (24 DIMM slots)	3 TB (24 DIMM slots)	4 TB (32 DIMM slots)	6 TB (48 DIMM slots)	6 TB (48 DIMM slots)
Persistent memory	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Up to (12) 16 GB NVDIMMs option (192 GB max.)**	Up to (24) 16 GB NVDIMMs option (384 GB max.)**	N/A	Up to (24) 16 GB NVDIMMs option (384 GB max.)**	Up to (24) 16 GB NVDIMMs option (384 GB max.)**
Maximum storage drive bays	4 NHP LFF or 4 NHP SFF HDD/SSD	(4) LFF SATA Non-hot plug	(8) SFF SAS/SATA hot plug (4) LFF SAS/SATA hot plug (4) LFF SATA Non-hot plug (1) M.2 NVMe SSD	(4) SFF + (2) SFF (2) LFF hot plug (2) LFF Non-hot plug	(16) SFF SAS/SATA HDD/SSD, (8) LFF SAS/SATA HDD/SSD, or (8) NHP LFF SATA HDD	8 + 2 SFF or 4 LFF HDD/SSD + M.2 SATA support	(8) + (24) SFF or (12) LFF SAS/SATA HDD/SSD + (2) SFF rear enablement kit + M.2 SATA support	(24) SFF SAS/SATA HDD/SSD, (12) LFF SAS/SATA HDD/SSD, (8) NVMe SSD option, or (12) NHP LFF SATA HDD	(4) LFF SAS/SATA HDD/SSD, (8) SFF SAS/SATA HDD/SSD + (2) SFF SAS/SATA HDD/SSD (10) SFF NVMe	(10) NVMe + (1) SFF or (8) + (2) + (1) SFF or (4) LFF + (1) SFF SAS/SATA HDD/SSD M.2 SATA/PCIe enabled, optional dual uFF M.2 Enablement Kits	(24) + (6) SFF SAS/SATA HDD/SSD or (12) + (4) + (3) LFF + (2) SFF SAS/SATA HDD/SSD or 20 NVMe PCI SSD, M.2 enabled, optional dual uFF M.2 Enablement Kits	(8) LFF SAS/SATA HDD/ SSD + UMB (12) LFF SAS/SATA/SSD + (4) LFF mid-plane + (3) LFF + (2) SFF rear drive bay (total 19 LFF + 2 SFF drives) (8) SFF SAS/SATA/SSD + optional UMB, SFF, or NVMe drive bay options (24) SFF SAS/SATA HDD/SSD + (6) SFF rear drives (total of 30 SFF drives) (24) NVMe PCI	(24) SFF SAS/SATA HDD/SSD or (12) NVMe PCI SSD (optional), M.2 enabled, optional dual uFF enablement kits	(48) SFF SAS/SATA HDD/ SSD (2) SFF SAS/SATA/ NVMe, and (20) NVMe SSD option kits (optional)
Maximum internal storage	16 TB	16 TB	61.44 TB	91.8 TB	96 TB	48 TB	144 TB	184 TB	154 TB	42+ TB	197+ TB	459 TB	184 TB	368 TB
I/O slots	Up to 1 PCIe 3.0	Up to 2 PCIe 3.0	Up to 4 PCIe 3.0	Up to 2 PCIe 3.0	Up to 5 PCIe 3.0	Up to 3 PCIe 3.0	Up to 6 PCIe 3.0	Up to 8 PCIe 3.0	3 PCIe 3.0	Up to 3 PCIe 3.0	Up to 8 PCIe 3.0	8 PCIe 3.0	Up to 8 PCIe 3.0	16 PCIe 3.0
GPU	Optional Radeon Pro WX 2100	Optional AMD Radeon Pro WX2100	NVIDIA® P2000 or AMD WX2100	N/A	NVIDIA Quadro P2000 and AMD Radeon Pro WX2100	N/A	NVIDIA P2000	FL/FH double-wide and single-wide active and passive (4)	N/A	Single-wide and active to 9.5" (2) in length, up to 150W each	Single-wide (5)/double-wide (3) and active/ passive up to 10.5"	Single-wide (5)/double-wide (3) and active/ passive up to 10.5 cards	HL/FH (2)	FL/FH double-wide (4)
Operating systems and virtualization software supported	Microsoft Windows Server, Red Hat Enterprise Linux (RHEL), VMware, Hyper-V, and ClearOS	ClearOS, Microsoft Windows Server	ClearOS, Microsoft Windows Server, Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), and VMware	ClearOS, Microsoft Windows Server, Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), and VMware	Microsoft Windows Server, Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), VMware, Hyper-V, and ClearOS	Microsoft Windows Server, Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), VMware, and Hyper-V	Microsoft Windows Server, Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), VMware, and Hyper-V	Microsoft Windows Server, Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), VMware, Hyper-V, and ClearOS	ClearOS, Microsoft Windows Server, Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), and VMware	ClearOS, Microsoft Windows Server, Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), and VMware	ClearOS, Microsoft Windows Server, Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), and VMware	ClearOS, Microsoft Windows Server, Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), and VMware	Microsoft Windows Server, Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), and VMware	Microsoft Windows Server, Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), and VMware
Management	HPE iLO 5, Intelligent Provisioning, Smart Update Manager, RESTful Interface Tool, iLO Amplifier Pack Optional: HPE iLO Advanced, HPE InfoSight	N/A	HPE iLO 5, HPE OneView Standard, Intelligent Provisioning, Smart Update Manager, RESTful Interface Tool, iLO Amplifier Pack, Optional: HPE iLO Advanced, HPE InfoSight	HPE iLO 5, HPE OneView Standard, Intelligent Provisioning, Smart Update Manager, RESTful Interface Tool, iLO Amplifier Pack, Optional: HPE iLO Advanced, HPE OneView Advanced, HPE InfoSight	HPE iLO 5, HPE OneView Standard, HPE InfoSight, Intelligent Provisioning, Smart Update Manager, RESTful Interface Tool, iLO Amplifier Pack, Optional: HPE iLO Advanced	HPE iLO 5, HPE OneView Standard, Intelligent Provisioning, Smart Update Manager, RESTful Interface Tool, iLO Amplifier Pack Optional: HPE iLO Advanced, HPE OneView Advanced, HPE InfoSight	HPE iLO 5, HPE OneView Standard, Intelligent Provisioning, Smart Update Manager, RESTful Interface Tool, iLO Amplifier Pack Optional: HPE iLO Advanced, HPE OneView Advanced, HPE InfoSight	HPE iLO 5, HPE OneView Standard, Intelligent Provisioning, Smart Update Manager, RESTful Interface Tool, iLO Amplifier Pack Optional: HPE iLO Advanced, HPE OneView Advanced, HPE InfoSight	HPE iLO 5, HPE OneView Standard, Intelligent Provisioning, Smart Update Manager, RESTful Interface Tool, iLO Amplifier Pack Optional: HPE iLO Advanced, HPE OneView Advanced, HPE InfoSight	HPE iLO 5, HPE OneView Standard, Intelligent Provisioning, Smart Update Manager, RESTful Interface Tool, iLO Amplifier Pack Optional: HPE iLO Advanced, HPE OneView Advanced, HPE InfoSight	HPE iLO 5, HPE OneView Standard, Intelligent Provisioning, Smart Update Manager, RESTful Interface Tool, iLO Amplifier Pack Optional: HPE iLO Advanced, HPE OneView Advanced, HPE InfoSight	HPE iLO 5, HPE OneView Standard, Intelligent Provisioning, Smart Update Manager, RESTful Interface Tool, iLO Amplifier Pack Optional: HPE iLO Advanced, HPE OneView Advanced, HPE InfoSight	HPE iLO 5, HPE OneView Standard, Intelligent Provisioning, Smart Update Manager, RESTful Interface Tool, iLO Amplifier Pack Optional: HPE iLO Advanced, HPE OneView Advanced, HPE InfoSight	HPE iLO 5, HPE OneView Standard, Intelligent Provisioning, Smart Update Manager, RESTful Interface Tool, iLO Amplifier Pack Optional: HPE iLO Advanced, HPE OneView Advanced, HPE InfoSight
Form factor/chassis depth	Ultra Micro Tower/9.65"	Ultra Micro Tower/10"	Micro ATX Tower (4U)/18.71"	Rack (1U)/15.05"	Tower (4.5U)/< 19"	Rack (1U)/24.1"	Rack (2U)/24.99"	Tower (4U)/25.5" or Rack (5U)/25.5"	Rack (1U)/24.2"	Rack (1U)/27.81" (SFF), 29.5" (LFF)	Rack (2U)/26.75" (SFF), 28.75" (LFF)	Rack (2U)/28.75"	Rack (2U)/29.75" (SFF)	Rack (4U)/29.75"
Warranty—year(s) (parts/labor/on-site)	1/1/1	1/1/1	3/1/1 or 3/3/3 (depending on region)	3/3/3	3/3/3	3/3/3	3/3/3	3/3/3	3/3/3	3/3/3	3/3/3	3/3/3	3/3/3	3/3/3

* Intel® Speed Select, 1-socket Optimized, NFV Optimized and VM Density Optimized processors.

** Supported on first generation Intel Xeon Scalable processors.

HPE SYNERGY AND BLADESYSTEM COMPUTE AND STORAGE MODULES

Compute Modules

SY480 Gen10*

SY660 Gen10*

Number of processors	1 or 2		2 or 4	
Processors supported	Intel Xeon Scalable processors family—1st Generation****	Intel Xeon Scalable processors family—2nd Generation*****	Intel Xeon Scalable processors family—1st Generation****	Intel Xeon Scalable processors family—2nd Generation*****
Processors—Cores available	4 to 28		4 to 28	
Processors—Frequency	1.7 to 3.6 GHz	1.8 to 3.8 GHz	2.0 to 3.6 GHz	1.8 to 3.8 GHz
Memory slots	24	24	48	48
Memory capacity—Per socket	Up to 1.5 TB***	Up to 1, 2, or 4.5 TB***	Up to 6 TB***	Up to 1, 2, or 4.5 TB***
Memory speed	DDR4 @ 2666 MT/s***	DDR4 @ 2933 MT/s***	DDR4 @ 2666 MT/s***	DDR4 @ 2933 MT/s***
Persistent memory	N/A	Intel (256 GB, 512 GB, 1 TB)***	N/A	Intel (256 GB, 512 GB, 1 TB)***
Operating systems supported**	MS Win, RHEL, SLES**		MS Win, RHEL, SLES**	
Network ports	Up to 3 Mezzanine Slots for SAS, Ethernet, or Fibre Channel depending on configuration		Up to 6 Mezzanine Slots for SAS, Ethernet, or Fibre Channel depending on configuration	
Drives supported	2 SFF SAS/SATA or 2 SFF NVMe (optional) or 2 M.2 SATA and 2 Dual uFF, hot plug, depending on model		0 to 4 SFF SAS/SATA/NVMe SSDs and/or up to 8 uFF Flash and/or up to 4 internal M.2 drives	
Maximum internal storage	Up to 2 Drives + 40 w/ D3940 (up to 5 storage modules per frame) 204 max. drives per frame		Up to 4 Drives + 40 w/ D3940 (up to 4 storage modules per frame) 168 max. drives per frame	
I/O slots	Up to 3 available		Up to 6 available	
Management	HPE OneView		HPE OneView	
Form factor	Half-height, 12 per enclosure (mixing allowed)		Full-height, 6 per enclosure (mixing allowed)	
Warranty—year(s) (parts/labor/on-site)	3/3/3		3/3/3	

* For more details please review QuickSpecs at hpe.com/v2/GetDocument.aspx?docname=a00008520enw and hpe.com/v2/GetDocument.aspx?docname=a00008522enw.
** For more information on HPE's certified and supported ProLiant servers for OS and Virtualization software and latest listing of software drivers available for your server, please visit our Support Matrix at hpe.com/info/ossupport.
*** Capacity and Speed of Memory is highly dependent on version #, number of slots occupied and processor selected. See Memory Population Tables in individual Compute QuickSpecs for details.
**** Intel Xeon Scalable Family 100 Series (s1##aa) Bronze, Silver, Gold, and Platinum shelves.
***** Intel Xeon Scalable Family 200 Series (s2##aa) Bronze, Silver, Gold, and Platinum shelves.

