Shape the Future of QuickSpecs - Your Input Matters

HPE GreenLake for File Storage MP QuickSpecs

Enterprise file storage at scale

Data is the life-force of the modern enterprise—it powers the insights, innovation, and competitive advantage that move your business forward, faster. But to accelerate your data-first modernization and be AI ready, you need to eliminate the storage silos, tiered data pipelines, scale-out limitations, and management complexity—across edge-to-cloud—that slow you down. HPE GreenLake for File Storage provides a single, flexible solution to achieve faster time to AI insights for competitive advantage. It offers enterprise performance at scale to accelerate AI and other data-intensive applications with a resilient, shared-everything architecture designed to scale to exabyte capacities; a simpler, intuitive cloud operational experience with streamlined setup and file data management, a global namespace for collaboration, and rich data services; enhanced efficiency at scale that meets the demands of AI workloads with higher ROI.

Overview

HPE GreenLake for File Storage solution consists of three major components,

- Disaggregated storage based on HPE Alletra Storage MP Common Storage Architecture offered in either standard or high-density models - Compute, JBOF, and Switches
- Scale-out file services software running on HPE Alletra Storage MP
- HPE GreenLake Cloud Platform that allows the file service to be managed from a managed public cloud and services that provide call-home, remote support, and telemetry data collection services

What's new

- Ultra-efficient all-NVME with inline similarity data reduction (de-deduplication and compression) even for previously compacted data
- Acceleration of Artificial Intelligence (AI), Machine Learning (ML) and Deep Learning (DL) training and inferencing in
  conjunction with the consolidation of other workloads
- End-to-end HPE GreenLake experience for unstructured file data management

HPE GreenLake for File Storage
(Includes HPE Alletra Storage MP Compute, HPE Alletra Storage MPJBOF, HPE Fabric switches)

Enterprise performance at scale

- HPE GreenLake for File Storage is a next generation scale-out file storage system that is fast enough to meet the needs of the most demanding legacy and modern applications using a disaggregated-shared-everything (DASE) architecture.
- The solution can scale to 100's of petabytes of effective capacity, without interrupting customer applications attached to the system. This eliminates the need to coordinate expansion around expensive maintenance windows.
- The performance, and capacity can be scaled by adding modular compute, data, and storage fabric building blocks.
- Highly resilient architecture designed for exabyte scale without degrading performance.

Built for Cloud

- HPE GreenLake for File Storage provides a superior cloud resident management for file share vending and lifecycle management via HPE GreenLake Cloud Platform
- 100% cloud-managed infrastructure means you can globally monitor and manage your entire fleet of file storage from a single SaaS-based cloud console that's accessible from any location, on any device - so managing hundreds of systems across geographies is as simple as managing one.
- A simplified common experience providing a single pane of glass across all HPE infrastructure.
- Rich & granular metrics to monitor the Capacity usage & Performance at File share and File Server level.
- Seamless upgrade experience through cloud-based software catalog
- Remote telemetry and call home data management providing great pro-active support experience.
- New data services instantly become available to you. Data plane software upgrades are non-disruptive and intelligently matched to a given system.

Productivity with faster time to insights

- HPE GreenLake for File Storage provides more granular insights across all the data in a single global namespace in real time providing competitive advantage to make business decisions faster.
- Faster times to insights and discovery unlock more value from all your data for competitive advantage.
- Increased productivity of data scientists and Line of Business (LOB) application owners with simple setup
- Superior file data infrastructure delivers high ROI from capital investments by providing SMB and NFS multiprotocol support without performance penalties. In addition, new native SQL query language interface to the File system provides accelerated access to file meta-data which are an order of magnitude faster than a traditional NAS server.

Absolute Resiliency

- Consume HPE GreenLake for File Storage your way with a choice of capex/subscription or pay-per-use models.
- N+4 erasure encoding allows for 4 simultaneous drive failures plus additional protection through intra-drive parity.
- FIPS-certified encryption provides data at rest and over-the-wire protection. Secure data shredding is built in.
- Native application-consistent snapshots and replication
- Redundant, hot-swap components including controllers, power supplies, SSDs, and IO cards, that together deliver enterprise grade high-availability with 99.9999% (6-nines) of uptime.

Key Specifications

	Standard-density modules	High-density modules
Cbox (Compute)	– 2U 2-node standard depth chassis – 1 32-core CPU, 256 GB memory – 2 100 Gb ports per node – CBox (2-nodes) capable of: • 27 GB/s read, 4.7 GB/s write • 139 K IOPS	– 2U 4-node standard depth chassis – 2 16-core CPUs, 256 GB memory – 2 100Gb ports per node – CBox (4-nodes) capable of: • 60 GB/s read, 8.1 GB/s write • 240 K IOPS
Dbox (Storage)	– 2U standard depth chassis with 4 100 Gb ports. – Configured as: 154 TB/308 TB JBOF: • 43 GB/s read, 3.2 GB/s write • 490 K IOPS – 550TB JBOF: • 43GB/s read, 4.5GB/s write • 490K IOPS	– 1U extended depth chassis with 8 100 Gb ports. – Configured as: 338 TB/1352 TB JBOF: • 60 GB/s read, 9.0 GB/s write • 600 K IOPS
Switch (Fabric)	– 1U HPE Aruba Networking CX 8325 • 32 100 Gb ports • 750 GB/s throughput	– 2U NVIDIA Spectrum (SN4600CM) • 64 100 Gb ports • 1,500 GB/s throughput
NVMe SSDs per Chassis	20 (w/ 4 slots dedicated to persistent SCM NVME Drives)	22 (w/ 8 slots dedicated to persistent SCM NVME Drives)
Raw capacity	2 switches: 307 TB to 3388 TB 10 switches: 15PB+	2 switches: 338 TB to 4398 TB 10 switches: 16PB+
Usable capacity	2 switches: 220 TB to 3007 TB 10 switches: 13PB+	2 switches: 246 TB to 3888 TB 10 switches: 14PB+
Effective capacity	2 switches 460 TB to 6000+TB (Similarity reduction of 2:1 used for basic sizing) 10 switches 460 TB to 26+PB (Similarity reduction of 2:1 used for basic sizing)	2 switches 676 TB to 7000+TB (Similarity reduction of 2:1 used for basic sizing) 10 switches 676 TB to 28+PB (Similarity reduction of 2:1 used for basic sizing)
Max # of Enclosures (based on storage fabric configuration)	2-switches – 14 10 switches, 4 leafs – 2 uplinks - 56 boxes, 7 Cboxes, 49 Dboxes – 4 uplinks - 52 boxes, 6 Cboxes, 46 Dboxes – 6 uplinks - 48 boxes, 6 Cboxes, 42 Dboxes – 8 Uplinks - 33 boxes, 7 Cboxes, 26 Dboxes	2-switches – 14 10 switches, 4 leafs – 4 uplinks – 56 boxes, 7 Cboxes, 49 Dboxes – 8 Uplinks - 33 boxes, 7 Cboxes, 26 Dboxes – 12 uplinks - 48 boxes, 6 Cboxes, 42 Dboxes – 16 uplinks - 64 boxes, 8 Cboxes, 58 Dboxes
Drive	7.68/15.36/30.72 TB NVMe SFF SSD (TLC)	15.36/ 61.44 TB NVMe SFF SSD (QLC)
Host Connectivity	10/25/40/100 Gb Ethernet	10/25/40/100 Gb Ethernet

