

Overview

HPE Solutions with Qumulo

Together, HPE and Qumulo simplify your file data anywhere and with the choice to consume as-a-service via HPE GreenLake. Reliably store and manage billions of files that can be securely accessed via rich file protocols and an S3 API. Gain instant control of your data at lower cost and higher performance, at the edge, in the datacenter, and in the cloud. With purpose-built all-NVMe flash and hybrid-NVMe flash systems forged from industry leading HPE Alletra 4000 and HPE Apollo 4000 data storage servers, you can achieve the ideal mix of price, performance, and capacity to address your unstructured data needs now and in the future. HPE Solutions with Qumulo empower you to store, manage, and curate file data, at scale, to match the needs of your business.

What's new

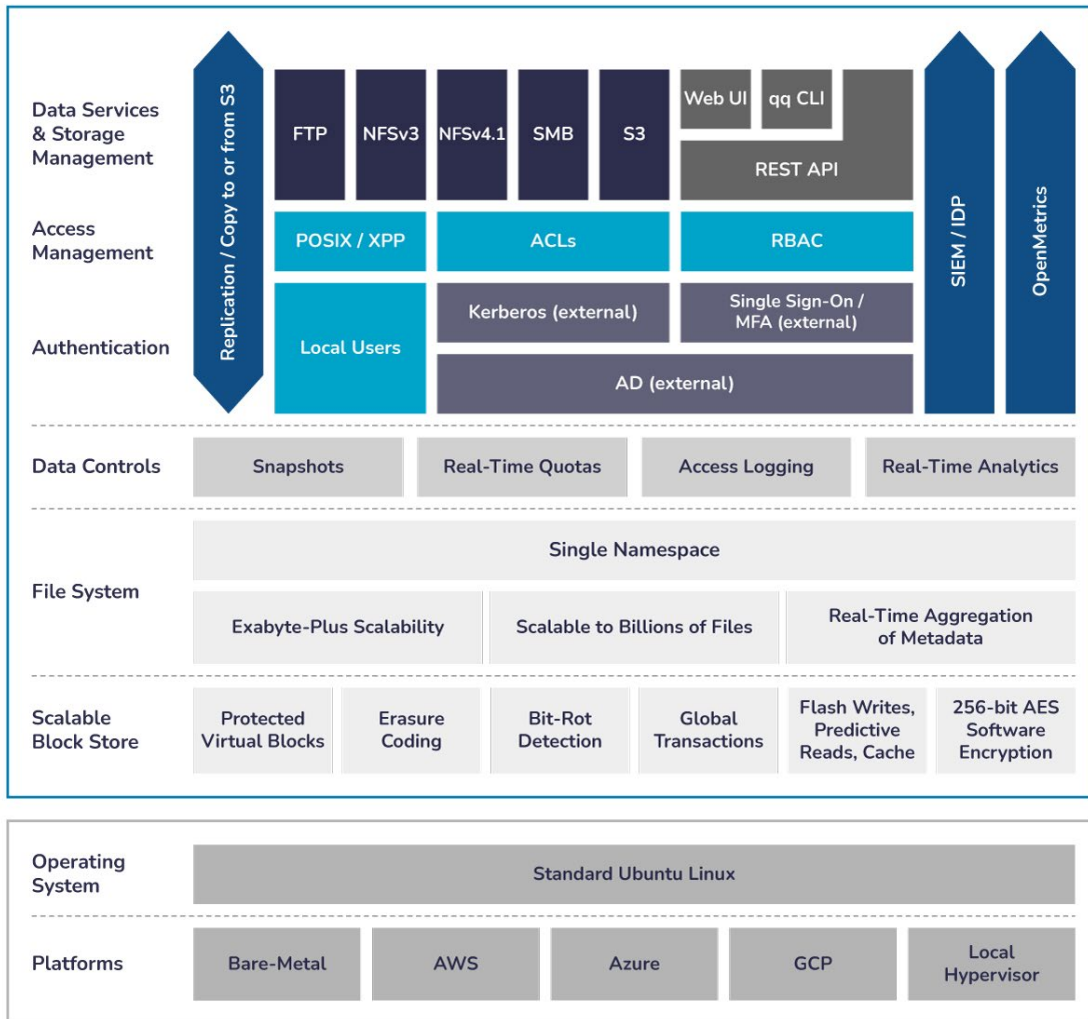
- The HPE Alletra Storage Server 4110 data storage server is a dense, 1U, all-NVMe system for file workloads, offering advanced features, security, a cloud experience, performance & capacity - at an affordable price.
- Adaptive Data Protection optimizes data protection configurations as clusters grow, reclaiming storage instantly, with no user impact, resulting in better failure tolerance, storage utilization & TCO.
- Transparent Platform Refresh allows customers to replace older nodes with newer hardware without disruption to end users' workloads, and without requiring time-consuming and expensive migrations.
- Integration of Qumulo software with the Varonis Security Data Platform and snapshot locking, enhances data security and protects data from being accidentally or maliciously deleted.
- New advanced support processes, with cross-company electronic case exchange, improves customer response time, shortens repair time, and eliminates delays in resolution.

For further information, please consult with your HPE representative

What's Included in the Qumulo Software Subscription

With HPE Apollo 4200 Gen10 Plus and HPE Alletra Storage Server 4110 servers running Qumulo software, customers get a density-optimized 1U or 2U rack mount file storage solution offering either All-NVMe Flash in 38TB, 153TB, or 307TB capacity nodes, Hybrid solution in 36TB, 90TB, 240TB or 480TB capacity nodes or a dense Archive at 240TB or 480TB raw capacity per node. The Qumulo software license is a capacity based subscription and includes all features and capabilities of the Qumulo Core software simplifying procurement, ownership, and administration.