Storage Modules

D3940 Storage Module

Max. Drive quantity supported	1 to 40 small form factor (SFF) drives
Fabric	Supports 6G SATA and 12G SAS
Controller model	HPE Smart Array P416ie-m 12G SAS Mezzanine Controller
Controller RAID options	RAID 0, 1, 5, 6, 10, 50, 60, 1 ADM, 10 ADM, and HBA mode
Interconnect module	HPE Synergy 12 Gb SAS Connection Module with 12 internal ports
Drive mix	Choice to mix and match SAS/SATA, SSD/HDDs in each storage module, provisioned with servers in the same Synergy frame
Logical array limitation	Must be composed with a single drive type
Max. SAS storage capacity per module	612 Terabytes (with 40 x 15.3 TB SAS RI SSDs)
Max. storage capacity per frame	3 Petabytes
Max. drives per frame	200 drives
Max. storage modules per frame	5 HPE Synergy D3940 storage modules
Composable storage	HPE OneView
Recommended HA storage/ fault tolerance	SAS SFF redundant paths require additional I/O module and SAS connection module. (SATA drives have a single port limitation, making them more vulnerable to failure than SAS drives.)
RAID	Support of RAID 0, 1, 5, 6, 10, 60, 1 ADM, 10 ADM presentation to OS as a volume and Software RAID

Frames

HPE Synergy 12000 Frame

Device bays	Up to 12 half-height, Up to 6 full-height mixed configurations supported
Interconnect bays	Up to 6 Interconnect slots (3+3 redundant) with support for SAS, Ethernet, or Fibre Channel ICM fabrics
Power	Choice of up to 6 hot plug power supplies (3+3 redundancy): Single-phase only VAC 2650W each, HVDC, 277 VAC, or -48 VDC @ 2650W each. No mixing of PSUs
Cooling	Centralized Cooling with 10 redundant fans
Management/ Appliances	Composer, powered by OneView. Single or Dual redundant appliances for managing up to 250 Compute Modules over multiple racks. Image Streamer for managing server Boot environments
Height	Rack Height (10U)

BladeSystem

BL460c Gen10*

Number of processors	1 or 2	
Processors supported	4 to 26	4 to 26
Processors—Cores available	Intel Xeon Scalable processors family—1st Generation****	Intel Xeon Scalable processors family—2nd Generation*****
Processors—Frequency	1.7 to 3.6 GHz	1.8 to 3.8 GHz
Memory slots	16	16
Memory capacity—Per socket	Up to 1 TB***	Up to 1 TB***
Memory speed	DDR4 @ 2666 MT/s***	DDR4 @ 2933 MT/s***
Persistent memory	N/A	N/A
Operating systems supported**	MS Win, RHEL, SLES**	
Network ports	Up to 2 Mezzanine Slots for SAS, Ethernet, or Fibre Channel depending on configuration	
Drives supported	2 SFF SAS/SATA or 2 SFF NVMe (optional) or 2 M.2 SATA and 2 Dual uFF, hot plug, depending on model	
Maximum internal storage	Up to 2 Drives + 12 w/ Expansion Drive	
I/O slots	Up to 2 available	
Management	OA, HPE OneView	
Form factor	Half-height, 16 per enclosure (mixing allowed)	
Warranty—year(s) (parts/labor/on-site)	3/3/3	

* For more details please review QuickSpecs at h20195.www2.hpe.com/v2/GetDocument.aspx?docname=a00008517enw.
** For more information on HPE's certified and supported ProLiant servers for OS and Virtualization software and latest listing of software drivers available for your server, please visit our Support Matrix at hpe.com/info/ossupport
*** Capacity and Speed of Memory is highly dependent on version#, number of slots occupied and processor selected. See Memory Population Tables in individual Compute QuickSpecs for details.
**** Intel Xeon Scalable Family 100 Series (s1##aa) Bronze, Silver, Gold and Platinum shelves.
***** Intel Xeon Scalable Family 200 Series (s2##aa) Bronze, Silver, Gold and Platinum shelves.

HPE storage blades

HPE D2500sb Storage Blade

Processors supported	N/A
Drives supported	Up to 12 hot plug SFF SAS or SATA HDDs or SAS/SATA SSDs
Maximum capacity	12 drives per storage blade and up to 8 storage blades in an enclosure provides an additional 368.64 TB maximum capacity to the HPE ProLiant BL460c Gen10 server blades
RAID support	RAID 0, 1, 5, 6, 10, 50, 60, 1 Advanced Data Mirroring (ADM), and 10 ADM
Form factor	Half-height, single-wide storage blade
Warranty—year(s) (parts/labor/on-site)	3/0/0 with warranty upgrade options

Enclosures

HPE BladeSystem c3000 Platinum Enclosure

HPE BladeSystem c7000 Platinum Enclosure

Device bays	Up to 8 half-height blades up to 4 full-height blades Mixed configurations supported	Up to 16 half-height, up to 8 full-height blades Mixed configurations supported
Interconnect bays	4 Interconnect bays. Interconnect bays with support for any I/O fabric	8 Interconnect bays with support for any I/O fabric
Power	Choice of up to 6 hot plug power supply kits: Single-phase VAC up to 1200W each or -48 VDC up to 1200W each	Choice of up to 6 hot plug power supply kits: Single-phase or three-phase VAC up to 2650W each or -48 VDC up to 2650W each
Cooling	Cooling Centralized redundant fans up to 6 Active Cool fans	Centralized redundant fans up to 10 Active Cool fans
Management/ Appliances	Single Onboard Administrator—LAN and serial access, Redundant Onboard Administrator—LAN and serial access, optional HPE OneView	Single Onboard Administrator—LAN and serial access, Redundant Onboard Administrator—LAN and serial access, optional HPE OneView
Height	Rack Height (6U)	Rack Height (10U)

HPE APOLLO SYSTEMS

HPE Apollo 35, sx40, 70



	HPE Apollo 35	HPE Apollo sx40	HPE Apollo 70
Maximum number	Up to 4 servers in 2U	1U dual socket server	Up to 4 HPE AR44z 1U servers in 2U Up to 2 HPE AR64z 2U servers in 2U
Processor	Dual AMD EPYC 7000 series processors 16–32 cores 2.0–2.3 GHz base clock speed 155W–180W TDP	Dual Intel Xeon Scalable Family processors 6–22 cores 2.0–3.4 GHz base clock speed 65–135W TDP	Marvell Thunder X2 processor 28 or 32 cores 2.0 or 2.2 GHz base clock speed 165W or 180W TDP
Cache	64 MB L3 cache	13.75 MB–30.25 MB L3 cache	32 KB L1 I/D cache 256 KB L2 per core 32 MB distributed L3 cache (1 MB per core)
Memory	DDR4 2666 MT/s, up to 1 TB	DDR4 2666 MT/s, up to 1.5 TB	DDR4 2666 MT/s (2560 MT/s max.), up to 512 GB per node
Network module	2 x 10 Gb Ethernet NIC, Serial RJ-45 connector 2 Dedicated IPMI LAN port	2 x 10 Gb Ethernet NIC, Serial RJ-45 connector 1 Dedicated IPMI LAN port	Single port Mellanox CX-5 100 Gb/s VPI Adapter (IB or Ethernet) Dual port SFP+ 10GbE Mellanox CX4 LOM Single port RJ-45 1GbE NIC—Mgmt. only
PCIe 3.0 slots	2 low profile HH/HL PCIe 3.0 x 16	2 full-height PCIe 3.0 x 16	2 PCIe 3.0 x 16
Operating systems and virtualization SW†	Red Hat Enterprise Linux (RHEL 7.4) SUSE Linux Enterprise Server (SLES 12 SP3 and SLES 12 SP3 KVM)	Red Hat Enterprise Linux (RHEL 7.3) SUSE Linux Enterprise Server (SLES 12 SP2 and SLES 12 SP2 KVM)	SUSE Linux Enterprise Server (SLES) Red Hat Enterprise Linux (RHEL)
Storage	Internal storage up to 6 SFF drives per server, 24 SFF SATA drives total	Internal storage up to 2 SFF hot-swap SATA drives	Internal storage up to 8 LFF SATA hot plug drives with 1U HPE AR44z servers Internal storage up to 4 LFF hot plug drives with 2U HPE AR64z servers 2 internal 2280 M.2 per node
Storage controller	Integrated SATA controller	Integrated SATA controller	Integrated SATA controller
Supported accelerators	None	Up to 4 NVIDIA V100 or P100 GPUs	None
Management	HPE Performance Cluster Manager	Unified Extensible Firmware Interface (UEFI)	HPE Performance Cluster Manager
Chassis (series)	HPE Apollo 35 Series	HPE Apollo sx40 Server	HPE Apollo 70 Series
Warranty	WW: 3-year Parts/3-year Labor/3-year on-site support with next business day response, except India	WW: 3-year Parts/3-year Labor/3-year on-site support with next business day response	WW: 3-year Parts/3-year Labor/3-year on-site support with next business day response

† For more information on HPE's certified and supported ProLiant servers for OS and Virtualization software and latest listing of software drivers available for your server, please visit our Support Matrix at hpe.com/info/ossupport.

HPE Apollo 2000 System

New

HPE ProLiant Apollo servers and options


	HPE ProLiant Apollo XL170r: Gen10 1U node	HPE ProLiant Apollo XL190r: Gen10 2U node
Maximum number	1U half width—Up to four per chassis	2U half width—Up to two per chassis
Processor	Dual second generation Intel Xeon Scalable processors Bronze-Platinum; 4–28 cores processors, 1.9 GHz–3.8 GHz CPU speed, 70–205 watts	Dual second generation Intel Xeon Processors Bronze-Platinum; 4–28 cores processors, 1.9 GHz–3.8 GHz CPU speed, 70–205 watts
Cache	Up to 30.25 MB L3	Up to 30.25 MB L3
Memory	Up to 2933 MT/s; up to 1.5 TB; 2933 MT/s, up to 2 TB	Up to 2933 MT/s; up to 1.5 TB; 2933 MT/s, up to 2 TB
Network module	Embedded dual 10 Gb NIC w/ Flexible Interface (2 x 10GbE or 2 x 1GbE); Optional FlexibleLOM or Standup networking cards, SUV connector	Embedded dual 10 Gb NIC w/ Flexible Interface (2 x 10GbE or 2 x 1GbE); Optional FlexibleLOM or Standup networking cards, SUV connector
PCIe 3.0 slots	Two externally accessible I/O options that allow you to choose how the PCIe lanes are utilized to deliver balanced workload performance	Choice of up to (4) PCIe 3.0 slots or (3) PCIe 3.0 + 1 FlexibleLOM
Operating systems and virtualization SW†	Windows Server 2012 R2 (Most Recent Version) Windows Server 2016 (Most Recent Version) VMware ESXi™ 6.0 U3 VMware ESXi 6.5 and U1 upon release Red Hat Enterprise Linux (RHEL) 6.9, 7.3 SUSE Linux Enterprise Server (SLES) 11 SP4, 12 SP2 CentOS (Note: CentOS is community supported)	Windows Server 2012 R2 (Most Recent Version) Windows Server 2016 (Most Recent Version) VMware ESXi 6.0 U3 VMware ESXi 6.5 and U1 upon release Red Hat Enterprise Linux (RHEL) 6.9, 7.3 SUSE Linux Enterprise Server (SLES) 11 SP4, 12 SP2 CentOS (Note: CentOS is community supported)
Storage	Data drives per chassis: Up to 12 LFF SAS/SATA, or up to 24 SFF SAS/SATA, or up to 16 SFF SAS/SATA + 8 SFF NVMe, or up to 16 SFF NVMe. Optional 2 internal 2280 M.2 kits per server	Data drives per chassis: Up to 12 LFF SAS/SATA, or up to 24 SFF SAS/SATA, or up to 16 SFF SAS/SATA + 8 SFF NVMe, or up to 16 SFF NVMe. Optional 2 internal 2280 M.2 kits per server
Storage controller	(1) HPE Smart Array S100i; HPE Smart Array S100i SR; optional HPE Smart Array PCIe card	(1) HPE Smart Array S100i; HPE Smart Array S100i SR; optional HPE Smart Array PCIe card
Supported accelerators	N/A	Up to two GPUs per server
Management	HPE iLO HPE Apollo Platform Manager	HPE iLO HPE Apollo Platform Manager
Chassis (series)	HPE Apollo r2000 Series Chassis	HPE Apollo r2000 Series Chassis
Warranty	APJ—3/3/3 AMS/EMEA—1/1/1	APJ—3/3/3 AMS/EMEA—1/1/1