Host Client Connectivity - NFS, SMB clients

Microsoft® Windows® Server and Microsoft® Hyper-V™ | VMware ESX and ESXi | Red Hat® Enterprise Linux® | SUSE® Linux Enterprise Server (SLES)

For the latest information refer to Single Point of Connectivity Knowledge for HPE Storage Products (SPOCK): http://www.hpe.com/storage/spock

Warranty

HPE GreenLake for File Storage has 1 year, parts only warranty. The warranty on all HPE GreenLake for File Storage Solid State Drives (SSD) is 1 year, parts only, and offers unconditional replacement in case of drive failure, media wear-out, or both. Hewlett Packard Enterprise warrants only that the software media will be free of physical defects for a period of ninety (90) days from delivery. For more information about Hewlett Packard Enterprise's Global Limited Warranty and Technical Support, visit: http://www.hpe.com/storage/warranty

Notes:

- For hardware warranty claims, defective part must be received before replacement parts are shipped
- Warranty is provided by HPE GreenLake for File Storage
- Link to HPE Global Limited Warranty and Technical Support

Supportability

HPE GreenLake for File Storage is an OEM of the VAST operating system that supports the primary features of DataStore and DataSpace. By default, HPE GreenLake for File Storage does not support the following:

- DataEngine
- InsightEngine
- SyncEngine
- DataBase
- Block storage protocol
- S3

Service and Support

Support is required for all HPE GreenLake for File Storage. Support SKUs provide up to five years of 24x7 telephone support for the arrays and hardware components (Including SSDs reaching the write wear limit).

HPE Services Tech Care is the operational service experience that goes beyond traditional support by providing access to product specific experts, an AI driven digital experience, and general technical guidance. 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.

Additional recommended HPE Services to help you accelerate your business outcomes:

- HPE Edge-to-Cloud Transformation Maturity (workshop)
- HPE Service Credits
- HPE Storage Networking
- HPE Accelerated Migration
- HPE Asset Upcycling
- HPE Data Migration Services
- HPE Data Sanitization Service
- HPE Security Risk and Compliance

Notes: Support contract is mandatory for all HPE GreenLake for File Storage products

Data Services Support with HPE GreenLake for File Storage MP

A valid subscription enables the following enterprise-level support:

- 24x7 telephone support for all entitled services available through HPE Data Services
- Direct connection to expert-level support within minutes
- Guidance through troubleshooting and configuration of available services and interoperability within your cloud and/or on-premises environment.

For a summary of HPE GreenLake for File Storage service and support features, see the following Tech Care addendum: https://www.hpe.com/psnow/doc/a50003571enw

Proactive Support Manager Services

For any organization with a sizeable deployment of HPE GreenLake for File Storage or business-critical use cases, the assigned HPE Proactive Support Manager (HPE PSM) Service can be enlisted to provide management and support services that are tailored to fit the exact needs of the organization. The world-class HPE PSM team includes some of the most experienced and reliable storage experts in the industry.

HPE PSM services are strongly recommended for your HPE GreenLake for File Storage product and experience. For a summary of the PSM benefits, see the following data sheet: https://www.hpe.com/psnow/doc/a00030176enw

HPE Services Tech Care

HPE Tech Care Service is the operational support service experience for HPE products. The service 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 Tech Care Service delivers a customer-centric, AI driven, and digitally enabled customer experience to move your business forward.

HPE Services Tech Care is available with the following service level options for HPE GreenLake for File Storage MP:

- Essential, which provides 24x7 onsite parts exchange

Regardless of the service level, customers have direct access to Level 3 HPE GreenLake for File Storage support engineers by telephone 24x7.
https://www.hpe.com/us/en/services/tech-care.html

HPE Lifecycle Services

HPE 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:

- Lifecycle Install 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 Firmware Update Analysis Service: Recommendations for firmware revision levels for selected HPE products, taking into account the relevant revision dependencies within your IT environment.
- HPE Firmware Update Implementation Service: Implementation of firmware updates for selected HPE server, storage, and solution products, taking into account the relevant revision dependencies within your IT environment.

- Implementation assistance services: Highly trained technical service specialists to assist you with a variety of activities, ranging from design, implementation, and platform deployment to consolidation, migration, project management, and onsite technical forums.
- 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.