Overview



Overview

Models

HPE Apollo Nodes for Qumulo

Description	SKU
HPE Alletra Storage Server 4110 38TB E3S All-NVMe 100Gb TAA-compliant Node for Qumulo	S1R90A
HPE Alletra Storage Server 4110 153TB E3S All-NVMe 100Gb TAA-compliant Node for Qumulo	S1R91A
HPE Alletra Storage Server 4110 20EDSFF Configure-to-order Node for Qumulo	S1R92A
HPE Apollo 4200 Gen10 Plus 36TB 25Gb TAA-compliant Node for Qumulo	S0D89A
HPE Apollo 4200 Gen10 Plus 36TB Configure-to-order Node for Qumulo	S0D90A
HPE Apollo 4200 Gen10 Plus 90TB 25Gb TAA-compliant Node for Qumulo	S0D91A
HPE Apollo 4200 Gen10 Plus 90TB Configure-to-order Node for Qumulo	S0D92A
HPE Apollo 4200 Gen10 Plus 240TB 100Gb Hybrid TAA-compliant Node for Qumulo	S0D93A
HPE Apollo 4200 Gen10 Plus 480TB 100Gb Hybrid TAA-compliant Node for Qumulo	S0D94A
HPE Apollo 4200 Gen10 Plus 240TB Configure-to-order Node for Qumulo	S0D95A
HPE Apollo 4200 Gen10 Plus 240TB 25Gb Archive TAA-compliant Node for Qumulo	S0D96A
HPE Apollo 4200 Gen10 Plus 480TB 25Gb Archive TAA-compliant Node for Qumulo	S0D97A
HPE Apollo 4200 Gen10 Plus 480TB Configure-to-order Node for Qumulo	S0D98A

Qumulo 1TB Active Tier (replaces former F1 & H1 tiers) Subscription and Support Electronic License to Use (E-LTU)

Qumulo Active Tier 1TB 1-year Subscription Mission Q Services and Support E-LTU	R0G81AAE
Qumulo Active Tier 1TB 3-year Subscription Mission Q Services and Support E-LTU	R0G83AAE
Qumulo Active Tier 1TB 5-year Subscription Mission Q Services and Support E-LTU	R0G85AAE

Qumulo 1TB General Purpose Tier (new name for former H3 tier) Subscription and Support Electronic License to Use (E-LTU)

Qumulo General Purpose Tier 1TB 1-year Subscription Mission Q Services and Support E-LTU	R0W31AAE
Qumulo General Purpose Tier 1TB 3-year Subscription Mission Q Services and Support E-LTU	R0W33AAE
Qumulo General Purpose Tier 1TB 5-year Subscription Mission Q Services and Support E-LTU	R0W35AAE

Qumulo Professional Services

Qumulo Installation and Advanced Training Service per Day	R0G89AAE
Qumulo Systems Health Check Service	R0G90AAE

Qumulo for Amazon Web Services

Qumulo Software for Amazon Web Services 1TB 1yr Subscription and Support E-LTU	R3K09AAE
Qumulo Software for Amazon Web Services 1TB 2yr Subscription and Support E-LTU	R3K10AAE
Qumulo Software for Amazon Web Services 1TB 3yr Subscription and Support E-LTU	R3K11AAE

Qumulo for Google Cloud Platform

Qumulo Software for Google Cloud Platform 1TB 1yr Subscription and Support E-LTU	R4D69AAE
Qumulo Software for Google Cloud Platform 1TB 2yr Subscription and Support E-LTU	R4D70AAE
Qumulo Software for Google Cloud Platform 1TB 3yr Subscription and Support E-LTU	R4D71AAE



Standard Features

Key benefits of HPE Solutions with Qumulo

Scale Anywhere : Flexibly deployed. Efficiently scaled. Securely protected

- Store your data anywhere - At the Edge, In the Datacenter, and In the Cloud - and get up to 455GB/s of performance for your file-based workloads on your cluster. Get scalable performance regardless of the number of files, buckets, objects, or total capacity.
- With the advanced erasure coding intelligence, store billions of files with a system that handles small files as efficiently as large ones. User files can occupy 100% of provisioned capacity without performance or management issues
- HPE nodes for Qumulo clusters are built on All-NVMe 1U ultra-dense HPE Alletra 4110 data storage servers, for performance-demanding workloads, and on Hybrid-NVMe 2U ultra-dense HPE Apollo 4200 Gen10 Plus data storage servers (to balance cost & performance) for active and archive workloads.
- Data protection techniques include erasure coding for fast re-protect, replication, snapshots, and FIPS140-2 encryption. Replication ensures data is where it's needed - on-prem or in the cloud. Built-in security extends 'silicon to software, factory to cloud', with HPE Integrated Lights Out 6.

Access Any Way : Universally connected. Cloud-native. Intelligently managed. Consumed as-a-service.

- Native SMB, NFS, S3 API, and FTP are optimized for enterprise-grade needs. Users can access the same data from any protocol. NTFS and POSIX permissions are automatically managed, effectively preserving ACL inheritance.
- Qumulo runs natively on AWS, Google Cloud Platform, and Microsoft Azure. Leverage applications hosted in the cloud using Qumulo SHIFT to copy data to/from Amazon S3. Utilize storage for Kubernetes, using the Qumulo CSI driver to automatically provision persistent storage for K8s clusters.
- Qumulo's real-time analytics dashboard, combined with the Operation Management option for the HPE Alletra 4110 data storage server provide an intuitive cloud management experience, featuring access control, usage monitoring (to prevent bottlenecks), system health status and firmware management.
- Both Qumulo's REST API and HPE support for the iLO Restful API are included in the solution. This allows you to programmatically manage and automate tasks, and reduce risks as well as demands on limited IT resources. It also facilitates easy import of analytics data into monitoring applications.
- Qumulo is offered, as-a-service, via HPE GreenLake. The service provides a pay-as-you-go platform for file data, that supports key business processes, and a wide range of workloads. Users gain fast access to their data and key applications—delivered in a cost-effective, consumption-based model.

Support Flawlessly : Relentlessly customer-focused

- Direct access to Qumulo engineers and system admins via Slack, phone, or email – with response times measured in minutes.
- Leverage HPE Tech Care Services for a range of support offerings & SLA's: Basic, Essential or Critical. Direct access to HPE product-specific specialists is offered through multiple channels that include phone, chat, automated incident logging, and HPE-moderated forums with defined response times.
- Bi-weekly software releases with quarterly rollups assure that customers get features quickly and without disruption.



Standard Features

HPE Alletra 4110 nodes: All-NVMe Flash			
Specifications (per node)	38TB All-NVMe Flash Node (S1R90A)	153TB All-NVMe Flash Node (S1R91A)	307TB All-NVMe Flash Node (S1R92A)
All-NVMe Disk Drive Capacity (raw)	38TB	153TB	307TB
NVMe drives	10 x 3.84TB NVMe Gen5 EDSFF	20 x 7.68TB NVMe Gen5 EDSFF	20 x 15.36TB NVMe Gen5 EDSFF
CPU	2 x Intel Xeon 4410Y (2.0GHz/12-core) or 4416+ (2.0GHz/20-core)		
Memory	128GB (DDR5-4800)		
Networking Ports	2x HPE Ethernet 100Gb 2-port QSFP28 Adapters (Included – dedicate frontend and backend traffics)		
Management Ports	Dedicated iLO6 1Gb base T(RJ-45) Management Port (Includes iLO Advanced Electronic License with 3yr Support on iLO Licensed Features)		
Power and Cooling	2 x 1600W N+1 Flex Slot Platinum Hot Plug Low Halogen Power Supply, 7 N+1 system fans shipped as standard		
Form Factor	1U rack mount (short)		