HPE Apollo 4200 Gen9 and Gen10 servers


	HPE Apollo 4200 Gen9 Server	HPE Apollo 4200 Gen10 Server
Form factor	2U rack server	2U rack server
Storage type	Front: Up to 24 LFF or 48 SFF in the two front HDD Cages Optional Rear HDD Cages: 4 LFF, 2 SFF + 2 HHHL PCIe	Front: Up to 24 LFF or 48 SFF in the two front HDD Cages Optional Rear HDD Cages: 4 LFF, 2 SFF + 2 HHHL PCIe (supports [2] uFF Dual M.2), or 6 NVMe Optional M.2 kits
Storage capacity	Up to 392 TB (24 + 4 LFF 14 TB HDD) Up to 7.8 PB per 42U rack (20 servers 14 TB HDD)	Up to 392 TB (24 + 4 LFF 14 TB HDD) Up to 7.8 PB per 42U rack (20 servers 14 TB HDD)
Storage controller	Flexible Smart Array P840ar and Dynamic Smart Array B140i Plus optional HPE Flexible Smart Array or Smart HBA controller	(1) HPE Smart Array S100i; optional HPE Smart Array cards; Up to 3 HPE Smart Array Gen10 Controllers
Processor family	Intel Xeon E5-2600 v3 or v4 series	Intel Xeon Scalable processors (8100, 6100/6200, 5100/5200, and 4100/4200 series)
Processor number	One or two per server	One or two per server
Processor cores available	4/6/8/10/12/14/16/18/20/22	Up to 28 cores/165W
Memory	1024 GB (16 DIMM slots)	Supports up to 2933 MT/s DDR4 SmartMemory 1 TB max. with 64 GB LRDIMM @ 2933 MT/s, 16 DIMM slots
Networking	2 x 1 Gb Ethernet Plus FlexibleLOM and PCIe options	Embedded dual 1 Gb NIC PCIe Standup ([1] 16x PCIe Gen3 slots from each processor)
Expansion slots	Up to 5 Low Profile PCIe slots or up to 6 PCIe slots with optional 2 SFF + 2 FHHL PCIe riser	Up to 5 Low Profile PCIe Slots or up to 6 slots including 2 FHHL PCIe from riser support (extended from Slot 2) with 2 processors
Operating systems and virtualization SW†	Microsoft Windows Server, Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), and VMware	Microsoft Windows Server, Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), and VMware
Recommended for Management at scale	HPE iLO Management Engine (iLO 4) HPE iLO Advanced (optional)	HPE iLO 5 Management (standard), (2) iLO dedicated management ports; Intelligent Provisioning (standard), UEFI, iLO Advanced (optional), HPE OneView Advanced (optional)
Chassis (series)	HPE Apollo 4200	HPE Apollo 4200
Systems fans features	Up to 10 fans with optional redundant fan kit (for redundancy)	Up to 10 fans with optional redundant fan kit (for redundancy)
Power supply type	Up to two power supplies, 800W and 1400W Flex Slot, hot plug redundant power	(2) HPE 800W or 1600W, Flex Slot Power Supplies (AC/DC/277 VAC)
Warranty	3/1/1	3/3/3
QuickSpecs URL	hpe.com/h20195/v2/GetHtml.aspx?docname=c04616495	

HPE Apollo 4500 systems

HPE Apollo 4510 Gen10 System

	HPE Apollo 4510 Gen10 System
Form factor	4U shared infrastructure chassis
Server	1 server per chassis
Storage type	(60) LFF in front (2) driver drawers, side loaded (2) SFF SAS/SATA/NVMe/SSD or (2) uFF Dual M.2 Optional (2) M.2 supported by the riser inside the node
Storage capacity	Up to 840 TB per server (60 servers 14 TB HDD) Over 9 PB in 42U rack (10 servers 14 TB HDD)
Storage controller	(1) HPE Smart Array S100i: optional HPE Smart Array cards
Processor family	(1) HPE Smart Array S100i: optional HPE Smart Array cards
Processor number	One or two per server
Processor cores available	Up to 26 cores 150W
Memory	Supports up to 2933 MT/s DDR4 SmartMemory 1 TB max. with 64 GB LRDIMM @ 2933 MT/s, 16 DIMM slots
Networking	2 x 1GbE embedded + Choice of FlexibleLOM + Standup
Expansion slots	Up to (1) LP PCIe slot and (2) FHHL PCIe slots Two riser options: Up to 1 x16 Low Profile PCIe Slots and 2 x16 FHHL PCIe with 2 processors
Operating systems and virtualization SW†	Microsoft Windows Server, Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), and VMware
Management Recommended for Management at scale	HPE iLO 5 2 GB NAND 512 MB Active Health System tracking Dedicated iLO management ports iLO USB port Optional OneView, CMU, and APM support
Chassis (series)	HPE Apollo 4510 Chassis
Systems fans features	Hot plug rear serviceable N + 1 redundant dual fan modules
Power supply type	(4) HPE 800W or 1600W, Flex Slot Power Supplies (AC/DC/277 VAC) HPE Apollo Platform Manager option for rack level management
Warranty	3/3/3
QuickSpecs URL	hpe.com/h20195/v2/GetDocument.aspx?docname=c04616500

HPE APOLLO SYSTEMS

HPE Apollo 6000 System

New

HPE ProLiant XL230k Gen10 Server

Form factor	12U form factor supporting 24 front-accessible nodes
Processor family	Intel Xeon Scalable processors (up to 205 watts)
Cores	4–28 cores
Chipset	Intel C622 Chipset
Number of processors	2
Max. processor speed	3.9 GHz (4.10 GHz max. turbo)
Cache	Up to 35.75 MB
Drive description	Four SFF drives (SATA, SAS, or NVMe)
Supported drives	Hot plug 2.5-inch SAS/SATA/NVMe SSD
Memory slots	16 DIMM slots
Memory max.	Up to 1.5 TB, support for up to 2666 MHz; up to 2 TB, support for up to 2933 MT/s
Memory type, ECC	DDR4; RDIMM/LRDIMM; 2933 MHz
Network options	Integrated 10 Gb Ethernet, EDR, and Omni-Path fabric options
Storage controller	Embedded chipset SATA (s114i), Optional Smart Array controller options
Expansion slots	2x EDR or OPA mezzanines PCIe Slot options: 1x external x16 Low Profile 1x internal/1x external x8 Low Profile PCIe
Accelerators	N/A
USB ports/SD	1 internal USB 3.0 and 2 external USB 2.0 via SUV
Management	HPE iLO 5; Optional: Apollo Platform Manager
Chassis (series)	HPE Apollo k6000 Chassis
Operating systems and virtualization SW†	Microsoft Windows Server, Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), VMware, and CentOS (community supported)
Warranty	3/3/3 WW

† For more information on HPE's certified and supported ProLiant servers for OS and Virtualization software and latest listing of software drivers available for your server, please visit our Support Matrix at hpe.com/info/ossupport.

HPE Apollo 6500 System

New

HPE ProLiant XL270d Gen10 Server

Form factor	Standard rack mount 4U, can fit into standard 1075 mm rack
Processor family	Intel Xeon Scalable 8100 series, Intel Xeon Scalable 8200 series, Intel Xeon Scalable 6100 series, Intel Xeon Scalable 6200 series, Intel Xeon Scalable 5100 Series, and Intel Xeon Scalable processors
Cores	Up to 28 cores per processer
Chipset	Intel C621 Chipset
Number of processors	Up to 2
Max. processor speed	Up to 3.5 GHz
L3 Cache	Up to 38.50 MB
Supported drives	Hot plug SFF SAS SSD, hot plug SFF SATA SSD, hot plug SFF NVMe SSD, hot plug SFF HDD
Memory slots	24 DIMM slots, HPE DDR4 SmartMemory
Memory max.	Maximum capacity (LRDIMM) 3.0 TB 24 x 128 GB LRDIMM @ 2666 MHz
Memory type	Maximum capacity (RDIMM) 768 GB 24 x 32 GB RDIMM @ 2666 MHz
Network options	Embedded Ethernet adapter with 4-ports and/or optional HPE FlexibleLOM and PCIe adapters for high-speed networking. Additionally, 4 x16 PCIe Gen3 on GPU module for high-speed fabrics such as InfiniBand and Intel Omni-Path Architecture.
Storage controller	Embedded AHCI controller for SATA or M.2
Expansion slots	4 x16 PCIe Gen3 slots from GPU Module for high-speed fabrics, and 1 x16 PCIe Gen3 FHHL slot on Motherboard
Accelerators	Up to 8 HPE NVIDIA Tesla V100 PCIe 32 GB Computational Accelerators
USB ports/SD	USB connectors 3.0 (2)
Management	HPE iLO Advanced HPE iLO Advanced Premium Security Edition HPE Performance Cluster Manager
Chassis (series)	2 HPE 2200W Platinum hot plug Power Supply HPE XL270d Gen10 Rail Kit
OS and virtualization software	Operating Systems and Virtualization Software Support for ProLiant Servers Red Hat Enterprise Linux (RHEL) (64 bit) (includes KVM)—7.3 w/ Errata 3.10.0–514.6.1, 7.4 SUSE Linux Enterprise Server (SLES): 12 SP3, 15 (64 bit, includes KVM) Canonical Ubuntu 16.04.3—HWE kernel 4.10 CentOS 7.4 Windows Server 2016 (Most recent version)
Warranty	3/3/3—Server Warranty includes three years of parts, three years of labor, three years of on-site support coverage

HPE SGI 8600 SYSTEM

HPE XA730i Gen10 Server

HPE XA780i Gen10 Server

HPE XA760i Server

	HPE XA730i Gen10 Server	HPE XA780i Gen10 Server	HPE XA760i Server
Form factor	HPE XA730i is a single-slot tray for the HPE SGI 8600 compute enclosure assembly	HPE XA780i is a single-slot tray for the HPE SGI 8600 compute enclosure assembly	HPE XA760i is a single-slot tray for the HPE SGI 8600 compute enclosure assembly
Processors	Intel Xeon Processor Scalable Family (support for full SKU stack)	Intel Xeon Processor Scalable Family	Intel Xeon Phi Processor
Compute nodes	Tray four 2-socket CPU nodes	Tray one 2-socket CPU node	Tray four 1-socket CPU nodes
Memory/Node	Up to 1536 GB per node, 12 DIMM slots (6 per CPU socket) per node	Up to 1536 GB per node, 14 DIMM slots (8 per CPU socket) per node	Up to 1536 GB per node, 12 DIMM slots (6 per CPU socket) per node
Memory technology	8, 16, 32, 64, and 128 GB DDR4 2666 MT/s ECC Registered DIMMs	8, 16, 32, 64, and 128 GB DDR4 2666 MT/s ECC Registered DIMMs	8, 16, 32, 64, and 128 GB DDR4 2400 MT/s ECC Registered DIMMs
GPU options	N/A	Up to 4 NVIDIA Tesla for SXM2 GPUs with NVLink	N/A
Extension space options (per node)	Up to (2) 2.5" SATA HDD/SSD (1) HDD/SSD and (1) x16 low profile PCIe slot	Up to 4 SSD per node	Up to (2) 2.5" SATA HDD/SSD
Fabric options (via Mezzanine Card) (per node)	Single or dual port Mellanox Connect-IB (FDR) Single or dual port Mellanox ConnectX-5 (EDR) Single or dual port Intel Omni-Path	Up to 4 high-speed connections per node (Mellanox Connect-IB [FDR], Mellanox ConnectX-5 [EDR], or Intel Omni-Path)	Single or dual port Mellanox Connect-IB (FDR) Single or dual port Mellanox ConnectX-5 (EDR) Single or dual port Intel Omni-Path