Notes: To review the list of Lifecycle Services available for your product go to:
https://www.hpe.com/us/en/services/lifecycle-services.html

For a list of the most frequently purchased services using service credits, see the HPE Service Credits Menu

Installation Services

Installation Services are intended to guide you from start to finish and to help make your installation a success. This installation service is mandatory and the installation engagement includes:

- Inventory and verify HPE GreenLake for File Storage equipment against the sales order and site preparation survey conducted by the pre-sales team.
- Physically rack and cable all HPE GreenLake for File Storage equipment, including connecting network cables provided by the customer.
- Conduct power-on tests and verify the operation.
- Add the storage and compute to an existing HPE GreenLake for File Storage
- Configure basic management, monitoring, & reporting capabilities
- Configure for additional data networks / SAN connectivity as needed
- Installation services are required for all components of HPE GreenLake for File Storage products.

Standard-Density Modules

HPE Alletra Storage MP Compute Chassis HW install svc - HA124A1#V1E

Provides hardware installation of a new HPE Alletra Storage MP Compute chassis. Quote this service when you want onsite assistance in setting up a new HPE Alletra Storage MP compute chassis for hardware racking into an approved rack.

HPE Alletra Storage MP JBOF HW install svc HA124A1#V1F

Provides on-site hardware installation only of a new HPE Alletra Storage MP JBOF shelf. This service should be quoted for customers who want assistance with the heavy lifting and hardware racking.

HPE Aruba Networking CX 8325 Install and startup svc – HA124A1#V1C

On-site installation and configuration of a HPE Aruba Networking CX 8325 switch. This service is designed specifically for the racking, cabling, and configuration of the HPE Aruba Networking switch when used as part of the HPE GreenLake File Storage MP solution.

HPE GreenLake for File Storage SW install svc – HA124A1#V1D

Provides the on-site software installation of the HPE GreenLake File Storage MP software stack and will deploy the software onto a HPE Alletra Storage MP Compute Chassis containing two IOMs or HPE Alletra Storage MP JBOF chassis.

High-density Modules

HPE Alletra Storage MP Compute Chassis HW install svc - HA124A1#5V7

Provides hardware installation of a new HPE Alletra Storage MP high density Compute chassis. Quote this service when you want onsite assistance in setting up a new HPE Alletra Storage MP high density compute chassis for hardware racking into an approved rack.

HPE Alletra Storage MP JBOF HW install svc HA124A1#5T2

Provides on-site hardware installation only of a new high density HPE Alletra Storage MP JBOF shelf. This service should be quoted for customers who want assistance with the heavy lifting and hardware racking.

HPE Alletra Storage MP P2C with NVIDIA I&S svc – HA124A1#5UU

On-site installation and configuration of a HPE NVIDIA SN4600cM switch. This service is designed specifically for the racking, cabling, and configuration of the HPE SN4600cM Networking switch when used as part of the HPE GreenLake File Storage MP solution.

HPE GreenLake for File Storage SW install svc – HA124A1#V1D

Provides the on-site software installation of the HPE GreenLake File Storage MP software stack and will deploy the software onto a HPE Alletra Storage MP Compute Chassis containing two IOMs or HPE Alletra Storage MP JBOF chassis.

Notes: All Installation services are required for all HPE GreenLake for File Storage MP products.

Other Related Services from HPE Services:

HPE Education Services

Training and certification designed for IT and business professionals across all industries. Broad catalogue of course offerings to expand skills and proficiencies in topics ranging from cloud and cybersecurity to AI and DevOps. Create learning paths to expand proficiency in a specific subject. Schedule training in a way that works best for your business with flexible continuous learning options.
https://www.hpe.com/services/training

Defective Media Retention

An option available with HPE Complete Care Service and HPE Tech Care Service 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 services options.

Parts and Materials

HPE 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.

How to Purchase Services

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 services at https://ssc.hpe.com/portal/site/ssc/

AI Powered and Digitally Enabled Support Experience

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

Sign into the 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 an intelligent virtual agent with seamless escalation to a live support agent when required.
https://support.hpe.com/hpesc/public/home/signin

Consume IT On Your Terms

HPE GreenLake edge-to-cloud platform 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 edge-to-cloud platform 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

To learn more about HPE Services, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Contact information for a representative in your area can be found at "Contact HPE" https://www.hpe.com/us/en/contact-hpe.html

For more information
http://www.hpe.com/services

Configuration for standard-density modules

Step 1 - Choose a Base/Upgrade configuration

HPE GreenLake for File Storage MP comes in a cluster configuration comprising of

- HPE Alletra Storage MP 2U Compute Chassis (2 or more)
- HPE Alletra Storage MP JBOF (1 or more)
- HPE Aruba Networking Switch (QTY: 2, R9F67A)

Only ONE of the following options can be selected:

Description	SKU
HPE GreenLake for File Storage MP Base Configuration	S1F24A
HPE GreenLake for File Storage MP Upgrade Configuration	S1F25A

Step 2 – Choose number of Cboxes (Compute chassis)

Description	SKU
HPE Alletra Storage MP 10000 2U Chassis	R7C75A

Following compute nodes will be dynamically added based on above chassis quantity selection.

HPE GreenLake for File Storage MP 32c 256GB Compute Node	S1F26A

DC Power is also available. To select DC power, click on Storage Preferences, and then review the Power Watt Options, and select DC Power

HPE Alletra Storage MP 1600W -48VDC Power Supply	R7C78A

Notes:

- By default, 2x compute nodes are included with QTY 1 x HPE Alletra Storage MP 2U Chassis (R7C75A)
- QTY 2 x power supplies are included for each chassis
- QTY 2 x 100GbE 2-port Host bus adapters (S2A68A) per Node (4 per chassis) are included.
- Change to InfiniBand Adapter (S2H33A) if one wants to use InfiniBand Connectivity at host side.
- Make sure the ratio of Cboxes to Dboxes does not exceed 5 Dboxes for every Cbox.
- For the base SKU S1F24A a minimum of 2 Cboxes (R7C75A) are required.

Step 3 – Choose number of Dboxes (Drive Enclosures)

Description	SKU
HPE Alletra Storage MP NVMe Configure-to-order File Expansion Shelf	S1R27A

Two IOM nodes will be dynamically added based on above expansion shelf quantity selection.