HPE Apollo 4200 Gen10 Plus nodes: Hybrid NVMe				
Specifications (per node)	36TB Node (S0D89A & S0D90A)	90TB Node (S0D91A & S0D92A)	240TB Node (S0D93A & S0D95A)	480TB Node (S0D94A & S0D98A)
Hard Disk Drive Storage Capacity (raw)	36TB	90TB	240TB	480TB
All-NVMe Cache Capacity (raw)	2.4TB	2.4TB	6.4TB	12.8TB
HDDs	9 x HPE 4TB SATA 7.2K LFF LP MV HDD	9 x HPE 10TB SATA 7.2K LFF LP ISE MV HDD	24 x HPE 10TB SATA 7.2K LFF LP ISE MV HDD	24 x HPE 20TB SATA 7.2K LFF LP ISE MV HDD
CPU	1 x Intel Xeon 4310 (2.1GHz/12-cores/120W)	1 x Intel Xeon 4310 (2.1GHz/12-cores/120W)	2 x Intel Xeon 4310 (2.1GHz/12-cores/120W)	2 x Intel Xeon 4310 (2.1GHz/12-cores/120W)
Memory	64GB (HPE DDR4Smart Memory)	64GB (HPE DDR4Smart Memory)	128GB (HPE DDR4Smart Memory)	128GB (HPE DDR4Smart Memory)
Networking Ports	HPE Ethernet 10/25Gb or 100Gb 2-ports	HPE Ethernet 10/25Gb or 100Gb 2-ports	HPE Ethernet 100Gb 2-ports	HPE Ethernet 100Gb 2-ports
Management Ports	Dedicated iLO5 1Gb base T(RJ-45) Management Port (Includes iLO Advanced Electronic License with 3yr Support on iLO Licensed Features)			
Power and Cooling	2 x 800W N+1 Flex Slot Platinum Hot Plug Low Halogen Power Supply, 5 N+1 dual-fans modules shipped as standard		2 x 1600W N+1 Flex Slot Platinum Hot Plug Low Halogen Power Supply, 5 N+1 dual-fans modules shipped as standard	
Form Factor	2U rack mount			



Standard Features

HPE Apollo 4200 Gen10 Plus nodes: Archive				
Specifications (per node)	36TB Node (S0D89A & S0D90A)	90TB Node (S0D91A & S0D92A)	240TB Archive Node (S0D96A & S0D95A)	480TB Node (S0D97A & S0D98A)
Hard Disk Drive Storage Capacity (raw)	36TB	90TB	240TB	480TB
All-NVMe Cache Capacity (raw)	2.4TB	2.4TB	6.4TB	12.8TB
HDDs	9 x HPE 4TB SATA 7.2K LFF LP MV HDD	9 x HPE 10TB SATA 7.2K LFF LP ISE MV HDD	24 x HPE 10TB SATA 7.2K LFF LP ISE MV HDD	24 x HPE 20TB SATA 7.2K LFF LP ISE MV HDD
CPU	1 x Intel Xeon 4310 (2.1GHz/12-cores/120W)	1 x Intel Xeon 4310 (2.1GHz/12-cores/120W)	2 x Intel Xeon 4310 (2.1GHz/12-cores/120W)	2 x Intel Xeon 4310 (2.1GHz/12-core/120W)
Memory	64GB (HPE DDR4Smart Memory)	64GB (HPE DDR4Smart Memory)	128GB (HPE DDR4Smart Memory)	128GB (HPE DDR4Smart Memory)
Networking Ports	HPE Ethernet 10/25Gb (preferred) or 100Gb 2-ports	HPE Ethernet 10/25Gb (preferred) or 100Gb 2-ports	HPE Ethernet 10/25Gb 2-ports	HPE Ethernet 10/25Gb Gb 2-ports
Management Ports	Dedicated iLO5 1Gb base T(RJ-45) Management Port (Includes iLO Advanced Electronic License with 3yr Support on iLO Licensed Features)			
Power and Cooling	2 x 800W N+1 Flex Slot Platinum Hot Plug Low Halogen Power Supply, 5 N+1 dual-fans modules shipped as standard		2 x 1600W N+1 Flex Slot Platinum Hot Plug Low Halogen Power Supply, 5 N+1 dual-fans modules shipped as standard	
Form Factor	2U rack mount			



Service and Support

Servers Hardware Warranty

HPE nodes for Qumulo is covered by a global limited warranty and supported by HPE Services and a worldwide network of HPE Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for HPE software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HPE Services operational services or customized service agreements. Hard drives which are part of the solution, have three year warranty, unless specifically called out as 1yr warranty or for SSDs have hit write limits. Please refer to the specific drive quickspecs for further details.

Notes: Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have Hewlett Packard Enterprise replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at:

<https://www.hpe.com/us/en/search-results.html?page=1&q=servers%20warranty&autocomplete=0>.

Qumulo Customer Success Program

Service and Support for the Qumulo File Data Platform products are provided directly by Qumulo. Details on Qumulo's Customer Success Program can be found here: <https://qumulo.com/terms-hub/support-offerings/>

All support cases are assigned a severity by the Qumulo Customer Success team based upon the impact reported by the customer. The initial response time is based on the severity level and is calculated from when the Qumulo Customers Success team first learns about the issue.

For any Qumulo warranty support and generic queries please email: support@qumulo.com

HPE Services - Service and Support

No matter where you are in your digital transformation journey, you can count on HPE Services Services to provide the expertise you need, when and where you need it.

HPE Services - Advisory and Professional Services

Our Digital Next Advisory approach can help you identify, prioritize, and implement the right transformation initiatives to create new edge experiences, get real-time insights from all your data, and modernize your IT to enable new opportunities.

HPE File Data Migration Service

Available in conveniently packaged offerings, **HPE File Data Migration Service** is designed to help facilitate the file and object migration process when migrating data to HPE File or Object Storage solutions and provides a fast and flexible way to migrate your organization's critical data, while minimizing the impact on your operations. This remotely delivered service is a fixed-scope, fixed-price engagement designed to help you accelerate the process of migration in a timely and cost-effective manner.

Using this service, you can leverage HPE's depth of technical capabilities combined with established HPE migration methodologies, optimally aligning with your organization's requirements, budgets, and timelines. HPE's standardized migration process, utilizing skilled HPE consultants, will leave you confident that even the most critical services are migrated in a controlled and safe manner, allowing you to focus on what's actually important in your organization.