HPE MOONSHOT SYSTEMS AND EDGELINE CONVERGED EDGE SYSTEMS

HPE Moonshot 1500

Chassis size	4.3U; 18.96 x 44.33 x 89.97 cm, holds up to olds up to forty-five (45) ProLiant Server Blades. Switches, uplinks, power supplies, fans, and a chassis management module are all designed to fit into the HPE Moonshot 1500 System.		
Compute nodes			
	ProLiant m700p Blade	**ProLiant m710x Server Blade**	**ProLiant m510 Server Blade**
SoC	4 processors x AMD Opteron X2170 APU, 2.4 GHz, (4) x86 cores	Intel Xeon E3-1585L v5 "Skylake-H" (3.0 GHz base, 3.7 GHz/all-core turbo) 8 MB shared level 3 Cache and 128 MB L4 cache (eDRAM)	Intel Xeon D "Broadwell-DE" D-1584, 8-Core, 2.0 GHz base, 2.3 GHz all-core turbo D-1587, 16-Core, 1.7 GHz base, 2.1 GHz all-core turbo 12 MB L3 Cache
GPU	Integrated GPU with AMD Radeon HD 8000 Series Graphics Base Frequency: 655 MHz Boost Frequency: 800 MHz	Integrated Intel Iris Pro P580 GT4e GPU with 72 execution unit iLO 4 Remote Console	iLO 4 Remote Console
Network controller	Broadcom BCM5720 Ethernet Controller	Mellanox ConnectX-3 Pro, Dual 10GbE NIC with RoCE	Mellanox ConnectX-3 Pro, Dual 10GbE NIC, supports RoCE
Memory	SDRAM DDR3 PC3-12800 (1600 MHz), four (4) SODIMM 32 or 64 GB (8 or 16 GB per SoC)	(4) DDR4 ECC SODIMMs (2133/2400 MHz) (8 GB, 16 GB) Maximum Configuration 64 GB (4 x 16 GB)	(4) DDR4 ECC RDIMMs (2133/2400 MHz) (8 GB, 16 GB, 32 GB) Maximum Configuration 128 GB (4 x 32 GB)
Onboard storage	64 GB, 120 GB, or 240 GB M.2 industrial grade SSD Maximum internal storage: 960 GB (1 x 240 GB per SoC)	Five (5) M.2 Modules (1)—SATA M.2 (2242)—120 GB or 240 GB (4)—NVMe M.2 (2280): up to 2 TB each, 8 TB maximum	Three (3) M.2 Modules (1)—SATA M.2 (2242)—64 GB, 120 GB (2)—x4 NVMe M.2 (2280): up to 1 TB each—2 TB total
Eternal storage	iSCSI with iSER acceleration		
Workload	Hosted Desktop Infrastructure	Workspace Application Delivery, Video Transcoding, Big Data Analytics	All Purpose Compute Workhorse: Video Streaming, Big Data Analytics, Media Processing, and more!
Server blade management	Moonshot iLO chassis manager	HPE iLO 4 (Remote Console with vKVM and vMedia) HPE Trusted Platform Module (TPM) embedded	HPE iLO 4 (Remote Console with vKVM and vMedia) HPE Trusted Platform Module (TPM) embedded
Server blade power	Maximum: 90W	Maximum: 90W	Typical: 90W
Compatible OS	Windows 7/8.1/10	Windows 7/8.1/10, Windows Server 2012/2012 R2/2016 RHEL/CentOS, Ubuntu, SLES Hyper-V, XenServer, RHEL KVM, KVM, VMware ESXi	Ubuntu 15.04, Ubuntu 14.04.3 LTS, RHEL/CentOS 6.7/7.2, SLES 12, Windows Server 2012/2012 R2 VMware ESXi 6.0
Chassis networking	Comware Switches: Moonshot-45Gc Switch, Moonshot-45XGc Switch, Moonshot-180XGc Switch		
Switches			
Moonshot-45G Switch Module	N/A	45 port—1 GB switch for Moonshot 1500, Fast Path Firmware, supports single only single node blades—m510 and m710x	
Moonshot-45XGc Switch Module	N/A	45 port—10 GB switch for Moonshot 1500, 10 GB blades can run on 10 GB or 1 GB, and 1 GB blades will run at 1 GB only, Comware 7 firmware	
Moonshot-180XGc Switch Module	m700p blades will run on 1 GB, for 10 blades 710x or m510 the networking bandwidth can be set to 10 GB, Comware 7 firmware, supports all blades		
Uplinks			
Moonshot-6SFP Uplink Module	Use up to two 4-port HPE Moonshot-4QSFP+ Uplink Modules with four 40GbE QSFP+ ports. Each uplink module delivers 160GbE of aggregate bandwidth to connect the HPE Moonshot System to an external network. Supports Moonshot-45Gc Switch		
Moonshot-4QSFP+ Uplink Module	The 45XGc Switch Module is a performance 45 port—10 Gb switch for the Moonshot 1500 chassis. 10 Gb blades can run at 1 Gb or 10 Gb and 1 Gb blades will run at 1 Gb. This switch uses Comware 7 firmware. Supports Moonshot-180XGc Switch		
Moonshot-16SFP+ Uplink Module	Use up to two 16-port HPE Moonshot-16SFP+ Uplink Modules with sixteen 10GbE SFP+ ports. Each uplink module delivers 160GbE of aggregate bandwidth to connect the HPE Moonshot system to an external network. Supports Moonshot-180XGc Switch		
Chassis management	iLO Chassis Management, supports the HPE RESTful Interface Tool		
Chassis power	1500W redundant power supply		
Chassis warranty	Chassis Warranty includes 3-Year Parts, 3-Year Labor, 3-Year On-site support		

HPE Edgeline

New

	HPE Edgeline EL300 Converged Edge System	HPE Edgeline EL1000 Converged Edge System	HPE Edgeline EL4000 Converged Edge System
Environmental	• Operating temp: -30 to 70°C • Shock and Vibration tested • Passively cooled. IP50 rated • MIL-STD-810G	• Operating temp: 0 to 55°C • Shock and Vibration tested • NEBS Level 3	• Operating temp: 0 to 55°C • Shock and Vibration tested • MIL-STD-810G • NEBS Level 33
Compute	• One Intel Core i5 • Up to 4 x86 cores per system • VPU Option for vision processing	• One HPE m510 (Intel Xeon D "Broadwell-DE" 8C/16C) or m710x (Intel Xeon E3-1585L v5 "Skylake-H" + workstation GPU) compute blade • Up to 16 Xeon cores per system • Hot-swappable • VPU Option for vision processing • Additional GPU options form NVIDIA and AMD	• Four HPE m510 (Intel Xeon D "Broadwell-DE" 8C/16C) or m710x (Intel Xeon E3 4C + workstation GPU) compute blades • Up to 64 Xeon cores per system • Mix-and-match, hot-swappable • VPU Option for vision processing • Additional GPU options from NVIDIA and AMD
Memory	Up to 32 GB per system	Up to 128 GB per system	Up to 512 GB per system (across four compute blades)
Storage	Up to 3 TB using M.2 SSDs	• Up to 16 TB on compute blades and extended storage adapters • Up to 22 TB using two SFF drives	Up to 48 TB on four compute blades and four extended storage adapters
Networking	Up to six 1GbE ports, with Time Sensitive Network (TSN)	Up to two 10GbE ports with RDMA over Converged Ethernet (RoCE)	Up to eight 10GbE ports with RDMA over Converged Ethernet (RoCE), and optional 25 Gb, 100 Gb Ethernet NICs
Converged OT and other I/O interfaces	• HPE Edgeline OT Link • One daughter card option supporting CAN bus, GbE TSN, GPIO or Modbus etc., for Converged OT • Two M.2 slots, each with a SIM slot for Wi-Fi, BT and LTE connectivity	• HPE Edgeline OT Link • Two full-height half-length (FHHL) PCIe cards or PXI/PXIe modules for Converged OT • Two mini-PCIe slots, each with a SIM slot Wi-Fi, BT and LTE connectivity	• HPE Edgeline OT Link • Four full-height half-length (FHHL) PCIe cards or PXIe modules for Converged OT
Security	Silicon Root of Trust Trusted Platform Module (TPM)	Trusted Platform Module (TPM)	Trusted Platform Module (TPM)
Systems management	• HPE Edgeline iSM, EIM • Redfish, CLI, WebGUI	• HPE iLO 4, EIM • Redfish, CLI, WebGUI	• HPE iLO 4, EIM • Redfish, CLI, WebGUI
Power	Typical: 30W AC (with external AC power supply) and DC input options	Typical: 100–150W, AC and DC input options	Typical: 400–600W, AC and DC input options

HPE MISSION CRITICAL SOLUTIONS

HPE Mission Critical x86 Servers

	HPE Superdome Flex		HPE Integrity Superdome X	HPE Integrity MC990 X
Processors supported	Intel Xeon Scalable processors family—1st Generation Gold and Platinum	Intel Xeon Scalable processors family—2nd Generation—Gold and Platinum	Intel Xeon E7 v3, v4 4–24 cores 2.1–3.2 GHz	Intel Xeon E7 v4 Processors
Number of processors	Four Intel Xeon Scalable Platinum or Gold processors per chassis, 1–8 chassis, 4–32 processors single system		2–16 Intel Xeon E7 v4 Processors	Four Intel Xeon E7 v4 Processors per chassis, 1–8 chassis, 4–32 processors single system
Maximum number of cores	896 (Max. 112 per 4-socket chassis)		384 cores	768 (Max. 96 per 4-socket chassis)
Scalable processor chipset	HPE Superdome Flex ASIC		sx3000	HPE HARP ASIC
Operating system supported	Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Oracle Linux, Oracle VM, VMware, Microsoft Windows Server		Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES), Windows, VMware	Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Oracle Linux, VMware
Maximum memory	48 TB shared memory (Max. 6 TB per 4-socket chassis)		48 TB shared memory	48 TB shared memory (Max. 6 TB per 4-socket chassis)
Memory speed	DDR4 @ 2666 MT/s	DDR4 @ 2933 MT/s	DDR4 @ 2133/2400 MT/s	DDR4 @ 2400 MT/s
Persistent memory	N/A	HPE DC Persistent Memory (128, 256, and 512 GB)	N/A	N/A
I/O slots	128 max. (16 or 12 LP PCIe I/O slots per 4-socket chassis)		16x dual port FlexLOMs 24x PCIe 3.0 mezzanine slots	Up to 92 PCIe 3.0
Internal hard disk drives	Per 4-socket chassis: 4x HDD/SSD bays and 1x DVD-R/DVD-RW bay		N/A	Up to 34
Hard partitions (nPars)	Multiple 4, 8, 12, or 16-socket electrically isolated HPE nPartitions (HPE nPars) supported per rack		1–8	Not supported
Management	Rack Management Controller (RMC), Redfish API, HPE OneView		Superdome Onboard Administrator (OA)	Rack management controller (RMC)
Rack height (EIA unit)	Multiple size racks supported depending on configuration. Refer to QuickSpecs for details. 5U per 4-socket Base or Expansion Chassis		18U enclosure	5U per 4-socket Base or Expansion Chassis

For more information on HPE's Mission Critical x86 servers, please visit: hpe.com/superdome

HPE Integrity Servers with HP-UX

	HPE Integrity BL860c i6 blade	HPE Integrity BL870c i6 blade	HPE Integrity BL890c i6 blade	HPE Integrity rx2800 i6 blade	Superdome 2–8s	Superdome 2–16s	Superdome 2–32s
Processors supported	Intel Itanium® 9700 (i6)	Intel Itanium 9700 (i6)	Intel Itanium 9700 (i6)	Intel Itanium 9700 (i6)	Intel Itanium 9760 (i6) Intel Itanium 9740 (i6) Intel Itanium 9560 (i4) Intel Itanium 9540 (i4)	Intel Itanium 9760 (i6) Intel Itanium 9740 (i6) Intel Itanium 9560 (i4) Intel Itanium 9540 (i4)	Intel Itanium 9760 (i6) Intel Itanium 9740 (i6) Intel Itanium 9560 (i4) Intel Itanium 9540 (i4)
Number of processors	1–2	2–4 processors	4–8 processors	1–2 processors	2–16	2–16	2–32
Maximum number of cores	16 cores	32 cores	64 cores	16 cores	128 (64 max. per nPar)	128	256
Scalable processor chipset	N/A	N/A	N/A	Intel 7500 IOH	sx3000	sx3000	sx3000
Operating system supported	HP-UX 11i v3, VSI OpenVMS V8.4–2L1	HP-UX 11i v3, VSI OpenVMS V8.4–2L1	HP-UX 11i v3, VSI OpenVMS V8.4–2L1	HP-UX 11i v3, VSI OpenVMS V8.4–2L1	HP-UX 11i v3††	HP-UX 11i v3††	HP-UX 11i v3††
Maximum memory	384 GB (2.4 TB Maximum Internal Storage)	768 GB (4.8 TB Maximum Internal Storage)	1.5 TB (9.6 TB Maximum Internal Storage)	384 GB	4 TB DDR3 (256 x 16 GB)	4 TB DDR3 (256 x 16 GB)	8 TB DDR3 (512 x 16 GB)
Memory speed	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Persistent memory	N/A	N/A	N/A	N/A	N/A	N/A	N/A
I/O slots	3 mezzanine slots	6 mezzanine slots	12 mezzanine slots	6 Gen2 PCIe	48 external PCIe x8 Gen2	96 external PCIe x8 Gen2	96 external PCIe x8 Gen2
Internal hard disk drives	2 SFF hot plug SAS	4 SFF hot plug SAS	8 SFF hot plug SAS	Up to 8	N/A	N/A	N/A
Hard partitions (nPars)	Supported	Supported	Supported	N/A	1–8	1–8	1–16
Management	HPE Insight Online, HPE Systems Insight Manager, HPE Integrity iLO 3	HPE Insight Online, HPE Systems Insight Manager, HPE Integrity iLO 3	HPE Insight Online, HPE Systems Insight Manager, HPE Integrity iLO 3	HPE Systems Insight Manager, HPE Integrity iLO 3	Superdome Onboard Administrator (OA), HPE Systems Insight Manager	Superdome Onboard Administrator (OA), HPE Systems Insight Manager	Superdome Onboard Administrator (OA), HPE Systems Insight Manager
Rack height (EIA unit)	Full-height server blade; 8 per 10U enclosure; 4 per 6U enclosure	Double width, full-height server blade; 4 per 10U enclosure; 2 per 6U enclosure	Quad width, full-height server blade; 2 per 10U enclosure; 1 per 6U enclosure	2U	18U enclosure; 4U I/O expansion enclosure; standard rack door	1 x 18U enclosures; 4U I/O expansion enclosure; door active display	2 x 18U enclosures; 4U I/O expansion enclosure; door active display

For more information on HPE's Mission Critical Integrity servers, please refer hpe.com/info/integrity

†† HP-UX 11i v3 2017 update required for i6 server

HPE NonStop systems

Ultra-robust systems that deliver 24x7 continuous availability, unrivaled data integrity, and the capacity to handle the most-demanding processing-intensive workloads.