HPE Alletra Storage MP NVMe Expansion Shelf Node	R7C79A

Notes: QTY 2 x power supplies are included for each enclosure

Step 4 – Choose number of NVMe Drives

Choose one of the following,

Description	SKU
HPE Alletra Storage MP 7.68TB NVMe SFF Self-encrypting SSD	R9H68A
HPE Alletra Storage MP 15.36TB NVMe SFF Self-encrypting SSD	R9H69A
HPE Alletra Storage MP 30.72TB NVMe SFF Self-encrypting SSD	S1Z68A

The following persistent SCM drives are dynamically added based on above NVMe SFF type selection.

HPE Alletra Storage MP 800GB NVMe SFF Storage Class Memory SSD	S1E89A
HPE Alletra Storage MP 1.6TB NVMe SFF Storage Class Memory SSD	S1E90A

Notes:

- Proper number of drives for the drive enclosure is automatically populated
- Proper type and number of persistent SCM drives are automatically populated (4 for 7.68, 15.36 TB and 6 for 30.72TB drives)

Step 5 – Add number of backend switch and switching Cables

The length of the cables should be selected based on how the system is racked at the customer site. The default cables are based on best practices and large systems deployed in adjacent racks.

Description	SKU
HPE Alletra Storage MP 32-port 100GbE Switch Bundle	S1R08A
HPE Aruba Networking 100G QSFP28 to QSFP28 2m Active Optical Cable	R9F76A
HPE Aruba Networking 100G QSFP28 to QSFP28 1m Direct Attach Copper Cable	R9F77A
HPE Aruba Networking 100G QSFP28 to QSFP28 7m Active Optical Cable	R9F79A
HPE Aruba Networking 100G QSFP28 to QSFP28 15m Active Optical Cable	R9F80A
HPE Aruba Networking 100G QSFP28 to QSFP28 30m Active Optical Cable	R9F81A

Notes:

- Be default, QTY 2 of the switch is included
- Required switch cables are defaulted, users can select between 2m (default), 7m, 15m and 30m AOC cables
- QTY 1 of Switch rail kit (S0A95A) is included

Step 6 –Verify Software Subscription

Software license for file comes with 3, 4 or 5 yr terms and can be renewed annually post the stipulated time. By default, 5-yrs is added and one can change this to 3-yrs or 4-yrs subscription.

Description	SKU
HPE GreenLake for File Storage MP per TB Software and Support 3-year SaaS	S1F47AAE
HPE GreenLake for File Storage MP per TB Software and Support 4-year SaaS	S2S65AAE
HPE GreenLake for File Storage MP per TB Software and Support 5-year SaaS	S1F48AAE
HPE GreenLake for File Storage MP Upgrade 3-year per TB Software and Support SaaS	S1P08AAE
HPE GreenLake for File Storage MP Upgrade per TB Software and Support 4-year SaaS	S2S68AAE
HPE GreenLake for File Storage MP Upgrade 5-year per TB Software and Support SaaS	S1P09AAE

Notes: 1, 6, 7-year terms are available on need basis

Step 7 – Add/Remove Premium PSM Support

By default, a 1-yr Premium PSM subscription is included by the OCA Configurator which is optional and can be removed. This service provides the customer with a named service account manager.

Description	SKU
HPE Tier 1 Storage Arr 1Y PSM Tier A SVC	HT6Z6A1

Step 8 – Adjust Support

Support is required and will default to a 5-year subscription. This value can be overridden with a 3 year subscription. Currently the only options for support are 3 and 5 years any other selections will generate Unbuildable errors and cannot be quoted. A 1year subscription can be applied for renewals. Options exist for data media retention services (DMR) or comprehensive data media retention services (CDMR) that allow the customer to retain failed media drives.

Description	SKU
HPE Tech Care Essential SVC	HU4A6A3/5
HPE Tech Care Essential w/DMR SVC	HU4A7A3/5
HPE Tech Care Essential w/CDMR SVC	HU4A8A3/5
HPE Complete Care Addon Essential SVC	HU4D5A3/5
HPE Complete Care Addon Essential wDMR SVC	HU4D6A3/5
HPE Complete Care Addon Essential wCDMR SV	HU4D7A3/5

Notes: Minimum support required 3-year HPE Tech Care Essentials

Step 9– Add Installation Service (Mandatory)

The HPE GreenLake for File Storage requires Profession Installation Services. Removing these services will result in unbuildable errors. The quantity of each service is calculated automatically based on your configuration.

Description	SKU
HPE Alletra Storage MP Compute Chassis HW install svc	HA124A1#V1E
HPE Alletra Storage MP JBOF HW install svc	HA124A1#V1F
HPE Aruba 8325 Install and startup svc	HA124A1#V1C
HPE Greenlake for File Storage SW install svc	HA124A1#V1D

Configuration for high-density modules

Step 1 - Choose an Upgrade configuration.

HPE GreenLake for File Storage MP high density comes in a cluster configuration comprising of

- Cbox (Compute)
- Dbox (Storage)
- HPE NVIDIA Spectrum Switch

Only upgrades to existing configurations can be selected:

Description	SKU
HPE GreenLake for File Storage MP High Density Upgrade Configuration	S3N99A

Step 2 – Choose number of Cboxes (Compute)

Description	SKU
HPE Alletra Storage MP 2U High Density Compute Chassis	S3P01A

Notes: This includes 4x compute nodes, 2 x power supplies, 8 x 100GbE 2-port Ethernet/InfiniBand Adapters are included

Step 3 – Choose number of Dboxes (Storage)

Choose one of the drive types,

Description	SKU
HPE Alletra Storage MP 1U 338TB NVMe High Density File JBOF	S3P02A
HPE Alletra Storage MP 1U 1352TB NVMe High Density File JBOF	S3P04A

Notes:

- QTY 2 x power supplies, 4x NVIDIA Bluefield–1 DPUs each with 2x100GbE Ethernet/InfiniBand ports are included
- NVMe and SCM drives are fully populated (22/8 drives)