- HPE QuickStart File Data Migration 10TB SVC (H0JD7A1)
- HPE File Data Migration 100TB SVC (H0JD9A1)
- HPE File Data Migration 200TB SVC (H1WU2A1) For more information:

HPE File Data Migration Service Datasheet: https://www.hpe.com/psnow/doc/4aa6-7249enw?jumpid=in_hpesitesearch

HPE Advisory & Professional Services: <https://www.hpe.com/us/en/services/consulting.html>



Service and Support

Operational Services

Take your IT operations to the next level with expertise and tools that can help save your staff time, manage complexity, and identify new ways to drive efficiency and effectiveness in your IT.

Recommended Services

HPE Services Tech Care*

Notes: *Minimum required level of support is 3yr Tech Care Basic

HPE Services Tech Care is the new operational service experience for HPE products. Tech Care goes beyond traditional support by providing access to product specific experts, an AI driven digital experience, and general technical guidance to not only reduce risk but constantly search for ways to do things better. HPE Services Tech Care has been reimagined from the ground up to support a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Services Tech Care is available in three response levels. Basic, which provides 9x5 business hour availability and a 2 hour response time. Essential which provides a 15 minute response time 24x7 for most enterprise level customers, and Critical which includes a 6 hour repair commitment where available and outage management response for severity 1 incidents.

<https://www.hpe.com/h20195/v2/Getdocument.aspx?docname=a00108652enw>

HPE Services Complete Care

HPE Services Complete Care is a modular, edge-to-cloud IT environment service that provides a holistic approach to optimizing your entire IT environment and achieving agreed upon IT outcomes and business goals through a personalized and customer-centric experience. All delivered by an assigned team of HPE Services Services experts. HPE Services Complete Care provides:

- A complete coverage approach -- edge to cloud
- An assigned HPE team
- Modular and fully personalized engagement
- Enhanced Incident Management experience with priority access
- Digitally enabled and AI Driven customer experience

For more information: <https://www.hpe.com/services/complecare>

HPE Lifecycle Services

Lifecycle Services provide a variety of options to help maintain your HPE systems and solutions at all stages of the product lifecycle. A few popular examples include:

- Installation and Startup Services: Various levels for physical installation and power on, remote access setup, installation and startup, and enhanced installation services with the operating system.
- HPE Service Credits: Access to prepaid services for flexibility to choose from a variety of specialized service activities, including assessments, performance maintenance reviews, firmware management, professional services, and operational best practices.

For a list of the most frequently purchased services using service credits, see the [Universal Service Credits Menu](#)

Other related services from HPE Services

HPE Education Services

Provides comprehensive training designed to expand the skills of your IT staff and keep them up to speed with the latest technologies.

Defective Media Retention

An option available with HPE Services Complete Care and HPE Services Tech Care and applies only to Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction.

Consult your HPE Sales Representative or Authorized Channel Partner of choice for any additional questions and support options



Service and Support

Parts and Materials

Hewlett Packard Enterprise will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product QuickSpecs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.

AI Powered and Digitally Enabled Support Experience

Achieve faster time to resolution with access to product-specific resources and expertise through a brand-new digital and data driven customer experience.

Sign into the new HPE Support Center experience, featuring streamlined self-serve case creation and management capabilities with inline knowledge recommendations. You will also find personalized task alerts, and powerful troubleshooting support through a new intelligent virtual agent with seamless transition when needed to a live support agent.

Learn more: <https://support.hpe.com/hpesc/public/home/signin>

HPE Support Services are sold by Hewlett Packard Enterprise and Hewlett Packard Enterprise Authorized Service Partners:

- Services for customers purchasing from HPE or an enterprise reseller are quoted using HPE order configuration tools.
- Customers purchasing from a commercial reseller can find HPE Support Services at <https://ssc.hpe.com/portal/site/ssc/>

Consume IT on your terms

HPE GreenLake brings the cloud experience directly to your apps and data wherever they are—the edge, colocations, or your data center. It delivers cloud services for on-premises IT infrastructure specifically tailored to your most demanding workloads. With a pay-per-use, scalable, point-and-click self-service experience that is managed for you, HPE GreenLake accelerates digital transformation in a distributed, edge-to-cloud world.

- Get faster time to market
- Save on TCO, align costs to business
- Scale quickly, meet unpredictable demand
- Simplify IT operations across your data centers and clouds

Managed services to run your IT operations

HPE GreenLake Management Services provide services that monitor, operate, and optimize your infrastructure and applications, delivered consistently and globally to give you unified control and let you focus on innovation.



Configuration Information

The HPE Alletra 4110 and HPE Apollo 4200 Gen10 Plus for Qumulo are configured as follows:

Step 1 (please use the HPE Qumulo OCA Wizard for configuring HPE Solutions with Qumulo)

Select nodes (required)

Notes: A minimum of four nodes are required to operate a HPE Qumulo cluster.

Description

SKU

HPE Alletra Storage Server 4110 38TB E3S All-NVMe 100Gb TAA-compliant Node for Qumulo	S1R90A
Notes: Optional, the user can select the 4416+ processor for optimal performance. SKU S1R90A includes 2 x HPE Ethernet 100Gb 2-port QSFP28 Adapter(P21112-B21). These network cards cannot be removed and no additional network cards can be added.	
HPE Alletra Storage Server 4110 153TB E3S All-NVMe 100Gb TAA-compliant Node for Qumulo	S1R91A
Notes: Optional, the user can select the 4416+ processor for optimal performance. SKU S1R91A includes 2 x HPE Ethernet 00Gb 2-port QSFP28 Adapter(P21112-B21). These network cards cannot be removed and no additional network cards can be added.	
HPE Alletra Storage Server 4110 20EDSFF Configure-to-order Node for Qumulo	S1R92A
Notes: Optional, the user can select the 4416+ processor for optimal performance. This SKU is used to build the 307TB configuration and also with the 38TB and 153TB when options are selected	
HPE Apollo 4200 Gen10 Plus 36TB 25Gb TAA-compliant Node for Qumulo	S0D89A
Notes: Includes 1 x HPE Ethernet 10/25Gb 2-ports. This network card cannot be removed and no additional network cards added.	
HPE Apollo 4200 Gen10 Plus 36TB Configure-to-order Node for Qumulo	S0D90A
Notes: Select network card in Step 1a and Smart Array Controller in Step 1c below	
HPE Apollo 4200 Gen10 Plus 90TB 25Gb TAA-compliant Node for Qumulo	S0D91A
Notes: Includes 1 x HPE Ethernet 10/25Gb 2-ports. This network card cannot be removed and no additional network cards added.	
HPE Apollo 4200 Gen10 Plus 90TB Configure-to-order Node for Qumulo	S0D92A
Notes: Select network card in Step 1a and Smart Array Controller in Step 1c below	
HPE Apollo 4200 Gen10 Plus 240TB 100Gb Hybrid TAA-compliant Node for Qumulo	S0D93A
Notes: Includes 1 x HPE Ethernet 100Gb 2-ports. This network card cannot be removed and no additional network cards added	
HPE Apollo 4200 Gen10 Plus 480TB 100Gb Hybrid TAA-compliant Node for Qumulo	S0D94A
Notes: Includes 1 x HPE Ethernet 100Gb 2-ports. This network card cannot be removed and no additional network cards added	
HPE Apollo 4200 Gen10 Plus 240TB Configure-to-order Node for Qumulo	S0D95A
Notes: Select network card in Step 1a (only 10/25Gb 2-ports options with Archive) and Smart Array Controller in Step 1c below	
HPE Apollo 4200 Gen10 Plus 240TB 25Gb Archive TAA-compliant Node for Qumulo	S0D96A
Notes: Includes 1 x HPE Ethernet 10/25Gb 2-ports. This network card cannot be removed and no additional network cards added.	
HPE Apollo 4200 Gen10 Plus 480TB 25Gb Archive TAA-compliant Node for Qumulo	S0D97A
Notes: Includes 1 x HPE Ethernet 10/25Gb 2-ports. This network card cannot be removed and no additional network cards added.	



