Have feedback on QuickSpecs? We're listening

HPE Alletra Storage MP B10000 QuickSpecs

HPE Alletra Storage MP B10000 provides mission-critical storage at midrange economics with the industry's first disaggregated, scale-out block and file storage.

Built on HPE Alletra Storage MP hardware and managed via the GreenLake, this unique unified block and file storage offering brings an intuitive cloud experience, efficient scale, and extreme resiliency and performance to mission-critical apps from large databases to modern cloud-native apps to consolidated mixed workloads at a midrange price point.

Overview

Get an intuitive, AI-driven cloud experience on-premises that simplifies management and shifts operations from infrastructure-centric to app-centric. Scale performance and capacity independently and without disruption with disaggregated storage. Meet every SLA with mission-critical storage that delivers an unrivaled 100% Data Availability Guarantee.



HPE Alletra Storage MP B10000
(2-Node all NVMe Storage Base)

What is New

- Switched systems with **five or six controller nodes are now available** with ArcusOS 10.6.0.
- ArcusOS 10.6.0 adds support for a second JBOF on 4-node switchless systems, scaling up to 96 drives.
- ArcusOS 10.6.0 introduces non-disruptive conversion from switchless to switched configurations. Customers can start small in a switchless deployment and later move to a switched architecture without disruption.
- Support for 100Gb Ethernet and 64Gb Fibre Channel
- With ArcusOS 10.6.0 higher port counts are achieved
    - Switched configurations now support a third HBA per controller node
    - Dynamic Host Protocol Assignment allowing Ethernet ports to be configured individually as iSCSI or NVMe/TCP without being tied to specific HBA slots.
- The new HPE Alletra Storage MP B10140 (4N) is available in a switchless, 4-node configuration that delivers lower total cost of ownership (TCO), increased rack density, and improved power efficiency.
- Consolidate your workloads and increase infrastructure efficiency on a single **unified block and file storage** platform with consistent management and simplicity at scale across the hybrid cloud.
- Boost the security of your data with integrated **real-time ransomware detection** and a comprehensive defense workflow aligned with the NIST cyber resilience framework.

Overview

- **HPE Alletra Storage MP B10000 is now NEBS Level 3 certified** – this includes both B10100 and B10200 models
- **HPE Alletra Storage MP B10000 has been rebranded** – previously GreenLake for Block Storage built on HPE Alletra Storage MP.
- **Easily and cost-effectively scale to meet evolving workload demands with disaggregated storage:** New, multi-node switched models enable you to scale capacity and performance independently for greater efficiency and lower cost.
- **Accelerate mission-critical apps with up to 2X performance boost[1].** New 2, 3, and 4 controller node switched models (with a choice of 16-core or 32-core configurations) – adding to the existing option of 2 core controller node switchless models – enables a leap in performance of up to 2X.
- **Scale without limitation with 2X more capacity[2]**. Support for up to 16 JBOF expansion shelves enables you to start small and scale big – from 15.36 TB to around 5.8 PB[3] - without disruption.
- **Maximize efficiency and cost savings with granular capacity upgrades**: Support for 8 to 24 SSDs per enclosure—with the ability to upgrade drives in 2-drive increments and JBOFs in increments of 1—gives you the flexibility to fine-tune, adapt, and elastically scale storage environments in line with specific workload capacity requirements and evolving business needs.
- **Unlock the full power of NVMe for Ethernet networks with NVMe/TCP:** With new NVMe over TCP host protocol support, you get all the benefits of a low latency, high-performance NVMe fabric without committing to a dedicated storage network like Fibre Channel. You now have the flexibility to choose the front-end storage protocol that best fits your workloads and existing network infrastructure thanks to support for Fibre Channel, NVMe-oF/FC, NVMe-oF/TCP and iSCSI.
- **Simplify management with enhanced and extended AI-driven performance reporting:** HPE Alletra Storage MP B10000 is powered by industry-leading AIOps for infrastructure, delivered via the Data Services Cloud Console (DSCC) on the GreenLake. The latest release of the Data Ops Manager app on DSCC continues to eliminate the guesswork for customers when it comes to storage optimization through enhanced and extended AI-based performance reporting and analytics for improved troubleshooting and insights. Key reporting enhancements include headroom utilization trend analysis by volume set, top volume set hotspots by latency, improved workload drift detection, and resource contention detection. With the latest release of the Data Ops Manager, customers also get improved capacity reporting, capacity savings, efficiency metrics, and new sustainability metrics (including carbon utilization emissions and energy consumption).
- **Protect your organization from the threat of a ransomware attack:** The HPE Alletra Storage MP B10000 provides storage teams with all the security and data protection functionality they need to protect their organization from a ransomware attack. The platform integrates cyber-resilient technologies directly into its architecture to strengthen threat detection, containment, and rapid recovery. HPE Alletra Storage MP B10000 ransomware protection framework provides:
    - Real-time ransomware threat detection
    - Automated response workflows to help contain malicious activity
    - Immutable recovery for secure, tamper-proof restore points
    - SIEM/XDR alerting with volume-level identification of affected data
    - Supported by the HPE Cyber Security Ransomware Guarantee