Step 4 – Add number of backend switches and cables

Description	SKU
HPE Alletra Storage MP 2U 100GbE 64xQSFP28 Power to Connector Airflow Switch SN4600cM with NVIDIA	S3P06A
HPE 100Gb QSFP28 to QSFP28 0.5m Direct Attach Copper Cable	R8M59A
HPE Aruba Networking 100G QSFP28 to QSFP28 2m Active Optical Cable	R9F76A
HPE Aruba Networking 100G QSFP28 to QSFP28 7m Active Optical Cable	R9F79A
HPE Aruba Networking 100G QSFP28 to QSFP28 15m Active Optical Cable	R9F80A

Notes:

- Be default, QTY 2 of the switch is included.
- Required switch cables are defaulted, users should confirm selection of different cables based on site survey.
- QTY 1 of Switch rail kit is included.
- These cables are only to connect Cboxes and Dboxes to the internal NVME Storage Fabric (Back_end Switches).

Step 5 –Verify Software Subscription

Software licenses for high density are available for upgrades with 3 yr terms.

Description	SKU
HPE GreenLake for File Storage MP Upgrade 3-year per TB Software and Support SaaS	S1P08AAE

Step 6 – Add/Remove Premium PSM Support

By default, a 3-yr Premium PSM subscription is included by the OCA Configurator which is optional and can be removed. This service provides the customer with a named service account manager.

Description	SKU
HPE Tier 1 Storage Arr 3Y PSM Tier A SVC	HT6Z6A3

Step 7 – Adjust Support

Support is required and the only option will be a 3 year subscription. Additional year terms are available on a need basis. Options exist for data media retention services (DMR) or comprehensive data media retention services (CDMR) that allow the customer to retain failed media drives.

Description	SKU
HPE 3Y Tech Care Essential Service	HU4A6A3
HPE 3Y Tech Care Essential with Defective Media Retention Service	HU4A7A3
HPE 3Y Tech Care Essential with Comprehensive Defective Material Retention Service	HU4A8A3
HPE 3Y Complete Care Addon Essential Service	HU4D5A3
HPE 3Y Complete Care Addon Essential with Defective Media Retention Service	HU4D6A3
HPE 3Y Complete Care Addon Essential with Comprehensive Defective Material Retention Service	HU4D7A3

Notes: Minimum support required 3-year HPE Tech Care Essentials

Step 8– Add Installation Service (Mandatory)

The HPE GreenLake for File Storage requires Profession Installation Services. Removing these services will result in unbuildable errors. The quantity of each service is calculated automatically based on your configuration.

Description	SKU
HPE Alletra Storage MP Compute Chassis HW install svc	HA124A1#5V7
HPE Alletra Storage MP JBOF HW install svc	HA124A1#5T2
HPE Alletra Storage MP P2C with NVIDIA I&S SVC	HA124A1#5UU
HPE Greenlake for File Storage SW install svc	HA124A1#V1D

Host Connectivity for standard-density and high-density configurations

Host Connectivity can now be added directly in OCA under the “Front End Cables and Transceivers” menu for both the high density and standard-density configurations.

Host (Front-End) Data Network Switches for standard and high-density configurations

Generally, the Customer specifies the Host Network and should specify the type of switch as part of the site survey. In situations where the customer requires help on deploying a host network or top-of-rack switches to connect into the customers host network then professional services contract to design this solution is recommended. The following table enumerates HPE branded solutions that are compatible. A strong recommendation is made to use 100G switches to achieve the maximum performance from your File Storage Solution.

Description	SKU
HPE Aruba Networking CX 8325-48Y8C Power-to-Port Airflow 6 Fans 2 Power Supply Units Bundle	R9F65A
HPE Aruba Networking CX 8325-32C Port-to-Power Airflow 6 Fans 2 Power Supply Units Bundle	R9F66A
HPE Aruba Networking CX 8325-32C Power-to-Port Airflow 6 Fans 2 Power Supply Units Bundle	R9F67A
Mellanox InfiniBand HDR 40-port QSFP56 Managed Back to Front Airflow Switch	P06249-B21
NVIDIA InfiniBand NDR 64-port OSFP Managed Power to Connector Airflow Switch	P45692-B21
NVIDIA InfiniBand NDR 64-port OSFP Power to Connector Airflow Switch	P45691-B21

Notes:

- Each Compute Chassis has 4 ports for host network connectivity, generally these should be 100G links, but they can negotiate to 10/25/40G/50G.
- Performance information is based on 4-100G connections. Using less ports or lower bandwidth connections may impact availability during host network failures and/or maximum performance. The performance can be balanced by adding more Compute Chassis'. A 100G TOR Aggregation Switch is recommended over connecting to 10/25/40/50G host networks.

Host (Front-end) Management Switches (Optional) for standard and high-density configurations

List the Host Data Network the customer often specifies the management network, If necessary, HPE Aruba Networking 2930F is an ideal switch for TOR connectivity. Additionally, CAT5 RJ45 cables can be quoted.

Description	SKU
HPE Aruba Networking 2930F 48G PoE+ 4SFP+ Switch	JL256A
HPE RJ45 to RJ45 Cat5e Black M/M 7.6ft 1-pack Data Cable	C7535A
HPE 4.3m/14ft CAT5 RJ45 M/M Ethernet Cable	C7536A
HPE 7.6m/25ft CAT5 RJ45 M/M Ethernet Cable	C7537A
HPE 15.2m/50ft CAT5 RJ45 M/M Ethernet Cable	C7542A

Notes:

- Each Cbox (Enclosure) has 4-1Gb Management Ports (2-ILO ports)
- Each Dbox (JBOF) has 4-1Gb Management Ports (2-ILO Ports)
- Each 8325 Switch has 1-1Gb Management Port
- Please use ad-hoc or ad-hoc container options in OCA to configure front-end management switches and cables. Front-end connectivity section will be added in the config sooner.