Configuration information

Description

HPE Apollo 4200 Gen10 Plus 480TB Configure-to-order Node for Qumulo

SKU

S0D98A

Notes: Select network card in Step 1a (only 10/25Gb 2-ports options with Archive) and Smart Array Controller in Step 1c below

Step 1a

Select Network Adapter (only for A4200G10 Plus Configure-to-order node)

Description

Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE

SKU

P26262-B21

Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE

P08443-B21

Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE

P21112-B21

Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE

P25960-B21

Step 1b

Select HPE Smart Array Controller (only for A4200G10 Plus Configure-to-order node)

Description

HPE Smart Array E208i-a SR Gen10 (8 Internal Lanes/No Cache) 12G SAS Modular Controller

SKU

804326-B21

HPE Smart Array P816i-a SR Gen10 (16 Internal Lanes/4GB Cache/SmartCache) 12G SAS Modular Controller

804338-B21

HPE Smart Array P408i-a SR Gen10 (8 Internal Lanes/2GB Cache) 12G SAS Modular Controller

804331-B21

Step 2

Select Qumulo Software Subscription and Support E-LTU (required)

Description

Qumulo Active Tier 1TB 1-year Subscription Mission Q Services and Support E-LTU

SKU

ROG81AAE

Qumulo Active Tier 1TB 3-year Subscription Mission Q Services and Support E-LTU

ROG83AAE

Qumulo Active Tier 1TB 5-year Subscription Mission Q Services and Support E-LTU

ROG85AAE

Notes:

- Number of 1TB E-LTUs ordered must match raw capacity of each HPE Node for Qumulo that the E-LTU is installed on. For example, one Apollo 4200 240TB Hybrid Node for Qumulo (S0D93A) requires quantity 240 of ROG81AAE or ROG83AAE or ROG85AAE.
- E-LTUs ROG81AAE or ROG83AAE or ROG85AAE can only be installed on the All-NVMe and Hybrid Flash models (see tables on p.5-6)

Qumulo General Purpose Tier 1TB 1-year Subscription Mission Q Services and Support E-LTU

ROW31AAE

Qumulo General Purpose Tier 1TB 3-year Subscription Mission Q Services and Support E-LTU

ROW33AAE

Qumulo General Purpose Tier 1TB 5-year Subscription Mission Q Services and Support E-LTU

ROW35AAE

Notes:

- Number of 1TB E-LTUs ordered must match raw capacity of each HPE Node for Qumulo that the E-LTU is installed on. For example, one Apollo 4200 480TB Qumulo Archive node (S0D97A) requires quantity 480 of ROW31AAE or ROW33AAE or ROW35AAE.
- E-LTUs ROW31AAE or ROW33AAE or ROW35AAE can only be installed on certified and approved HPE Apollo 4200 Gen10 Plus nodes for Qumulo.



Configuration information

The Qumulo Customer Success Program is available as part of the Qumulo Subscription. You can contact Qumulo by telephone, Slack, email, or the web site 24x7 to report software or hardware issues. The Qumulo Customer Success team will help you to diagnose and resolve technical problems with your Qumulo cluster.

For more information: <https://qumulo.com/terms-hub/support-offerings/#>

Step 3

Select On-Site SSD and HDD Spares (recommended)

Notes: To minimize time to repair for defective SSDs or HDDs it is highly recommended to keep spares of these parts on site. The following formula should be used to determine the number of spares to have on site dependent on the number of nodes installed.

- For HPE SKU nodes for Qumulo : S0D89A,S0D91A,S0D93A,S0D94A,S0D96A,S0D97A,S0D90A,S0D92A,S0D95A and S0D98A,
 - o 4 to 10 nodes of installed – 1 SSD of each type in node and 2 HDDs for the entire cluster
 - o 11 to 20 nodes installed– 1 SSDs of each type in node and 3 HDDs for the entire cluster
 - o 21 to 50 nodes installed – 1 SSDs of each type in node and 4 HDDs for the entire cluster
- For HPE SKU nodes for Qumulo : S1R90A, S1R91A and S1R92A
 - o 4 to 10 nodes of installed –1x Data drive for the entire cluster
 - o 11 to 20 nodes installed–2x Data drive for the entire cluster
 - o > 20 nodes installed –3x Data drive for the entire cluster

S0D89A and S0D90A – Apollo 4200 Gen10 Plus 36TB Node for Qumulo SSD/HDD spares

Description	SKU
HPE 240GB SATA 6G Read Intensive M.2 Multi Vendor SSD	P47817-K21
HPE 800GB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static V2 Multi Vendor SSD	P64999-K21
HPE 4TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD	861683-K21

S0D91A, S0D93A, S0D96A and S0D92A – Apollo 4200 Gen10 Plus 90TB and 240TB Node for Qumulo SSD/HDD spares

HPE 240GB SATA 6G Read Intensive M.2 Multi Vendor SSD	P47817-K21
HPE 800GB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static V2 Multi Vendor SSD	P64999-K21
HPE 10TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty 512e ISE Multi Vendor HDD	P53557-K21

S0D94A, S0D97A and S0D98A – Apollo 4200 Gen10 Plus 480TB Node for Qumulo SSD/HDD spares

HPE 240GB SATA 6G Read Intensive M.2 Multi Vendor SSD	P47817-K21
HPE 1.6TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static V2 Multi Vendor SSD	P65007-K21
HPE 20TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD	P53554-K21

S1R90A – HPE Alletra 4110 38TB E3S All-NVMe 100Gb TAA-compliant Node for Qumulo NVMe spare