NonStop X Powered by Intel Xeon Gold and Silver Series processors (Gen10)

NonStop i powered by Intel Itanium processors 9500 series

	HPE NonStop X NS3 X3 systems Expandable, cost-effective system based on the x86 architecture with InfiniBand as the system interconnect for small to midsize enterprises	HPE NonStop X NS7 X3 system Virtually unlimited scalability with high-level performance based on the x86 architecture with InfiniBand as the system interconnect	HPE Integrity NonStop i NS2300 system Entry-class, cost-effective commercial system for small businesses and emerging markets	HPE Integrity NonStop i NS2400 system Excellent price-performance solution for small to midsize enterprises	HPE Integrity NonStop i BladeSystem NB56000c system Virtually unlimited scalability with high-level performance for enterprise workloads
Processor Supported	Intel Xeon Silver 4100 series processors	Intel Xeon Gold 6100 series processors	Intel Itanium 9500 series processor	Intel Itanium 9500 series processor	Intel Itanium 9500 series processor
NonStop CPUs per system	Minimum: 2 Maximum: 4	Minimum: 2 Maximum: 16	Minimum: 2 Maximum: 4	Minimum: 2 Maximum: 4	Minimum: 2 Maximum: 16
Software licensing	1 or 2-core software licensing	2, 4, or 6-core software licensing	1-core fixed software license	2-core fixed software license	2 or 4-core software licensing
RAM	Per CPU: • Minimum 32 GB • Maximum 64 GB Per system: • Maximum 256 GB	Per CPU: • Minimum 64 GB • Maximum 192 GB Per system: • Maximum 3.0 TB	Per CPU: • Minimum 16 GB • Maximum 48 GB Per system: • Maximum 192 GB	Per CPU: • Minimum 16 GB • Maximum 48 GB Per system: • Maximum 192 GB	Per CPU: • Minimum 16 GB • Maximum 96 GB Per system: • Maximum 1.5 TB
NonStop OS	L-series	L-series	J-series	J-series	J-series
System interconnect	InfiniBand	InfiniBand	ServerNet	ServerNet	ServerNet
Clustering	Expand-over-IP	NonStop X Cluster Solution (NSXCS), Expand-over-IP	Expand-over-IP	Expand-over-IP	Expand-over-IP, NonStop BladeCluster solution
I/O controllers (Maximum number of CLIMs)	8	56	6	6	48
Telco industry hardware choices	-48 VDC, seismic rack	-48 VDC, seismic rack NEBS level 3 certified	N/A	N/A	-48 VDC, seismic rack NEBS level 3 certified

For more information on HPE's Integrity NonStop systems, please refer hpe.com/info/nonstop

HPE NonStop servers for Telco-use

	NS3 DC X2	NS7 CG X2	NB56000c-cg
Number of processors	2–4	2–16	2–16
Maximum number of cores	8	96	64
Processors supported	E5-2600 series processor	E5-2600 series processor	Intel Itanium 9500 series
Maximum memory	256 GB (per node)	3.0 TB (per node)	1,536 GB (per node)
Drives supported	Up to 100	Up to 2,700	Up to 2,208
Maximum internal storage	40 TB	1,000 TB	650 TB
Rack height	Delivered in 36U CG seismic rack(s)	Delivered in 36U CG seismic rack(s)	Delivered in 36U CG seismic rack(s)
Operating systems supported	NonStop OS (L-series)	NonStop OS (L-series)	NonStop OS (J-series)
Blades per enclosure	4	16	8

THE HPE STORAGE FAMILY

HPE delivers an intelligent data platform that predicts and prevent issues across your full IT stack with the ability to learn and self-adjust in real time. Hybrid by design, it makes your data accessible and usable across all cloud environments, turning your data challenges into business opportunities.

The Intelligent Data Platform by HPE is AI-driven, built for the cloud and delivered as a service:

AI-driven: Reduce the burden of managing infrastructure and gain context-awareness of your data throughout its lifecycle.

Built for cloud: Run any workload, anywhere you need it with seamless data mobility and native integration to public cloud.

As a service: Pay-per-use elastic capacity that grows ahead of your business, delivered as a service on-premises.

Explore how your enterprise might take advantage of intelligent storage to meet the dynamic challenges ahead.

- **(New) HPE Primera:** The world's most intelligent storage for mission-critical apps[2] that delivers extreme resiliency and performance with the agility of the cloud. Powered by the intelligence of HPE InfoSight, HPE Primera delivers instant access to data with storage that sets up in minutes, upgrades transparently, and is delivered as a service. Plus, it's backed by a 100% availability guarantee.[3]
- **(New) HPE Nimble Storage dHCI:** HPE Nimble Storage dHCI is an intelligent platform with the flexibility of converged and the simplicity of HCI. Built with HPE ProLiant and HPE Nimble Storage, this platform provides the flexibility to scale compute and storage independently for unpredictable growth and the data resiliency and performance needed for business-critical apps.
  - Hardware consists of HPE Nimble Storage AF and HF platforms, and HPE ProLiant DL360 and DL 380. Please refer to the HPE Nimble Storage and HPE ProLiant sections for more information.
- **HPE MSA Storage:** Flash-enabled arrays that raise the entry storage bar, making application acceleration possible for a wide range of budgets.
- **HPE StoreEasy:** A leading NAS product family under $15K USD, which is an easy-to-manage centralized, space for securely storing documents, images, audio, and video files.
- **HPE Nimble Storage:** HPE Nimble Storage leverages flash storage and predictive analytics to eliminate the gap and guarantee 99.9999% availability, delivering the best all-flash capacity per TB in the industry—and future-proofing design for value today and tomorrow.
- **HPE SimpliVity:** An enterprise-grade hyperconverged platform that speeds application performance, improves efficiency and resiliency, and restores VMs in seconds.
- **HPE 3PAR StoreServ Storage:** Tier 1 all-flash data storage array that can scale from midsize to the largest enterprises and service providers, enabling high service levels and instant application provisioning.
- **HPE XP7:** Designed for applications requiring 100% data availability, the HPE XP7 Storage combines a seven-nines platform (99.99999%) of fully online, scalable, and redundant hardware, with ultra-high-performance, and advanced data replication, and disaster recovery (DR) along with online data migration capabilities.
- **HPE StoreOnce:** Intelligent storage that transforms your hybrid cloud data protection with greater simplicity, performance and agility at lower cost than traditional solutions.
- **HPE StoreEver:** As your business's data continues to grow, trust HPE proven tape solutions to retain your valuable data for longer and for less.
- **HPE StoreFabric:** HPE StoreFabric modernizes your storage network with a broad selection of trusted products focused on performance, SAN automation, and resiliency solutions.

All-Flash and Hybrid Storage

All-flash and hybrid storage with intelligence that makes it smarter and simpler to use.

Data Protection and Archive Storage

Flash storage-integrated, built-for-cloud data protection delivering unparalleled backup, archive, and disaster recovery for your enterprise apps.

File-based Storage

Secure, tailored, and economic solutions to address storage requirements for NAS and file-based storage.

Storage Networking

A superior storage networking experience with a broad selection of trusted HPE StoreFabric products focused on performance, SAN automation, and resiliency solutions.

[2] HPE Storage Substantiation

[3] HPE 100% Availability Guarantee

HPE PRIMERA

New

The HPE Primera 600 series redefines what's possible in mission-critical storage by delivering the agility of the cloud while raising the bar on resiliency and performance. Built upon proven resiliency and powered by HPE InfoSight, HPE Primera delivers instant access to data with storage that sets up in minutes, upgrades transparently, and is delivered as a service.

Hardware summary	 **HPE Primera A630**	 **HPE Primera A650**	 **HPE Primera A670**
Number of Controller Nodes	2	2 or 4	2 or 4
CPUs per node	1	2	2
Maximum Host Ports	16 ports	48 ports	48 ports
16 GB or 32 Gb/s Fibre Channel Host Ports	0–16 ports	0–48 ports	0–48 ports
Built-in 10GbE Ports per node	2	2	2
Max. number of SSDs	144	384	576
Max. Raw Capacity (SSD only)	250 TiB	800 TiB	1600 TiB
Max. number of Add-on Drive Enclosures	5 enclosures (A630)	14 enclosures (A650)	22 enclosures (A670)
Capacity	250 TiB (SSD only)	800 TiB (SSD only)	1600 TiB (SSD only)
Cache	128 GiB	256 GiB	512 GiB/1 TiB
Storage Controller	HPE Primera A630 Controller	HPE Primera A650 Controller	HPE Primera A670 Controller
Minimum dimensions (H x W x D)	HPE Primera 630: 483 x 839 x 87.5 cm (W/D/H)	HPE Primera 650: 483 x 839 x 174 cm (W/D/H)	HPE Primera 670: 483 x 839 x 174 cm (W/D/H)
Weight (weight includes chassis, controllers, and PCBM, no drives or adapters)	HPE Primera 630: 33.6 kg	HPE Primera 650 2N: 47.3 kg HPE Primera 650 4N: 67.3 kg	HPE Primera 670 2N: 47.3 kg HPE Primera 670 4N: 67.3 kg
Product number (SKU)	N9Z46A (2-way Storage Base) N9Z47A (4-way Storage Base)		
Drive description	SAS SFF FIPS Encrypted SSD; SAS SFF SSD;		
Enclosures	HPE Primera 2U24 SFF SAS Drive Enclosure		
Maximum drives per enclosure	HPE Primera 600 2-way Storage Base: 24; HPE Primera 600 4-way Storage Base: 48; HPE Primera 2U24 SFF SAS Drive Enclosure: 24		
Host interface	32 Gb/s Fibre Channel; 16 Gb/s Fibre Channel		
Availability features	Redundant power and cooling modules with battery and fans; A minimum of dual redundant controllers, max. of four controllers for added redundancy; RAID 6 for data protection		
Compatible operating systems	Microsoft Windows Server 2012; Microsoft Windows Server 2012 R2; Microsoft Windows Server 2016; Microsoft Windows Server 2019; Microsoft Windows Hyper-V; HP-UX; SUSE Linux Enterprise Server (SLES); Red Hat Enterprise Linux (RHEL); VMware ESX® and ESXi; Oracle Solaris; Oracle UEK; Oracle Linux; Citrix® XenServer; IBM AIX; HPE OpenVMS; Apple OS X; HPE OpenVMS is a registered release only		
Warranty	3/0/0 (3-year parts only); 5/0/0 (for SSDs)		

HPE MODULAR SMART ARRAY (MSA)

New

HPE MSA 1050 SAN Storage

HPE MSA 2050/2052 SAN Storage

Description	The HPE MSA 1050 SAN Storage brings affordable flash storage down to the most price sensitive customers	The HPE MSA 2050 SAN Storage is a flash ready system designed for affordable application acceleration ideal for small and remote office deployments	The HPE MSA 2052 SAN Storage is a hybrid flash system designed for affordable application acceleration for small and remote office deployments
Capacity	307 TB SFF or 576 TB LFF maximum ray capacity, depending on model	614 TB SFF or 1152 TB LFF, maximum raw capacity, depending on model	
Drive description	96 SFF or 48 LFF maximum including expansion, depending on model	192 SFF SAS/MDL SAS/SSD or 96 LFF SAS/MDL SAS/SSD, maximum including expansion, supported, depending on model	
Host interface	8 Gb Fibre Channel, 4-ports per system or 1 Gb iSCSI, 4-ports per system or 10 Gb iSCSI, 4-ports per system or 12 Gb SAS, 4-ports per system depending on model	16 Gb/8 Gb Fibre Channel 8-ports per system or 1GbE/10GbE iSCSI 8-ports per system or 12 Gb SAS 8-ports per system are supported	
Storage controller	2 HPE MSA 1050 2-port 8 Gb FC Controllers or 2 HPE MSA 1050 2-port 1 Gb iSCSI Controllers or 2 HPE MSA 1050 2-port 10 Gb iSCSI Controllers or 2 HPE MSA 1050 2-port 12 Gb SAS Controllers, depending on model	Two HPE MSA 2050 SAN controllers or two HPE MSA 2050 SAS controllers, supported, depending on model	
Storage expansion options	HPE MSA 2050 SFF Disk Enclosure or HPE MSA 2050 LFF Disk Enclosure	HPE MSA 2050 LFF Disk Enclosure or HPE MSA 2050 SFF Disk Enclosure or the HPE MSA 2050 SAN DC-Power Carrier Grade SFF Disk Enclosure	HPE MSA 2050 LFF Disk Enclosure or HPE MSA 2050 SFF Disk Enclosure
	N/A	Clustering support	
	N/A	Windows, Linux, HP-UX	
SAN backup support	Yes	Yes	
Systems Insight Manager support	Yes	Yes	
Compatible operating systems	Microsoft Window Server 2019, Microsoft Window Server 2016, Microsoft Windows Server 2012, Red Hat Linux, SUSE SLES Linux (2 versions of Linux OS), VMware, HP-UX. Detailed information available at: hpe.com/storage/spock		
Form factor	2U rack height	2U	
Minimum dimensions (H x W x D)	8.9 x 49.5 x 44.7 cm	8.9 x 49.5 x 44.7 cm	
Weight	17.55 kg	18.4 kg	
Warranty	Three-year limited warranty, parts exchange next business day delivery. For more warranty information, refer to h20564.www2.hpe.com/hpsc/wc/public/home.		