Host (Front-end) Connectivity Options (Optional) for standard and high-density configurations

Your GreenLake File Storage server always connects to the Host Data Network via 1-4 data ports exposed on each compute chassis via a pair of Ethernet Adapters or InfiniBand Adapters.
The standard-density configurations uses either S2A68A(Ethernet Adapter) or S2H33A (InfiniBand Adapter) for front end connectivity.
For the high-density configuration, a single embedded adapter is provided. This adapter can be switched to either Ethernet or InfiniBand as needed.

Ethernet:

There are three ways to connect Ethernet adapter to host side ethernet connectivity,

1. Optical transceivers w/ LC OM4 cables
2. Direct Attach Copper (DAC) cables
3. Active Optical cables (AOC)

If connecting at 10Gb (SFP+) or 25Gb (SFP28) you will require QSFP adapter (845970-B21). This adapter is required whether you are connecting fiber optics or DAC or AOC cables.

QSFP to SFP Adapter for standard and high-density configurations

Description	SKU
HPE QSFP28 to SFP28 Adapter	845970-B21

Notes: QSF28 to SFP28 adapters are required for connecting 10Gb SFP+ or 25Gb SFP28 transceivers to the CX6-DX HBA Adapter.

1. Optical Transceivers and Fiber Cables:

Short Range Transceivers with the combination of LC/LC or MPO/MPO or SMF cables can be used to connect the CX6-DX adapter to the host network. Additionally, QSFP28 to SF28 adapter (845970-B21) is required for connecting 10G/25G SFP (+, 28) to CX6-DX HBA adapter. Long Range Transceivers are used to connect to host networks that live in a remote data center. This is impractical due to number of these cables required.

Short Range Transceivers for standard and high-density configurations

Description	SKU
HPE 10GbE SFP+ SR Multi-mode 300m Transceiver	Q6M30A
HPE Aruba Networking 25G SFP28 LC SR 100m MMF Transceiver	JL484A
HPE Networking X140 40G QSFP+ MPO SR4 Transceiver	JG325B
HPE 100GbE QSFP28 SR4 100m Transceiver	Q2F19A
HPE 25Gb SFP28 Short Wave Extended Temperature 1-pack Pull Tab Optical Transceiver	Q2P64B

OM4 Cables

LC/LC cables are required for connecting 10Gb/25Gb transceivers, additionally QSFP28 to SF28 adapter (845970-B21) is required for connecting 10G/25G SFP (+, 28) to CX6-DX HBA adapter.

Description	SKU
HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 1m Cable	QK732A
HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 2m Cable	QK733A
HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 5m Cable	QK734A
HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 15m Cable	QK735A
HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 30m Cable	QK736A
HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 50m Cable	QK737A

MPO Cables

MPO/MPO cables are required for connecting 40Gb/100Gb transceivers

Description	SKU
HPE Premier Flex MPO12/MPO12 Multi-mode OM4 100m Fiber Cable	H6Z30A
HPE Premier Flex MPO12/MPO12 Multi-mode OM4 1m Fiber Cable	Q1H63A
HPE Premier Flex MPO12/MPO12 Multi-mode OM4 2m Fiber Cable	Q1H64A
HPE Premier Flex MPO12/MPO12 Multi-mode OM4 5m Fiber Cable	Q1H65A
HPE Premier Flex MPO12/MPO12 Multi-mode OM4 15m Fiber Cable	Q1H66A
HPE Premier Flex MPO12/MPO12 Multi-mode OM4 30m Fiber Cable	Q1H67A

Long Range Transceivers

Description	SKU
HPE Aruba Networking 10G SFP+ LC LR 10km SMF Transceiver	J9151E
HPE Aruba Networking 25G SFP28 LC LR 10km SMF Transceiver	JL486A
HPE Networking X142 40G QSFP+ LC LR4 SM Transceiver	JH232A
HPE Aruba Networking 100G QSFP28 LC LR4 10km SMF 2-strand Transceiver	JL310A

SMF Cables

Single Mode cables are required for Long Range SMF transceivers

Description	SKU
HPE 5m Single-Mode LC/LC Fibre Channel Cable	AK346A

2. DAC Cables

Description	SKU
HPE Networking X240 10G SFP+ SFP+ 3m DAC Cable	JD097C
HPE Networking X240 10G SFP+ SFP+ 5m DAC Cable	JG081C
HPE Aruba Networking 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283D
HPE Aruba Networking 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285D
HPE 25Gb SFP28 to SFP28 3m Direct Attach Copper Cable	844477-B21
HPE 25Gb SFP28 to SFP28 5m Direct Attach Copper Cable	844480-B21
HPE Aruba Networking 40G QSFP+ to QSFP+ 3m Direct Attach Copper Cable	R9G00A
HPE Aruba Networking 40G QSFP+ to QSFP+ 5m Direct Attach Copper Cable	R9G01A
HPE Networking X240 100G QSFP28 3m DAC Cable	JL272A
HPE Networking X240 100G QSFP28 5m DAC Cable	JL273A

Notes: QSF28 to SFP28 (845970-B21) adapters are required for connecting DAC cables to the CX6-DX HBA Adapter.

3. AOC Cables

Description	SKU
HPE Networking X2A0 10G SFP+ to SFP+ 7m Active Optical Cable	JL290A
HPE Networking X2A0 10G SFP+ to SFP+ 10m Active Optical Cable	JL291A
Description	**SKU**
HPE Aruba Networking 25G SFP28 to SFP28 3m Active Optical Cable	R9F94A
HPE Aruba Networking 25G SFP28 to SFP28 7m Active Optical Cable	R9F95A
HPE Aruba Networking 25G SFP28 to SFP28 15m Active Optical Cable	R9F96A
HPE Aruba Networking 40G QSFP+ to QSFP+ 7m Active Optical Cable	R9G03A
HPE Aruba Networking 40G QSFP+ to QSFP+ 15m Active Optical Cable	R9G04A

Description	SKU
HPE Aruba Networking 40G QSFP+ to QSFP+ 30m Active Optical Cable	R9G05A
HPE Aruba Networking 100G QSFP28 to QSFP28 2m Active Optical Cable	R9F76A
HPE Aruba Networking 100G QSFP28 to QSFP28 7m Active Optical Cable	R9F79A
HPE Aruba Networking 100G QSFP28 to QSFP28 15m Active Optical Cable	R9F80A
HPE Aruba Networking 100G QSFP28 to QSFP28 30m Active Optical Cable	R9F81A

InfiniBand for standard and high-density configurations

There are some differences between the standard and high-density configurations for InfiniBand cable connectivity. Please pay close attention to the type of front-end switches that is being used, and validate that the adapter, cables and switch will achieve the end results required.