HPE 3.84TB NVMe Gen5 High Performance Read Intensive E3S EC1 EDSFF SPDM CM7 SSD	P61179-K21
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S1R91A – HPE Alletra 4110 153TB E3S All-NVMe 100Gb TAA-compliant Node for Qumulo NVMe spare

HPE 7.68TB NVMe Gen5 High Performance Read Intensive E3S EC1 EDSFF SPDM CM7 SSD	P61183-K21
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S1R92A – HPE Alletra 4110 20EDSFF Configure-to-order Node for Qumulo NVMe spare

HPE 15.36TB NVMe Gen5 High Performance Read Intensive E3S EC1 EDSFF SPDM CM7 SSD	P61187-K21
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Configuration information

Step 4

Select Network Cables and Transceivers (optional)

Description	SKU
HPE 100Gb QSFP28 to QSFP28 3m Direct Attach Copper Cable	845406-B21
HPE 100Gb QSFP28 to QSFP28 5m Direct Attach Copper Cable	845408-B21
HPE 100GbE QSFP28 SR4 100m Transceiver	Q2F19A
HPE 100GbE QSFP28 LC DR1 500m 1-pack Transceiver	R8M61A
HPE 100Gb QSFP28 Bidirectional Transceiver	845972-B21
HPE 100Gb QSFP28 to QSFP28 7m Active Optical Cable	845410-B21
HPE 100Gb QSFP28 to QSFP28 15m Active Optical Cable	845414-B21
HPE 100Gb QSFP28 to QSFP28 0.5m Direct Attach Copper Cable	R8M59A
HPE Networking X240 100G QSFP28 3m DAC Cable	JL272A
HPE Networking X240 100G QSFP28 1m DAC Cable	JL271A
HPE 25Gb SFP28 to SFP28 0.5m Direct Attach Copper Cable	R4G18A
HPE 25Gb SFP28 to SFP28 1m Direct Attach Copper Cable	R4G19A
HPE 25Gb SFP28 to SFP28 3m Direct Attach Copper Cable	844477-B21

Step 5

Select Top-of-Rack HPE Aruba Networking Ethernet Switches (recommended: qty=2 for enterprise HA environment)

HPE Aruba Networking Ethernet switch family offers industry-leading, high-bandwidth and the lowest-latency for a cost-effective solution for Server and Storage connectivity. With cost-effective deployment options, 100GbE and beyond connectivity, HPE Aruba Networking fabrics allows for implementing significant speed and architecture upgrades over time.

HPE Aruba Networking switches available with following models:

Description	SKU
HPE Networking Comware Switch 48SFP28 8QSFP28 5945	JQ074A
HPE Networking Comware Switch 2-slot 5945	JQ075A
HPE Networking Comware Switch 32QSFP28 5945	JQ077A

Step 6

Select Qumulo Installation and Advanced Training Service (required)

Description	SKU
Qumulo Installation and Advanced Training Service per Day	ROG89AAE

Qumulo will evaluate your site to make sure that it's ready, install the Qumulo software on the HPE Apollo 4200 Gen10 Plus and hold an onboarding orientation session. Also, trainers will teach the team all about administering an HPE Qumulo cluster. The teachers are experienced storage professionals with a practical, real-world approach. They'll make sure that everyone leaves the class with the skills they need for long-term success with your HPE Qumulo cluster.

Notes: ROG89AAE is required for each separate HPE Qumulo cluster to be installed. Up to 10 nodes per cluster can be installed for each ROG89AAE sku purchased. For every additional 10 nodes installed in a single cluster an additional ROG89AAE is required. Each ROG89AAE SKU purchased comes with one single day of advanced training service. Click [here](#) for further detail.



Configuration information

Step 7

Select Installation Service for HPE Apollo 4200 Gen10 Plus nodes for Qumulo (required)

Description

HPE Alletra 4xx0 Installation service

SKU
HA113A1#V1L

HPE Apollo 2000/4200 Installation Service

HA113A1#5BY or
UM857E

Notes: Qty of 1 x HA113A1#5BY or UM857E per each HPE Apollo 4200 node for Qumulo installed

Step 8

Select HPE M-series installation service (recommended option if M-series switch is ordered)

Description

HPE StoreFabric M-series Eth Startup SVC

SKU
HA114A1#5SE

HPE M-series Ethernet Switch Installation and Startup Service

H6SV4E

Step 9

Select HPE Support for the HPE nodes for Qumulo (required with DMR: Defective Media Retention)

HPE Services provides a comprehensive portfolio of support services including Tech Care, Tech Care and Complete Care including options for Next Business Day, 24x7 and 6 hour call-to-repair.

For additional information, see the links below.

- [Tech Care datasheet](#)
- [Tech Care datasheet](#)
- [Complete Care](#)

Notes: HPE requires aligning the term of the hardware support with the term of the software support. Tech Care Call to Repair with DMR is the recommended service to purchase for HPE Nodes for Qumulo.

Qumulo software renewal and co-term options for installed clusters

Description

Qumulo Active Tier 1TB 1-year Subscription Mission Q Services and Support Renewal E-LTU

SKU
ROG82AAE

Qumulo Active Tier 1TB 3-year Subscription Mission Q Services and Support Renewal E-LTU

ROG84AAE

Qumulo Active Tier 1TB 5-year Subscription Mission Q Services and Support Renewal E-LTU

ROG86AAE

Notes:

- The SKUs above are to renew the Qumulo software subscription and support for the following models;
 - o HPE Alletra 4110 All-NVMe Flash: 38TB, 153TB and 307TB
 - o HPE DL325 Gen10 Plus All-NVMe Flash: 34TB, 145TB and 291TB
 - o HPE Apollo Gen10 Plus Hybrid: 36TB, 90TB, 240TB and 480TB
 - o HPE Apollo Gen10 Hybrid: 36TB, 90TB and 192TB
 - o HPE Apollo Gen9 Hybrid: 90TB and 180TB
- The number of 1TB E-LTUs ordered must match the raw capacity of each node that the E-LTU is installed on. As an example one Apollo 4200 Gen10 192TB Node requires 192 x ROG82AAE or ROG84AAE or ROG86AAE depending on renewal term desired.



Configuration information

Description

	SKU
Qumulo General Purpose Tier 1TB 1-year Subscription Mission Q Services and Support Renewal E-LTU	ROW32AAE
Qumulo General Purpose Tier 1TB 3-year Subscription Mission Q Services and Support Renewal E-LTU	ROW34AAE
Qumulo General Purpose Tier 1TB 5-year Subscription Mission Q Services and Support Renewal E-LTU	ROW36AAE

Notes:

- The SKUs above are to renew the Qumulo software subscription and support for the following models;
 - o HPE Apollo Gen10 Plus Archive: 240TB and 480TB
 - o HPE Apollo Gen10 Archive: 336TB
 - o HPE Apollo Gen9 Archive: 288TB
- The number of 1TB E-LTUs ordered must match raw capacity of each Archive node that the E-LTU is installed on. As an example one Apollo 4200 336TB Archive Node requires 336 x ROW32AAE or ROW34AAE or ROW36AAE depending on renewal term desired.