HPE SIMPLIVITY

New

HPE SimpliVity 380, based on the HPE ProLiant DL380 Gen10 Servers, is a compact, scalable 2U rack-mounted building block that delivers server, storage, and storage networking services.

The HPE SimpliVity 2600 VDI solution dramatically simplifies IT by combining infrastructure and advanced data services for virtualized workloads into a building block that delivers server, storage, and storage networking services.

HPE SimpliVity 380 Gen10 At-a-Glance

HPE SimpliVity 2600 At-a-Glance

Node/ Chassis size	2U	2U, up to 4 nodes per chassis
Processors	2x Intel Xeon Scalable processors are 8 to 28 cores selectable, 1 or 2 CPU options	2x Intel Xeon Scalable processors 12 to 22 cores selectable, 1 or 2 CPU options
Memory	144 GB to 1536 GB per node selectable	128 GB to 768 GB per node selectable
Storage	Two All Flash Storage Options (4000/6000 Series) and 5 Capacity Points: Extra Small—5 x 960 GB SSD Kit	6 x 1.92 TB SSD Kit (1 kit per node)
	Small—5 x 1.92 TB SSD Kit Medium—9 x 1.92 TB SSD Kit Large—12 x 1.92 TB SSD Kit	
	Extra Large—12 x 3.84 TB SSD Kit (Series 4000 only)	
Network ports	Ethernet 1 Gb LOM embedded, choice of 2 x 10 Gb FLOM	Dual port 1GbE Media Module Adapter dual port 10GbE PCI NIC
Power supplies	Dual power supplies provide highly available power	Dual power supplies provide highly available power
	HPE 800W FS Plat Ht Plg Pwr Supply Kit HPE 800W FS -48 VDC Ht Plg Pwr Supply Kit HPE 800W FS Ti Ht Plg Pwr Supply Kit	HPE 1600W Flex Slot Platinum hot plug LH Power Supply Kit
	HPE 800W FS Universal Ht Plg Pwr Supply Kit HPE 1600W FS Plat Ht Plg LH Pwr Supply Kit	HPE 1800W–2200W Flex Slot Platinum hot plug LH Power Supply Kit
Hardware warranty	Server Warranty includes 3-year Parts, 3-year Labor, 3-year On-site support with next business day response	Server Warranty includes 3-year Parts, 3-year Labor, 3-year On-site support with next business day response
Hardware support	3-year HPE SimpliVity 380 Gen10 solution support (required)	3-year HPE SimpliVity 2600 solution support (required)

HPE NIMBLE STORAGE

New

AF-Series Arrays: HPE Nimble Storage All Flash Arrays combine a flash-efficient architecture with HPE InfoSight predictive analytics to achieve fast, reliable access to data and 99.9999% guaranteed availability.

HF-Series Arrays: The HPE Nimble Storage Adaptive Flash array is a Hybrid Flash array for mixed, primary workloads, where cost-efficient flash performance is important. It is a Secondary Flash array for backup and DR while allowing you to put your backup data to work.

	AF20Q	AF20	AF40	AF60	AF80	Scale-out 4X AF80	HF20	HF20H	HF20C	HF40	HF40C	HF60	HF60C	Scale-out 4X HF60
Raw capacity (TB/TiB)	6–46/5–42	11–46/10–42	11–184/10–167	11–553/10–502	23–1106/21–1005	4423/4023	21–210/19–191	11–211/10–192	21–1260/19–1146	21–504/19–458	21–1260/19–1146	21–1260/19–1146	21–1260/19–1146	5040/4584
Usable capacity (TB/TiB)	3–25/2–23	17–33/15–30	8–136/7–124	8–407/7–370	17–815/15–741	3260/2965	16–169/14–153	7–164/6–149	16–1016/14–924	16–406/14–369	16–1016/14–924	16–1016/14–924	16–1016/14–924	4065/3697
Effective capacity (TB/TiB)	14–128/13–116	82–168/75–153	40–682/36–620	40–2037/36–1853	82–4075/75–3706	16303/14827	81–845/74–768	34–821/31–746	32–2032/29–1848	81–2030/74–1846	32–2030/28–1846	81–5080/74–4621	32–2030/28–1846	326–20324/297–18484
Max. # of expansion shelves	1	1	1	2	2	8	6	6	6	6	6	6	6	24
Flash capacity (TB/TiB)	N/A	N/A	N/A	N/A	N/A	N/A	1.4–28/1.3–25	0.9–28/0.8–25	0.7–28/0.6–25	1.4–60/1.3–54	1.4–60/1.3–54	1.4–156/1.3–142	1.4–156/1.3–142	624/567
RAID level	Triple+ Parity	Triple+ Parity	Triple+ Parity	Triple+ Parity	Triple+ Parity	Triple+ Parity	Triple+ Parity	Triple+ Parity	Triple+ Parity	Triple+ Parity	Triple+ Parity	Triple+ Parity	Triple+ Parity	Triple+ Parity
Onboard iSCSI/Mgmt. 1 Gb/ 10 Gb ports per array	4	4	4	4	4	16	4	4	4	4	4	4	4	16
Optional iSCSI 1 Gb ports per array	4, 8, 12, 16	4, 8, 12, 16	4, 8, 12, 16, 20, 24	4, 8, 12, 16, 20, 24	4, 8, 12, 16, 20, 24	96	4, 8, 12, 16	4, 8, 12, 16	4, 8, 12, 16	4, 8, 12, 16, 20, 24	4, 8, 12, 16, 20, 24	4, 8, 12, 16, 20, 24	4, 8, 12, 16, 20, 24	96
Optional iSCSI 10 Gb ports per array	4, 8, 12, 16	4, 8, 12, 16	4, 8, 12, 16, 20, 24	4, 8, 12, 16, 20, 24	4, 8, 12, 16, 20, 24	96	4, 8, 12, 16	4, 8, 12, 16	4, 8, 12, 16	4, 8, 12, 16, 20, 24	4, 8, 12, 16, 20, 24	4, 8, 12, 16, 20, 24	4, 8, 12, 16, 20, 24	96
Optional FC 8 Gb/16 Gb ports per array	4, 8, 12, 16	4, 8, 12, 16	4, 8, 12, 16, 20, 24	4, 8, 12, 16, 20, 24	4, 8, 12, 16, 20, 24	96	4, 8, 12, 16	4, 8, 12, 16	4, 8, 12, 16	4, 8, 12, 16, 20, 24	4, 8, 12, 16, 20, 24	4, 8, 12, 16, 20, 24	4, 8, 12, 16, 20, 24	96
Max. power requirement (watts/kVA)	600/0.667	650/0.722	800/0.889	850/0.944	1200/1.333	4800/5.332	750/0.833	650/0.722	750/0.833	850/0.944	850/0.944	900/1.000	900/1.000	3600/4.000
Thermal (BTU)	1968	2132	2624	2788	3936	15744	2460	2132	2460	2788	2788	2952	2952	11,808

HPE 3PAR STORESERV STORAGE

New

HPE 3PAR StoreServ 8000 Storage: Enterprise Tier 1 storage at a midrange price. HPE 3PAR StoreServ 8000 Storage delivers the performance advantages of a purpose-built, flash-optimized architecture without compromising resiliency, efficiency, or data mobility.

The HPE 3PAR StoreServ 9000 Storage: Enterprise-class flash array that helps you consolidate primary storage workloads—for file, block, and object—without compromising performance, scalability, data services, or resiliency.

The HPE 3PAR StoreServ 20000 Storage: Enterprise flash arrays for massive consolidation of demanding workloads with greater than 3 million IOPS, sub-millisecond latencies, a 4x density advantage, and scalability to 24 PB of usable capacity.

Model	8200	8400	8440	8450	9450	20450	20800	20850	20840
Number of Controller Nodes	2	2 or 4	2 or 4	2 or 4	2 or 4	2 or 4		2, 4, 6, or 8	
HPE 3PAR Gen5 ASICs	2	2 or 4	2 or 4	2 or 4	4 or 8	4 or 8		4, 8, 12 or 16	
Processors	2 x 6-core 2.2 GHz	2–4 x 6-core 2.2 GHz	2–4 x 10-core 2.4 GHz	2–4 x 10-core 2.4 GHz	4–8 x 10-core 2.4 GHz	4–8 x 8-core 2.5 GHz	4–16 x 8-core 2.5 GHz	4–16 x 10-core 2.4 GHz	
Total Cache	832 GiB	1664 GiB	8384 GiB	384 GiB	896 GiB	0.9–1.8 TiB	0.6–34.5 TiB	0.9–3.6 TiB	0.9–51.6 TiB
Flash Cache (optional)	768 GiB	1536 GiB	8000 GiB	N/A		N/A	0–32 TiB	N/A	0–48 TiB
On-Node Cache	64 GiB	128 GiB	384 GiB	384 GiB		896–1792 GiB	640–2560 GiB	896–3584 GiB	896–3584 GiB
Total Cache per node pair	832 GiB	832 GiB	4192 GiB	192 GiB	448 GiB				
Flash Cache per node pair	768 GiB	768 GiB	4000 GiB	N/A					
On-Node Cache per node pair	64 GiB	64 GiB	192 GiB	192 GiB					
Maximum Host Ports	12 ports	24 ports	24 ports	24 ports	80 ports	80 ports		160 ports	
16 Gb/s Fibre Channel Host Ports	4–12 ports	4–24 ports	4–24 ports	4–24 ports	0–80 ports	0–80 ports		0–160 ports	
10 Gb/s iSCSI Host Ports	0–4 ports	0–8 ports	0–8 ports	0–8 ports	0–40 ports	0–40 ports		0–80 ports	
10 Gb/s FCoE Host Ports	0–4 ports	0–8 ports	0–8 ports	0–8 ports					
10 Gb/s Ethernet Ports for File Persona	N/A	N/A	N/A	N/A	0–24 ports	0–24 ports		0–48 ports	
1 Gb/s Ethernet Adapter	0–8 ports	0–16 ports	0–16 ports	0–16 ports		N/A	N/A	N/A	N/A
10 Gb/s Ethernet Adapter	0–4 ports	0–8 ports	0–8 ports	0–8 ports		N/A	N/A	N/A	N/A
Maximum Initiators Supported	2048	4096	4096	4096		N/A	N/A	N/A	N/A
Built-in 1GbE Ports	2	2–4	2–4	2–4	2–4 ports	N/A	N/A	N/A	N/A
Built-in 10GbE Ports	N/A	N/A	N/A	N/A	N/A	2–4 ports		2–8 ports	
2U Controller Node Drive Capacity	24	24	24	24	N/A	N/A	N/A	N/A	N/A
Number of Hard Disk Drives	6–240	6–576	6–960	N/A	N/A	N/A	6–2304 drives	N/A	6–2304 drives
Number of Solid State Drives	6–120	6–240	6–480	6–480	6–576	6–576	6–1152	6–1152	6–1152
Max. Raw Capacity (approx.)	1000 TiB	2400 TiB	4000 TiB	3351 TiB	6000 TiB	1.925–4021 TiB	1.925–9600 TiB	1.925–8043 TiB	1.925–9600 TiB
Max. Raw Capacity (SSD only)	838 TiB	1676 TiB	3351 TiB	3351 TiB		1.925–4021 TiB	1.925–8043 TiB	1.925–8043 TiB	1.925–8043 TiB
Usable File Capacity	2–256 TiB	2–512 TiB	2–512 TiB	2–512 TiB	2–512 TiB	2–512 TiB		2–1024 TiB	

Capacity details	8200	8400	8440	8450	9450	20450	20800	20850	20840
RAID Levels	RAID 0, 1, 5, 6					RAID 0, 1, 5, MP			
RAID 5 Data to Parity Ratios	2:1–8:1					2:1–8:1			
RAID 6 Data to Parity Ratios	4:2, 6:2, 8:2, 10:2, 14:2				4:2, 6:2, 8:2, 10:2, 12:2, 14:2	4:2, 6:2, 8:2, 10:2, 12:2, 14:2			
Drive Capacities (SSDs)	400 GB SSD, 920 GB SSD, 1.92 TB SSD, 3.84 TB SSD, 7.68 TB SSD, 15.36 TB SSD				400 GB SSD, 1.92 TB SSD, 3.84 TB SSD, 7.68 TB SSD, 15.36 TB SSD	400 GB SSD, 920 GB SSD, 1920 GB SSD, 3840 GB SSD, 7680 GB SSD, 15360 GB SSD			
Drive Capacities (HDDs)	300 15K SAS, 600 15K SAS 600 10K SAS, 1200 10K SAS, 1800 10K SAS 2000 7.2K NL7, 4000 7.2K NL, 6000 7.2K NL, 8000 7.2K NL			N/A		N/A	300 15K SAS, 600 15K SAS, 600 10K SAS, 1200 10K SAS, 1800 10K SAS, 2000 7.2K SAS NL, 4000 7.2K SAS NL, 6000 7.2K SAS NL, 8000 7.2K SAS NL	N/A	300 15K SAS, 600 15K SAS, 600 10K SAS, 1200 10K SAS, 1800 10K SAS, 2000 7.2K SAS NL, 4000 7.2K SAS NL, 6000 7.2K SAS NL, 8000 7.2K SAS NL
Number of Add-on Drive Enclosures	0–9 enclosures	0–22 enclosures	0–38 enclosures	0–18 enclosures	2–48 enclosures	2–48 enclosures	2–96 enclosures		
Support for HPE 3PAR StoreServ File Controller v3						Yes			

Gateway

The HPE 3PAR StoreServ File Controller provides an efficient, bulletproof, and effortless way to provide file services from any model of HPE 3PAR StoreServ Storage.