HDR for standard-density configurations and high-density configurations

Description	SKU
HPE InfiniBand HDR/Ethernet 200Gb QSFP56 to QSFP56 3m Active Optical Cable	P06153-B21
HPE InfiniBand HDR/Ethernet 200Gb QSFP56 to QSFP56 2m Direct Attach Copper Cable	P06149-B24

NDR for standard-density configurations

Description	SKU
HPE InfiniBand HDR/Ethernet OSFP to 2xQSFP56 10m Splitter Active Optical Cable	P45733-B21

Notes:

- QSF28 to SFP28 (845970-B21) adapters are required for connecting AOC cables to the CX6-DX HBA Adapter.
- Final selection for host connectivity options is downstream via formal site surveys between the solution architects and customers.
- Break-out cables are not supported by HBA adapters included with the solution
- Adapters included can autosense to 10, 25, 40, and 100G based on the transceivers and/or DAC and/or AOC cables that are connected
- All QSFP (+,28,56) can plug directly to the front end HBA. All SFP (+,28) will need the QSFP to SFP adapter.To ensure safe and reliable operation there are unique environmental requirements that restrict the maximum ambient inlet temperature to the Cboxes connected to the front-end InfiniBand Switches with optical cables. The maximum ambient restrictions vary depending on the AOC cables selected.
  - 200G QSFP56 AOC Cables (4.5W maximum): +25C maximum ambient inlet temperature
  - 100G QSFP Splitter Cables (3.5W maximum): +30C maximum ambient inlet temperature
- Performance information is based on 100G connections, if using lower speed connectivity, performance will be limited to port speed and count.
- Host Connectivity can now be added directly in OCA under the “Front End Cables and Transceivers” menu for both the high density and standard-density configurations.

HPE Alletra Storage MP (standard-density) Specifications

Component	Dimensions Height/Width/Depth	Weight	Packaged Weight	Max Power	Idle Power	Max Heat	Idle Heat
Compute (32c IOM, 256GB, Milan CPU) (Without drives)	3.44"/19.13"/33.50" (87.5mm/486mm/851mm)	71.0 Lbs (32.3 Kg)	75.0 Lbs (34.1 Kg)	1195 W	812 W	4077 BTU/Hr	2770 BTU/Hr
JBOF (24 Drives, 20 NVME-7.68TB, 4 SCM-800)	3.44"/19.13"/33.50" (87.5mm/486mm/851mm)	85.0 Lbs (38.6 Kg)	89.0 Lbs (40.5 Kg)	1174 W	783 W	4005 BTU/Hr	2671 BTU/Hr
JBOF (24 Drives, 20 NVME-15.36TB, 4 SCM-800)	3.44"/19.13"/33.50" (87.5mm/486mm/851mm)	85.0 Lbs (38.6 Kg)	89.0 Lbs (40.5 Kg)	1196 W	788 W	4080 BTU/Hr	2688 BTU/Hr
JBOF (24 Drives, 18 NVME-30.72TB, 6 SCM-800)	3.44"/19.13"/33.50" (87.5mm/486mm/851mm)	85.0 Lbs (38.6 Kg)	89.0 Lbs (40.5 Kg)	1212 W	798 W	4135 BTU/Hr	2722 BTU/Hr
HPE Aruba Networking CX 8325-32C	1.73"/17.42"/18.62" (44.0mm/443mm/473mm)	24.0 Lbs (10.9 Kg)	27.0 Lbs (12.3 Kg)	618 W	143 W	2108 BTU/Hr	487 BTU/Hr

HPE Alletra Storage MP (high-density) Specifications

Component	Dimensions Height/Width/Depth	Weight	Packaged Weight	Max Power	Idle Power	Max Heat	Idle Heat
Cbox(2U 4-N, 2x16-core, 256GB, 2 x 100GbE)	3.44"/17.32"/36.38" (87.2mm/440mm/924mm)	103.02 lbs (46.7 Kg)	115 lbs (52.2 kg)	2185 W	1249 W	7456 BTU/Hr	4262 BTU/Hr
Dbox (30 Drives, 22 NVME-15.36TB, 8 SCM-800)	1.75"/17.24"/39.00" (44.45mm/438mm/990.6 mm)	60 lbs (27.2 kg)	83 lbs (37.6 kg)	1160 W	854 W	3958 BTU/Hr	2914 BTU/Hr
Dbox (30 Drives, 22 NVME-61.44TB, 8 SCM-1600)	1.75"/17.24"/39.00" (44.45mm/438mm/990.6 mm)	60 lbs (27.2 kg)	83 lbs (37.6 kg)	1236 W	895 W	4217 BTU/Hr	3054 BTU/Hr
HPE NVIDIA SN4600cM	3.46"/16.85"/22.38" (88mm/428mm/568.5mm)	32.3 lbs (14.7 kg)	40.5 lbs (18.4 kg)	466 W	300 W	1590 BTU/Hr	1024 BTU/Hr

Power Requirements

Input Voltage - AC Power Supply

- HPE Alletra Storage MP Base (standard Density): 200 to 240 VAC (50 to 60 Hz)
- HPE Alletra Storage MP Base (High Density): 200 to 240 VAC (50 to 60 Hz)

Notes: Refer to the HPE Power Advisor online tool for power consumption, heat loading, and circuit sizing information: HPE Power Advisor utility