Learn more: HPE Alletra Storage MP B10000 Ransomware Protection Framework (public): https://www.hpe.com/psnow/doc/a50013811enw

Overview

- **Take the risk and complexity out of data migration:** Remove the risk and complexity of switching to a new storage platform with multiple options for quick, non-disruptive data migration.
  - With HPE Peer Motion, you can move data from HPE 3PAR, HPE Primera, and HPE Alletra 9000 storage arrays to HPE Alletra Storage MP B10000—online, non-disruptively, and without complex planning or dependency on extra tools.
  - With HPE Zerto, you get a simple (4-click), scalable, and risk-free migration experience for large, complex virtualized environments—regardless of hardware or storage platform.
  - If you don't have the required in-house IT staff availability, expertise, and tools to ensure a successful migration, HPE Data Migration Services will get you up and running fast. This simplifies the data migration process and provides a flexible way to migrate an organization's critical data safely with minimal impact to operations. You have a choice of several online and offline options for migrating their data to align with their organization's requirements, budgets, and timelines.
- **Support for QLC SSDs:** Provides lower cost per TB and greater storage density; ideal for heavy read workloads
- **Support for 10GBase-T:** Enables additional host connectivity for legacy infrastructure
- **Numerous software feature improvements:** Including greater system performance, security enhancements, and expanded peer motion support

Notes:

- [1]Compared to existing 2 node (16-core/32-core) switchless configurations
- [2]Compared to release 3 of HPE Alletra Storage MP B10000
- [3]Fully loaded configuration with 16x JBOFs totalling 384 x 15.36 TB NVMe SSDs.

Standard Features

Hardware

– HPE Alletra Storage MP B10000 is powered by 2-Node to 6-Node storage controllers and up to 5.9 PB of all NVMe SSD capacity in a single system.

Simplify management with an intuitive cloud experience on premises

– **Simplify operations and move faster with a cloud operational experience:** Reduce on-premises storage complexity across the lifecycle — from install to upgrade — with an AI-driven cloud operational experience powered by the GreenLake.

– **Simplified deployment:** Get started in minutes with streamlined device deployment. Simply rack the infrastructure, plug in the power cords, and connect the network cables. With a few clicks, the new system is configured and available in your fleet, ready to serve data for application workloads.

– **Deploy apps faster:** Automate app deployment with intent-based provisioning. Select the storage tier, workload type, capacity, and protection policy, and let AI-driven intelligence automatically optimize your SLAs by recommending the best-suited system across your fleet for your new workload.

– **Unified storage management:** 100% cloud-managed infrastructure means you can manage, monitor, and protect your global storage environment from a single cloud console that's accessible from any location, on any device – so managing hundreds of systems across geographies is as simple as managing one.

– **Invisible upgrades:** Thanks to SaaS-based delivery, new data services instantly become available to you. Data plane software upgrades are non-disruptive and intelligently matched to a given system.

Run any app – without compromise with a 100% data availability guarantee

– **Get peace of mind with 100% data availability guaranteed:** Built on an AI-driven, disaggregated, no single point of failure platform to guarantee resilient 100% data availability for your mission-critical apps.

– **Advanced DR and HA**: Meet any recovery-point objective (RPO) and recovery-time objective (RTO) strategy with transparent business continuity and automatic fail-over across multiple sites, and provide simple and efficient hybrid cloud data protection for on-premises and cloud-native workloads.

– **Accelerate your most demanding applications:** Built on a unique, massively parallel, multi-node, and all-active platform, HPE Alletra Storage MP B10000 consolidates traditional and next-generation mission-critical applications at scale with predictable performance and ultra-low latency.

– **Industry's most advanced AI-Ops:** Predict and prevent disruptions before they occur across the stack and pinpoint issues between storage and VMs and under-utilized resources. Take the guesswork out of managing data infrastructure with AI-driven recommendations that improve performance, drive higher availability, and optimize resource utilization and planning.

– **Transformed support experience:** Eliminate time-consuming, frustrating escalations via predictive support automation and direct access to the experts and resources you need.