Processor/Cache Memory		Intel Xeon E5-2609 v3 (1.9 GHz/6-core/15 MB/85W) Processor (SKU K2R67A)
		Intel Xeon E5-2609 v4 (1.7 GHz/8-core/15 MB/85W) Processor (SKU Q0F57A)
Memory	**Type Standard**	DDR4 Registered (RDIMM) standard 32 GB (4 x 8 GB)
	DIMM Sockets	16
Network Controller	**NIC Ports**	2 x 1GbE
Storage Controller	**Controller(s)**	HPE Dynamic Smart Array B140i Controller
	RAID	0, 1, 1+0, and 5
Storage	**Hard Drives (Internal)**	24 x 2.5" (Small Form Factor) hot plug bays in the HPE 3PAR StoreServ File Controller v3 System chassis
		2 x 6G SATA Solid State Drives containing factory installed OS. Configured as RAID 1 mirrored pair
	Hard Drives (External)	Designed for attach to Fibre Channel (HBA required), SAS (HBA required), or iSCSI (iSCSI initiator included) arrays
Power Supply		2 x 800W Platinum hot plug Power Supply (located in HPE 3PAR StoreServ File Controller v3 System chassis)
Power Cords		Note: The HPE 3PAR StoreServ File Controller v3 Systems are primarily connected to PDUs in data center racks and ship standard with a PDU 6-foot C14 to C13 power cord (142258–001)
System Fans		8 (4+4 redundancy) non-hot plug in HPE 3PAR StoreServ File Controller v3 System chassis
Form Factor		HPE 3PAR StoreServ File Controller v3 System—2U rack mount chassis
		HPE 3PAR StoreServ File Controller v3 Single Node—2U single slot tray (one or two nodes per chassis)
		HPE 3PAR StoreServ File Controller WSS2016 v3 Single Node—2U single slot tray (one or two nodes per chassis)

HPE XP7 Storage

HPE XP7 Storage: Top performance, extreme availability, easy consolidation capability and outstanding HPE support and investment protection. Designed for applications requiring 100% data availability, the HPE XP7 Storage combines a seven-nines platform (99.99999%) of fully online, scalable, and redundant hardware, with ultra-high-performance, advanced data replication, and disaster recovery (DR) along with online data migration capabilities.

XP7

Capacity	34.5 PB raw and 255 PB external storage, maximum supported capacities
Drive description	2304 SFF SAS or 1152 LFF SAS or 2304 SFF SAS/SSD or 576 Flash Module SAS maximum supported quantity of media form factors HPE XP7 Storage supports combining multiple media formats in the same system
Host interface	8 Gb FICON 176-ports or 8 Gb Fibre Channel 192-ports or 16 Gb/8 Gb Fibre Channel 96-ports or 10 Gb FCoE 176-ports or 10 Gb/sec iSCSI 88-ports supported
Cache	2 TB, maximum supported cache, includes up to 80 GB of shared memory
Availability features	All active components are redundant, and hot-swappable
RAID support	RAID 1 (2D + 2P), RAID 1 (4D + 4P), RAID 5 (3D + 1P), RAID 5 (7D + 1P), RAID 5 (14D + 2P), RAID 5 (28D + 4P), RAID 6 (6D + 2P), RAID 6 (14D + 2P) recommended
Compatible operating systems	HPE NonStop HPE OpenVMS VMware HP-UX IBM AIX Linux Mainframe Microsoft Windows Oracle Solaris

HPE STOREONCE

Hardware

New

Description	HPE StoreOnce 3620 delivers entry-level disk-based backup and disaster recovery that's ideal for smaller remote or branch offices and data centers.	HPE StoreOnce 3640 delivers scalable backup and restore for small to midsized data centers, and provides an ideal replication target device for up to 36 remote and branch offices.	HPE StoreOnce 5200 delivers scalable backup and restore for small to midsized data centers, and provides an ideal replication target device for up to 64 remote and branch offices.	HPE StoreOnce 5250 offers disk-based backup with deduplication for longer term on-site data retention and off-site disaster recovery with best-in-class scalability and performance for larger midsize and enterprise data centers.	HPE StoreOnce 5650 offers disk-based backup with deduplication for longer term on-site data retention and off-site disaster recovery with best-in-class scalability and performance for larger midsize and enterprise data centers.
Overview product specifications	3620	3640	5200	5250	5650
Form factor	2U Rack	2U Scalable Rack	4U Scalable Rack	7U to 12U Scalable Rack	7U to 22U Scalable Rack
Total capacity (raw)	48 TB	Up to 144 TB	Up to 288 TB	Up to 1120 TB	Up to 2240 TB
Local usable capacity	Up to 31.5 TB	Up to 108 TB	Up to 216 TB	Up to 864 TB	Up to 1.7 PB
Effective local usable capacity	Up to 630 TB (with 20:1 deduplication)	2.16 PB (with 20:1 deduplication)	4.32 PB (with 20:1 deduplication)	17.3 PB (with 20:1 deduplication)	34 PB (with 20:1 deduplication)
Maximum Cloud Bank Storage usable capacity	63 TB	216 TB	432 TB	1.7 PB	3.5 PB
Effective Cloud Bank Storage capacity	1.26 PB (with 20:1 deduplication)	4.32 PB (with 20:1 deduplication)	8.6 PB (with 20:1 deduplication)	34 PB (with 20:1 deduplication)	70 PB (with 20:1 deduplication)
Effective total usable capacity	1.9 PB (with 20:1 deduplication)	6.48 PB	13 PB	51 PB (with 20:1 deduplication) Maximum write performance	104 PB (with 20:1 deduplication)
Maximum write performance	6 TB/hour	7 TB/hour	17 TB/hour	22 TB/hour	27 TB/hour
Maximum catalyst write performance	14 TB/hour	18 TB/hour	33 TB/hour	41 TB/hour	47 TB/hour
Maximum fan-in/backup targets	24	24	32	32/64	50/192

Software

New

HPE StoreOnce VSA Backup: As a software defined backup target, StoreOnce VSA can be configured to provide the capacity and performance needed to meet the data protection requirements.

		Min. config.	Max. config.	To scale from minimum configuration
Performance	Local capacity	4 TB	500 TB	100 MB vRAM per TB
	Cloud Bank Storage capacity	N/A	1 PB	100 MB vRAM per TB
	Max. backup performance	2 TB/hr	36 TB/hr	1 vCPU + 300 IOPS per TB/hr
	Max. concurrency	16 streams	256 streams	500 MB vRAM per stream
	Maximum backup targets	4 stores	32 stores	1 GB vRAM per store
	Fan-in ratio	8 sources	8 sources	N/A
Resource Requirements	Minimum vRAM	24 GB	320 GB	N/A
	Minimum CPU	2	36	N/A
	IOPS	600	10,800	N/A
	Dedicated hard drives	4	72	N/A

HPE STOREEVER

Autoloader

New

	HPE StoreEver MSL 1/8 0-drive
Maximum number of tape drives (Half-height)	1
Drives type	LTO-8 Ultrium 30750 LTO-7 Ultrium 15000 LTO-6 Ultrium 6250 LTO-5 Ultrium 3000
Maximum number of tape slots (Half-height)	8
Maximum capacity (2.5:1 compression with LTO-8)	240 TB
Maximum sustained transfer rate (native)	Up to 1.08 TB/hr per drive
Form factor	1U
Interface	8 Gb Native Fibre Channel; 6 Gb/s SAS
Warranty—year(s) (parts/labor/on-site)	1/0/0

MSL

New



	HPE StoreEver MSL2024	HPE StoreEver MSL3040	HPE StoreEver MSL6480
Maximum number of tape drives (Half-height)	2	21	42
Drives type	LTO-8 Ultrium 30750; LTO-7 Ultrium 15000; LTO-6 Ultrium 6250; LTO-5 Ultrium 3000	LTO-8 Ultrium 30750; LTO-7 Ultrium 15000; LTO-6 Ultrium 6250	LTO-8 Ultrium 30750; LTO-7 Ultrium 15000; LTO-6 Ultrium 6250; LTO-5 Ultrium 3000
Maximum number of tape slots (Half-height)	24	280	560
Maximum capacity (2.5:1 compression with LTO-8)	720 TB	8.4 PB	16.8 PB
Maximum sustained transfer rate (native)	Up to 2.16 TB/hr with 2 LTO-8 drives	Up to 22.5 TB/hr with 21 LTO-8 drives	Up to 45.4 TB/hr with 42 LTO-8 drives
Form factor	2U	3U–21U	6U–42U
Interface	8 Gb Fibre Channel; 6 Gb/s SAS;	8 Gb Fibre Channel; 6 Gb/s SAS	8 Gb Fibre Channel; 6 Gb/s SAS
Warranty—year(s) (parts/labor/on-site)	1/0/0	1/1/1	1/1/1

Enterprise tape libraries

New


	HPE T950	HPE TFinity ExaScale
Maximum number of tape drives (Half-height)	120 (Full-height)	144 (Full-height)
Drives type	LTO-8, LTO-7 and LTO-6, or TS11xx	LTO-8, LTO-7 and LTO-6, or TS11xx
Maximum number of tape slots (Half-height)	10,020 LTO 7,614 TS11xx	53,460 LTO 40,680 TS11xx
Maximum capacity (2.5:1 compression with LTO-8)	300.6 PB (using LTO-8 drives and media)	1.6 EB (using LTO-8 drives and media)
Maximum sustained transfer rate (native)	Up to 155.52 TB/hour with maximum configuration of LTO-8 drives	186.6 TB/hour with maximum configuration of LTO-8 drives
Form factor	47U (Full-height)	47U (Full-height)
Interface	8 Gb/s FC	8 Gb/s FC
Warranty—year(s) (parts/labor/on-site)	Refer to Spectra Logic	Refer to Spectra Logic

HPE STORAGE MEDIA

New

Category	LTO Ultrium	LTO Ultrium	LTO Ultrium	LTO Ultrium
Product Line	7A	7A	7A	7A
Product Name	HPE LTO-8 Ultrium 30 TB RW 20 Data Cartridges	HPE LTO-7 Ultrium 15 TB RW 20 Data Cartridges	HPE LTO-6 Ultrium 6.25 TB MP RW 20 Data Cartridges	HPE LTO-5 Ultrium 3 TB RW 20 Data Cartridges
Product No. with Option	Q2078AA	C7977AN	C7976AN	C7975AN
SAP® (Yes/No)	Yes	Yes	Yes	Yes
Single Unit UPC	1 90017 34459 1	1 90017 34460 7	1 90017 34461 4	1 90017 34462 1
Unit JAN code	4 549821 271184	4 549821 271191	4 549821 271207	4 549821 271214
Unit Dimensions (inches)	L 12.36 x W 10.03 x H 5.8	L 12.36 x W 10.03 x H 5.8	L 12.36 x W 10.03 x H 5.8	L 12.36 x W 10.03 x H 5.8
Unit Dimensions (cm)	L 31.4 x W 25.5 x H 14.8	L 31.4 x W 25.5 x H 14.8	L 31.4 x W 25.5 x H 14.8	L 31.4 x W 25.5 x H 14.8
Unit Weight (lbs)	12.67	12.67	12.67	12.67
Unit Weight (grams)	5747.00	5747.00	5747.00	5747.00
30 Word Description	HPE LTO-8 Ultrium 30 TB RW 20, Data Cartridges, 20 Pk	HPE LTO-7 Ultrium 15 TB RW 20, Data Cartridges, 20 Pk	HPE LTO-6 Ultrium 6.25 TB MP RW 20, Data Cartridges, 20 Pk	HPE LTO-5 Ultrium 3 TB RW 20, Data Cartridges, 20 Pk
Warranty (if not included in data sheet)	A142—2X (limited lifetime)	A142—2X (limited lifetime)	A142—2X (limited lifetime)	A142—2X (limited lifetime)

HPE STOREEASY

New

HPE StoreEasy 1x60 Storage: Whether you are a small, medium, or large distributed organization with remote offices, you need reliable, cost-efficient storage that can keep pace with users and growing volumes of file data without getting in the way of how your organization operates.

HPE Storage File Controller: An optimized, efficient, secure, and highly available file services gateway to address the file storage challenges of customers' medium to large organizations and their SAN environments.