Qumulo Software Hardware Assurance Subscription and Support 1-month Co-term E-LTU

Description

	SKU
Qumulo Active Tier 1TB 1-month Subscription Mission Q Services and Support Renewal E-LTU	ROG88AAE

Notes: This 1-month SKUs is used to co-terminate Qumulo Active Tier (Hybrid & All-NVMe Flash) software subscription license terms on existing models (see list from 1-4 above) when a new node is added to the cluster. As an example, you purchased 4 x HPE Apollo 4200 Gen10 Plus 240TB Hybrid nodes for Qumulo with a 36 month Qumulo Active Tier (Hybrid) software subscription. Six months later you purchase another HPE Apollo 4200 Gen10 Plus 240TB Hybrid node with 36 month Qumulo Active Tier (Hybrid) subscriptions to add to original 4 node cluster. The cluster now has the 4 original nodes with 30 months of Qumulo subscriptions left and 1 node with 36 months of Qumulo subscriptions. You would therefore need to bring all Qumulo subscriptions on the 4 original 240TB nodes back up 36 months, by purchasing 6 x 1TB Active Tier 1-month subscription (ROG88AAE) for each of the original four Apollo 4200 Gen10 Plus 4 x 240TB Qumulo Hybrid nodes. Please refer to the new OCA Node Expansion Wizard for further configurations.

Qumulo General Purpose Tier 1TB 1-month Subscription Mission Q Services and Support Renewal E-LTU	R6V53AAE
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Notes: This 1-month SKU is used to co-terminate Qumulo General Purpose Tier (Archive) software subscription license terms on existing models (see list from A-C above) when a new node is added to the cluster. As an example, you purchased 4 x HPE Apollo 4200 Gen10 Plus 480TB Qumulo Archive nodes with a 36 month Qumulo General Purpose Tier (Archive) software subscription. Six months later you purchase another HPE Apollo 4200 Plus 480TB Hybrid node with 36 month Qumulo General Purpose Tier (Archive) subscriptions to add to original 4 node cluster. The cluster now has the 4 original nodes with 30 months of Qumulo subscriptions and 1 node with 36 months of Qumulo subscriptions. You would therefore need to bring all Qumulo subscriptions on the 4 original 480TB nodes back up to 36 months, by purchasing 6 x 1TB General Purpose Tier (Archive) 1-month subscription (R6V53AAE) for each of the original 4 x 480TB Qumulo Archive nodes. Please refer to the new OCA Node Expansion Wizard for further configurations.

Qumulo Health Check Service

Description

Qumulo Systems Health Check Service	SKU ROG90AAE
-------------------------------------	------------------------

Notes: A periodic evaluation of your HPE Solutions with Qumulo deployment ensures that you're getting the most out of your investment. Qumulo can perform a thorough systems health check that will let you know how well your cluster is performing now and the steps you can take to make that performance even better. Qumulo consultants will implement those improvements, and demonstrate the results.



Configuration information

Qumulo for cloud deployments

Moving from on-prem to a hybrid-cloud architecture allows organizations to focus on their core competencies, accelerate innovation, increase data security, build solutions, and reduce costs. Yet, most of the time it's the file storage which remains the last piece of infrastructure on-prem, forcing users to choose between rewriting applications and workflows, and continuing to manage the on-prem infrastructure.

Qumulo is different. How? The enterprise-ready file system runs the same architecture both on-prem and in the cloud, empowering users to run workloads where it makes the most sense whether that's on-prem, in the cloud or as a hybrid-cloud architecture. Qumulo eliminates the need to re-engineer business-critical workflows and applications while simultaneously reducing TCO, enabling users to take advantage of the hundreds of innovative services wherever workloads run.

Qumulo for Amazon Web Services

Description

	SKU
Qumulo Software for Amazon Web Services 1TB 1yr Subscription and Support E-LTU	R3K09AAE
Qumulo Software for Amazon Web Services 1TB 2yr Subscription and Support E-LTU	R3K10AAE
Qumulo Software for Amazon Web Services 1TB 3yr Subscription and Support E-LTU	R3K11AAE

Qumulo for Google Cloud Platform

Description

	SKU
Qumulo Software for Google Cloud Platform 1TB 1yr Subscription and Support E-LTU	R4D69AAE
Qumulo Software for Google Cloud Platform 1TB 2yr Subscription and Support E-LTU	R4D70AAE
Qumulo Software for Google Cloud Platform 1TB 3yr Subscription and Support E-LTU	R4D71AAE



Technical Specifications

HPE Alletra 4110 Nodes for Qumulo

For more information on Alletra 4110, see the [QuickSpec](#)

- **Dimensions (L x W x D)**
1.69 x 17.11 x 28.85 in (4.29 x 43.46 x 73.27 mm)
 - **Weight (approximate)**
Maximum: 52.93 lb (24 kg)
-

Input Requirements(per power supply)

Range Line Voltage

- **200 to 240 VAC**
-

System Inlet Temperature

- **Standard Operating Support**
10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit and rate of change may be limited by the type and number of options installed.
System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F).
For approved hardware configurations, the supported system inlet range is extended to be: 5° to 10°C (41° to 50°F) and 35° to 40°C (95° to 104°F) at sea level with an altitude derating of 1.0°C per every 175 m (1.8°F per every 574 ft) above 900m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL: <http://www.hpe.com/servers/ashrae>
 - **Extended Ambient Operating Support**
For approved hardware configurations, the supported system inlet range is extended to be: 40° to 45°C (104° to 113°F) at sea level with an altitude derating of 1.0°C per every 125 m (1.8°F per every 410 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system require the High Performance Fan Kit (P26477-B21) and are listed at the URL: <http://www.hpe.com/servers/ashrae>
System performance may be reduced if operating in the extended ambient operating range or with a fan fault.
-

System performance may be reduced if operating in the extended ambient operating range or with a fan fault.

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

Relative Humidity (non-condensing)

- **Operating**
8% to 90% - Relative humidity (Rh), 28°C maximum wet bulb temperature, non-condensing.
 - **Non-operating**
5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
-

Altitude

- **Operating**
3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
 - **Non-operating**
9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
-



Technical Specifications

Emissions Classification (EMC)

To view the regulatory information for your product, view the Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products, available at the Hewlett Packard Enterprise Support Center:

<http://www.hpe.com/support/Safety-Compliance-EnterpriseProducts>

Acoustic Noise

Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109). The listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels. Please have your HPE representative provide information from the HPE EMESC website for further technical details regarding the configurations listed below.