Environmental Specifications	Standard-density & High-density
Operating Temperature	41° to 95° F (5° to 35° C) - Reduce rating by 1° F for each 1000 ft altitude (1.8° C/1,000 m) Maximum ambient inlet temperature to the Cboxes connected to the front-end InfiniBand Switches with optical cables – 200G QSFP56 AOC Cables (4.5W maximum): +25C maximum ambient inlet temperature – 100G QSFP Splitter Cables (3.5W maximum): +30C maximum ambient inlet temperature There will be slightly different limits for AOC cables used with respect to the high-density modules
Shipping Temperature	-30° to 60°C (-22 to 140°F). Maximum rate of change is 20°C/hr (36°F/hr)
Operating Altitude (ft/m) max.	10,000 ft / 3,048 m
Shipping Altitude (ft/m) max.	40,000ft / 12,192 m
Humidity	10% to 90% non-condensing
Shipping Humidity	10% to 90% non-condensing
Operating Vibration	0.25 G, Sine, 5-500 Hz; 0.25 GRMS, Random 5-500 Hz
Non-operating Vibration	0.75 G, Sine, 5-500 Hz
Operating Shock	5G, 11ms, half-sine
Non-operating Shock	10 G, 11ms, half-sine
Maximum Exhaust Air Flow	HPE Alletra Storage MP Base: 267 CFM
Acoustic Sound Pressure Level	Typical 60% Duty Cycle Fans – 65.7 dB 100% Duty Cycle Fans - 74.5 dB HPE NVIDIA SN4600cM: 67.6 dB(A) At 100% Duty Cycle fans *Acoustics Sound pressure level measured per ISO 7779 specifications

Electromagnetic Compatibility

- CISPR 32:2015/ EN 55032: 2015 +A11:2020 Class A
- BS EN 55032:2015 +A11:2020
- CISPR 35:2016/ EN 55035:2017 +A11:2020
- BS EN 55035:2017 +A11:2020
- IEN 61000-3-2: 2019 +A1:2021
- EN 61000-3-3: 2013 +A2:2021
- AS/NZS CISPR 32:2015 +A1:2020 Class A
- CNS 13438:2006 Class A
- 47 CFR Part 15 Subpart b Class A
- ICES-003 Issue 7 Class A
- VCCI-CISPR 32: 2016 Class A
- RRA Notice No. 2021-3 (2021.02.08) Class A
- RRA Notice No. 2021-10 (2021.02.08)

Safety

- IEC 60950-1:2005 (2nd Edition); +A1:2009 +A2:2013
- EN 62479:2010
- IEC 62368-1: 2014/ IEC 62368-1:2018
- EN 62368-1:2014+A11:2017/ EN 62368-1:2020 +A11:2020
- CNS 14336-1
- ANSI/UL 62368-1:2021
- CAN/CSA-C22.2 No. 62368-1:19 Update No. 1-2021

Certifications/Markings

- BIS (only for standard-density modules)
- BSMI (only for standard-density modules)
- cCSAus
- CE
- FCC Class A
- IC Class A
- KCC
- Morocco
- RCM
- VCCI
- WEEE
- China RoHS
- EU RoHS
- UKCA

Summary of Changes

Date	Version History	Action	Description of Change
19-Jan-2026	Version 22	Changed	Service and Support section was updated - Supportability information about DataStore and DataSpace supports was added. Configuration Information section was updated - Product configuration information related HPE Alletra Storage MP 2U Compute Chassis was updated. Notes for configuration requirements were updated.
10-Nov-2025	Version 21	Changed	Configuration Information section was updated – high-density module options were streamlined to support only upgrade configurations.
			Support options for high-density configurations were simplified to 3-year terms. Legacy SKUs for 4- and 5-year subscriptions were removed.
			"What's new" section was revised to remove references to higher density options for AI and data lake workloads.
02-Sep-2025	Version 20	Changed	Configuration Information section was updated - DC Power and NVMe Drives information have been updated
		Added	R7C78A, R9H68A, R9H69A
		Removed	R9H72A, R9H73A
28-Jul-2025	Version 19	Changed	Update survey link.
09-Jun-2025	Version 18	Changed	Configuration Information section was updated. Obsolete SKU was removed - P06248-B23
07-Apr-2025	Version 17	Changed	Configuration Information section was updated.
03-Feb-2025	Version 16	Changed	Configuration Information section was updated.
16-Dec-2024	Version 15	Changed	Standard Features section was updated.
02-Dec-2024	Version 14	Changed	Configuration Information section was updated.
04-Nov-2024	Version 13	Changed	Configuration Information section was updated.
19-Aug-2024	Version 12	Changed	Overview, Standard Features, Services and Support, and Configuration Information sections were updated. Host Connectivity updated for clarity
04-Mar-2024	Version 11	Changed	Overview, Standard Features, Services and Support, Configuration Information and Technical Specifications sections were updated. High density module information was added
19-Feb-2024	Version 10	Changed	Services and Support, Configuration Information and Technical Specifications sections were updated. Added InfiniBand cables and updated environmental specifications.
08-Jan-2024	Version 9	Changed	Configuration Information section was updated. Added InfiniBand Adapter and host connectivity options.
13-Nov-2023	Version 8	Changed	HPE Services Rebranding.
06-Nov-2023	Version 7	Changed	Configuration Information section was updated.
02-Oct-2023	Version 6	Changed	Standard Features and Configuration Information sections were updated.
07-Aug-2023	Version 5	Changed	Configuration Information and Technical Specifications sections were updated. Updated Switch SKU and certifications.

Summary of Changes

Date	Version History	Action	Description of Change
19-Jun-2023	Version 4	Changed	Configuration Information and Technical Specifications sections were updated. Updated front end connectivity options.
05-Jun-2023	Version 3	Changed	Standard Features, Configuration Information and Technical Specifications sections were updated. Added front end connectivity options.
17-Apr-2023	Version 2	Changed	Standard Features, Service and Support, Configuration Information and Technical Specifications sections were updated.
04-03-2023	Version 1	New	New QuickSpecs.

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