StoreEasy 1460 (all models)

StoreEasy 1560 (all models)

StoreEasy 1660 Performance Model only

StoreEasy 1860 Performance Model only

HPE Storage File Controller

Processor/Cache Memory		Intel Xeon-Bronze 3104 (1.7 GHz/6-core/85W) Processor	Intel Xeon-Bronze 3104 (1.7 GHz/6-core/85W) Processor	Intel Xeon-Silver 4112 (2.6 GHz/4-core/85W) Processor **StoreEasy 1660 (all others models)** Intel Xeon-Bronze 3104 (1.7 GHz/6-core/85W) Processor	Intel Xeon-Silver 4112 (2.6 GHz/4-core/85W) Processor **StoreEasy 1860 (all others models)** Intel Xeon-Bronze 3104 (1.7 GHz/6-core/85W) Processor	Intel Xeon-Bronze 3104 (1.7 GHz/6-core/85W); second processor optional **HPE Storage Performance File Controller** Intel Xeon-Silver 4110 (2.1 GHz/8-core/85W); second processor optional
Memory	Type	DDR4–2666 CAS–19–19–19 Registered (RDIMM)				DDR4–2666 CAS–19–19–19 Registered (RDIMM)
	Maximum (by O/S license)	24 TB (WSS2016)				
	Standard	8 GB (1 x 8 GB)	8 GB (1 x 8 GB)	16 GB (1 x 16 GB)	16 GB (1 x 16 GB)	16 GB–32 GB (1 x 16 GB or 1 x 32 GB)
	DIMM Sockets	24	6	24	24	24
Network Controller	NIC ports	4	2	4	4	4 x 1GbE ports plus FlexibleLOM expansion
	Controller	1 Gb Ethernet 4-port	1 Gb Ethernet 4-port	1 Gb Ethernet 4-port	1 Gb Ethernet 4-port	N/A
Storage Controller	Controller(s)	HPE Smart Array P408i-a SR Gen10 (8 Internal Lanes 2 GB Cache/SmartCache) 12G SAS Modular Controller for data and OS drives	HPE Smart Array P408i-p SR Gen10 (8 Internal Lanes/2 GB Cache/SmartCache) 12G SAS Modular Controller for data and OS drives	HPE Smart Array P816i-a SR Gen10 (16 Internal Lanes/4 GB Cache/SmartCache) 12G SAS Modular Controller for data drives; HPE Smart Array S100i SR Gen10 SW RAID for OS drives only	HPE Smart Array P816i-a SR Gen10 (16 Internal Lanes/4 GB Cache/SmartCache) 12G SAS Modular Controller for data drives; HPE Smart Array S100i SR Gen10 SW RAID for OS drives only	HPE Smart Array S100i SR Gen10 SW RAID
	RAID (for data drives using Smart Array controller)	RAID 0, 1, 5, 6, 10, 50, 60	RAID 0, 1, 5, 6, 10, 50, 60	RAID 0, 1, 5, 6, 10, 50, 60	RAID 0, 1, 5, 6, 10, 50, 60	0, 1, 1+0, and 5
		1 ADM, 10 ADM	1 ADM, 10 ADM	1 ADM, 10 ADM	1 ADM, 10 ADM	N/A
		(Advanced Data Mirroring) on Smart Array P816i—Not all RAID levels recommended or supported on StoreEasy	(Advanced Data Mirroring) on Smart Array P816i—Not all RAID levels recommended or supported on StoreEasy	(Advanced Data Mirroring) on Smart Array P816i—Not all RAID levels recommended or supported on StoreEasy	(Advanced Data Mirroring) on Smart Array P816i—Not all RAID levels recommended or supported on StoreEasy	N/A
	Internal SAS connectors	8 SAS lanes across 2 x4 internal Mini-SAS ports	8 SAS lanes across 2 x4 internal Mini-SAS ports	16 SAS lanes across 4 x4 internal Mini-SAS ports	16 SAS lanes across 4 x4 internal Mini-SAS ports	N/A
	External SAS connectors	None	None	None	None	N/A
Storage	Hard Drives Internal	4 LFF (3.5") hot plug bays in front	4 LFF (3.5") hot plug bays standard and 4 additional LFF (3.5") hot plug bays optional (total of 8 internal LFF bays maximum)	12 LFF (3.5") hot plug bays in front and optional 4 LFF hot plug bays in mid-chassis drive cage (total of 16 internal LFF bays maximum)	24 SFF (2.5") hot plug bays in front and optional 4 SFF hot plug bays in rear drive cage (total of 28 SFF internal bays maximum)	2 x 240 GB SATA SFF SSDs for Operating System (configured as RAID 1 mirrored pair)
	External	Support for external D3X10 and D6020 Disk Enclosures requires optional Smart Array controller with external port	Support for external D3X10 and D6020 Disk Enclosures requires optional Smart Array controller with external port	Support for external D3X10 and D6020 Disk Enclosures requires optional Smart Array controller with external port	Support for external D3X10 and D6020 Disk Enclosures requires optional Smart Array controller with external port	Designed for attach to Fibre Channel (HBA required) or iSCSI (Microsoft iSCSI initiator included) arrays
Maximum Storage Capacity (raw)	Internal	32 TB	64 TB (with optional card cage and 4 x 12 TB LFF HDDs)	192 TB (with optional mid-chassis cage and 16 x 12 TB LFF HDDs)	67.2 TB (with optional rear cage and 28 x 2.4 TB SFF HDDs)	(Internal) N/A (External) depends on external array
	External	Depends on number of Smart Arrays with external ports and type of external storage enclosure used				
Power Supply		1 x 500 watts Platinum, hot plug (2nd redundant power supply optional)	1 x 500 watts Platinum, hot plug (2nd redundant power supply optional)	2 x 800 watts Platinum, hot plug	2 x 800 watts Platinum, hot plug	2 x 500W Platinum hot plug Power Supply
Power Cords		One high voltage power cords (IEC C13 to C14) standard; two if second power supply added		Two high voltage power cords (IEC C13 to C14) standard	Two high voltage power cords (IEC C13 to C14) standard	Note: The HPE Storage File Controllers are primarily connected to PDUs in data center racks and ship standard with a PDU 6-foot C14 to C13 power cord (142258–001)
System Fans		Single processor system includes 5 hot plug, redundant fans, standard dual processor system includes 7 hot plug redundant fans	2 non-hot plug redundant fans, standard	6 hot plug, high-performance, redundant fans, standard	6 hot plug, high-performance, redundant fans, standard	Single processor system includes 5 hot plug, redundant fans, standard. Dual processor system includes 7 hot plug redundant fans.
Form Factor		1U rack mount (includes rail kit)	Tower (4.5U) **Note: Sliding Shelf–874578-B21 is optional to support rack form factor.**	2U rack mount (includes rail kit)	2U rack mount (includes rail kit)	1U rack mount (includes rail kit)

HPE STOREFABRIC

Enterprise-level Gen6 32 Gb Fibre Channel Director Switches

			New 	New 
Product name	**HPE StoreFabric SN8600B 8-Slot Power Pack+ SAN Director Switch**	**HPE StoreFabric SN8600B 4-Slot Power Pack+ SAN Director Switch**	**HPE StoreFabric SN8500C 8-slot SAN Director Switch**	**HPE StoreFabric SN8500C 4-slot SAN Director Switch**
Port speed/Performance	Up to 32 Gb FC	Up to 32 Gb FC	Up to 64 Gb FC	Up to 64 Gb FC
Ports	Up to 384-ports (equivalent to 512 with ICLs) at 32 Gb. It can accommodate up to 8 HPE 48-port blades and comes pre-bundled with HPE Power Pack+ Software	Up to 192-ports (equivalent to 256 with ICLs) at 32 Gb. It can accommodate up to 4 HPE 48-port FC blades and comes pre-bundled with HPE Power Pack+ Software	Up to 384-ports (equivalent to 512 with ICLs) at 32 Gb. It can accommodate up to 8 HPE 48-port blades.	Up to 192 32 Gbps Fibre Channel or 10 Gbps FCoE ports. It can accommodate up to 4 HPE 48-port blades.
Aggregate switch bandwidth	16.2 Tbps aggregate chassis bandwidth 12.2 Tbps FC port bandwidth (384-ports x 32 Gb) 4.096 Tbps ICL bandwidth (32 x 128 Gbps) 1.5 Gb slot bandwidth	8.1 Tbps aggregate chassis bandwidth 6.1 Tbps FC port bandwidth (192-ports x 32 Gb) 2.048 Tbps ICL bandwidth (32 x 128 Gbps) 1.5 Gb slot bandwidth	Up to 24 Tbps front-panel, Fibre Channel switching bandwidth and 21 Tbps of FCoE bandwidth; per chassis: Up to 384 2/4/8 Gbps, 4/8/16 Gbps, 8/16/32 Gbps or 10 Gbps Fibre Channel ports	Up to 12 Tbps front-panel, Fibre Channel, line-rate, non-blocking system-level switching capacity
Encryption capability	AES 256-bit, data at rest and data in flight	AES 256-bit, data at rest and data in flight	AES 256-bit, data at rest and data in flight	AES 256-bit, data at rest and data in flight
Protocol support	FC, FCIP	FC, FCIP	FC, FCoE	FC, FCoE
Frame/Enclosure supported	N/A	N/A	N/A	N/A
Availability	Supports “five nines” availability (i.e., 99.999%), redundant hot-swappable components	Supports “five nines” availability (i.e., 99.999%), redundant hot-swappable components	Fully redundant components, including fabric modules, supervisors, and power supplies	Fully redundant components, including fabric modules, supervisors, and power supplies
Media types	N/A	N/A	N/A	N/A
Form factor	14U	9U	14U	9U
Warranty	(3–3–3 hardware warranty)	(3–3–3 hardware warranty)	(3–3–3 hardware warranty)	(3–3–3 hardware warranty)

Entry-level switches

		New
		
	HPE SN3600B 32 Gb FC Switch	**HPE SN6610C 32 Gb FC Switch**
Port speed/Performance	32 Gb FC	32 Gb FC
Ports	8–24 FC Enabled device ports—24 max.	8–32 FC enabled device ports—32 max.
Aggregate switch bandwidth	256–768 Gb end-to-end full duplex	1024 end-to-end full duplex
Encryption capability	N/A	N/A
Protocol support	4/8/16/32 Gb FC	4/8/16/32 Gb FC
Frame/Enclosure supported	N/A	N/A
Availability	Integrated single power supply and 4 built-in cooling fans	Integrated single power supply and 2 built cooling fans
Media types	B-series 16 Gb, 32 Gb SFP+	C-series 32 Gb, 32 Gb SFP+
Form factor	1U	1U
Warranty	(3–3–3 hardware warranty)	(1–1–1 hardware warranty)

Mid-level switches

	New	
		
	HPE StoreFabric SN6600B 32 Gb FC Switch	**HPE SN6620C 32 Gb FC Switch**
	32 Gb FC	32 Gb FC
	24–64 FC device ports	24–48 FC enabled device ports—48 Max.
	2 Tb/s maximum	1536 end-to-end full duplex
	In-flight encryption	N/A
	4/8/10/16/32 Gb FC	4/8/16/32 Gb FC
	N/A	N/A
	Two integrated redundant, hot-swappable power supplies with integrated cooling fans	Integrated single power supply and 2 built cooling fans
	B-series 16 Gb SFP+, 32 Gb SFP+ **Note:** Some models come pre-bundled with Brocade-branded 32 Gb SW SFP+	C-series 32 Gb, 32 Gb SFP+
	1U	1U
	(3–3–3 hardware warranty)	(1–1–1 hardware warranty)

Enterprise switch

	New
	
	HPE StoreFabric SN6650B FC Switch
	32 Gb FC
	48–128 FC enabled device ports—32 Max.
	4.096 Tbps end-to-end full duplex
	In-flight encryption
	4/8/16/32 GB FC
	N/A
	Integrated dual power supply and 2 built cooling fans
	B-series 32 Gb, 32 Gb SFP+
	2U
	(1–1–1 hardware warranty)

Embedded switches

		
	Brocade 16 Gb FC Switch Module for HPE Synergy	**Brocade 16 Gb SAN Switch for HPE BladeSystem c-Class**
	16 Gb FC	16 Gb FC
	12–24 FC device ports depending on model (12 downlinks, 24 uplinks)	16–28 FC device ports depending on model (16 downlinks, 12 uplinks)
	384 Gbps maximum depending on model	448 Gbps depending on model
	N/A	N/A
	FC	FC
	HPE Synergy Frame	HPE BladeSystem c-Class
	Hot pluggable, non-disruptive upgrades, redundant switches	Redundant switches per BladeSystem for high availability; hot-swappable; hot-code load activation
	B-series 16 Gb SFP+ and 8 Gb SFP+ optical transceivers, Quad Small Form Pluggable (QSFP)	B-series 16 Gb SFP+ and 8 Gb SFP+ optical transceivers
	Embedded	Embedded
	(3–3–3 hardware warranty)	1-year parts, 1-year labor, 1-year on-site

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