Test case	1	2	3	4	5
idle					
LWAd	5.1 B	5.4B	5.4 B	5.1 B	5.1 B
LpAm	35 dBA	38 dBA	39 dBA	36 dBA	35 dBA
Operating					
LWAd	5.9 B	5.6 B	6.1 B	5.1 B	5.6 B
LpAm	45 dBA	41 dBA	47 dBA	34 dBA	40 dBA

Notes: Acoustics levels presented here are generated by the test configuration only. Acoustics levels will vary depending on system configuration. Values are subject to change without notification and are for reference only.

HPE Apollo 4200 Gen10 Plus Nodes for Qumulo

For more information on Apollo 4200 Gen10 Plus, see the [QuickSpec](#)

- **Dimensions** (L x W x D)
3.44 x 17.63 x 33.00 in (87.5 x 448.0 x 837.90 mm) Apollo 4200 Gen10 Plus based nodes
Notes: Dimensions without Bezel.
- **Weight** (approximate)
Maximum:84.88 lb (38.6 kg)

Input Requirements(per power supply)

Range Line Voltage

- 100 to 120 VAC
- 200 to 240 VAC

BTU Rating

Maximum

- For 800W Power Supply: 3207 BTU/hr (at 100 VAC), 3071 BTU/hr (at 200 VAC), 3112 BTU/hr (at 240 VAC) for China Only.
- For 1600W Power Supply: 1600W (at 200 to 240 1VAC), 1600W (at 240 VDC) input for China only



Technical Specifications

Power Supply Output(per power supply)

- **Rated Steady-State Power**
For 1600W Power Supply: 1600W (at 240 VAC), 1600W (at 240 VDC) for China only
For 800W Power Supply: 800W (at 100 VAC), 800W (at 240 VAC).
- **Maximum Peak Power**
For 1600W Power Supply: 1600W (at 200 to 240 1VAC),

System Inlet Temperature

- **Standard Operating Support**
10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 20°C/hr (36°F/hr). The upper limit and rate of change may be limited by the type and number of options installed. System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F).
- **Extended Ambient Operating Support**
For approved hardware configurations, the supported system inlet range is extended to be: 40° to 45°C (104° to 113°F) at sea level with an altitude derating of 1.0°C per every 125 m (1.8°F per every 410 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL: <http://www.hpe.com/servers/ashrae>

System performance may be reduced if operating in the extended ambient operating range or with a fan fault.

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

Relative Humidity

- **Operating**
8% to 90% - Relative humidity (Rh), 28°C maximum wet bulb temperature, non-condensing.
- **Non-operating**
5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing

Altitude

- **Operating**
3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
 - **Non-operating**
9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
-



Technical Specifications

Acoustic Noise

Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109). The listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels. Please have your HPE representative provide information from the HPE EMESC website for further technical details regarding the configurations listed below.

Acoustic Noise	
Idle	
L WAd	5.9 B Maximum
L pAm	35 dBA Maximum
Operating	
L WAd	6.0 B Maximum
L pAm	36 dBA Maximum

Notes: Acoustics levels presented here are generated by the test configuration only. Acoustics levels will vary depending on system configuration. Values are subject to change without notification and are for reference only.

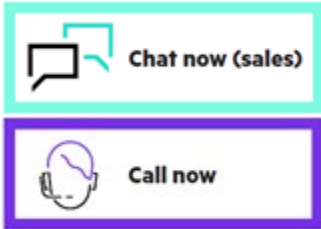


Summary of Changes

Date	Version History	Action	Description of Change
19-Feb-2024	Version 30	Changed	Networking product names were updated.
05-Feb-2024	Version 29	Changed	Configuration information section was updated HPE Services Rebranding
18-Dec-2023	Version 28	Changed	Overview, Standard Features and Configuration Information sections were updated.
21-Aug-2023	Version 27	Changed	Overview, Standard Features, Service and Support and Configuration Information sections were updated.
24-Jul-2023	Version 26	Changed	Service and Support section was updated
10-Jul-2023	Version 25	Changed	Overview, Standard Features, Configuration Information, Service and Support Technical Specifications sections were updated.
15-May-2023	Version 24	Changed	Overview, Standard Features, Configuration Information, Technical Specifications sections were updated. EoL SKUs removed
03-Apr-2023	Version 23	Changed	Overview, Standard Features, Configuration Information, Technical Specifications sections were updated. EoL HPE Apollo 4200 Gen10 for Qumulo
06-Mar-2023	Version 22	Changed	Standard Features section was updated
05-Dec-2022	Version 21	Changed	Overview, Standard Features, Configuration Information, Technical Specifications sections were updated.
02-May-2022	Version 20	Changed	Standard Features, Service and Support and Configuration Information sections were updated.
07-Mar-2022	Version 19	Changed	SKU Descriptions were updated
17-Jan-2022	Version 18	Changed	Configuration Information section was updated.
04-Oct-2021	Version 17	Changed	Spare drive update
15-Sep-2021	Version 16	Changed	Service and Support and Configuration Information sections were updated.
02-Aug-2021	Version 15	Changed	Overview and Configuration Information sections were updated.
06-Jul-2021	Version 14	Changed	HPE ProLiant DL325 Gen10 Plus 291TB All-NVMe Flash Qumulo nodes added
06-Apr-2021	Version 13	Changed	Update the AMD processor description, added 7402P
07-Dec-2020	Version 12	Changed	HPE ProLiant DL325 Gen10 Plus 34TB and 145TB Qumulo nodes added
02-Nov-2020	Version 11	Changed	Update spare drives on the 90TB SKU
06-Jul-2020	Version 10	Changed	Overview, Standard Features, Configuration Information, Service and Support Technical Specifications sections were updated.
06-Jan-2020	Version 9	Changed	Standard Features and Configuration Information sections were updated.
02-Dec-2019	Version 8	Changed	Overview, Standard Features, Configuration Information and Service and Support sections were updated.
04-Nov-2019	Version 7	Changed	Overview, Standard Features, Configuration Information and Service and Support sections were updated.
05-Aug-2019	Version 6	Changed	Overview, Standard Features, Configuration Information and Service and Support sections were updated.
03-Jun-2019	Version 5	Changed	Configuration Information section was updated.
04-Mar-2019	Version 4	Changed	Service and Support Section was updated.
05-Nov-2018	Version 3	Changed	Configuration Information section was updated.
01-Oct-2018	Version 2	Changed	Overview, Configuration Information, Service and Support and Technical Specifications sections were updated. SKUs were added.
04-Jun-2018	Version 1	New	New QuickSpecs

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