Standard Features

HPE Alletra Storage MP B10100 (switchless)					
	B10120	**B10130**	**B10140**	**B10140 (4N)**	**Expansion Shelf (JBOF)**
Base Chassis	2U	2U	2U	4U (2x 2U)	2U
Number of Nodes	2	2	2	4	2
CPUs per Node	1	1	1	1	1
CPU core count	8-core	16-core	32-core	32-core	8-core
Cache Memory per Node	256 GB	256 GB	512 GB	512 GB	64 GB (not used as cache)
Maximum Number of slots per Node[1]	4	4	4	4	2
Maximum Host Ports per Node[2]	12-ports	12-ports	12-ports	8-ports	N/A
32/64Gb FC or NVMe/FC Ports/Node[4]	0 - 8 ports	0 - 12 ports	0 - 12 ports	0 - 8 ports	N/A
10/25GbE iSCSI or NVMe/TCP Host Ports per Node[4, 5]	0-10 ports	0-10 ports	0-10 ports	0-6 ports	N/A
100GbE iSCSI or NVMe/TCP Host Ports per Node[4]	0-2 ports	0-2 ports	0-2 ports	0-2 ports	N/A
Max Number of NVMe SSDs per shelf	24	24	24	24	24
Max number of drive shelves per system	1	3 1 base +2 JBOF	3 1 base +2 JBOF	3 2 base +1 JBOF	N/A
Max Raw Capacity per shelf	737.2 TB/670.6 TiB	737.2 TB/670.6 TiB	737.2 TB/670.6 TiB	737.2 TB/670.6 TiB	737.2 TB/670.6 TiB
Max Effective Capacity[3] **per shelf**	1993.5 TB/1813.1 TiB	1993.5 TB/1813.1 TiB	1993.5 TB/1813.1 TiB	1993.5 TB/1813.1 TiB	1993.5 TB/1813.1 TiB
Max Raw Capacity per System	737.2 TB/670.6 TiB	2211.8 TB/2011.6 TiB	2211.8 TB/2011.6 TiB	2211.8 TB/2011.6 TiB	N/A
Max Effective Capacity[3] **per System**	1993.5 TB/1813.1 TiB	6165.6 TB/5607.6 TiB	6165.6 TB/5607.6 TiB	6165.6 TB/5607.6 TiB	N/A

Standard Features

HPE Alletra Storage MP B10200 (switched)			
	B10230	**B10240**	**Expansion Shelf (JBOF)**
Base Chassis	2U	2U	2U
Number of Nodes	2, 3, 4, 5, or 6	2, 3, 4, 5, or 6	2
CPUs per Node	1	1	1
CPU core count	16-core	32-core	8-core
Cache Memory per Node	256 GB	512 GB	64 GB (not used as cache)
Maximum Number of slots per Node[1]	4	4	2
Maximum Host Ports per Node[2]	12-ports	12-ports	N/A
32/64Gb FC or NVMe/FC Ports/Node[4]	0-12 ports	0-12 ports	N/A
10/25GbE iSCSI or NVMe/TCP Host Ports per Node[4, 5]	0-10 ports	0-10 ports	N/A
100GbE iSCSI or NVMe/TCP Host Ports per Node[4]	0-2 ports	0-2 ports	N/A
Max Number of NVMe SSDs per shelf	N/A	N/A	24
Max number of expansion shelves per system	16	16	N/A
Max Raw Capacity per shelf	737.2 TB/670.6 TiB	737.2 TB/670.6 TiB	737.2 TB/670.6 TiB
Max Effective Capacity[3] **per shelf**	1993.5 TB/1813.1 TiB	1993.5 TB/1813.1 TiB	1993.5 TB/1813.1 TiB
Max Raw Capacity per System	5.9 PB/5.24 PiB	5.9 PB/5.24 PiB	N/A
Max Effective Capacity[3] **per System**[4]	16.6 PB/16.21 PiB	16.6 PB/16.21 PiB	N/A

Notes:

- [1]Slots 1, 3 and Slot 4 can be used for host connectivity (at least one is required), and RCIP is optional; Slot 1 (optional) and Slot 2 are used for expansion
- [2]Maximum host ports per node include both host-facing and RCIP ports
- [3]Effective capacity assumes 4:1 data compaction ratio (thin provisioning, deduplication, compression, and copy technologies) in a RAID 6 (10+2) configuration. Note TB vs TiB. Actual ratios will vary based on workload. It also factors in 9% free headroom space to ensure optimal array operation.
- [4]The number of host ports per node depends on the port type, storage array model, ArcusOS version and age of the system.
- [5]For Unified File, the Ethernet HBA must be installed in Slot 4 with Ports 1 and 2 dedicated to File. Unified File requires ArcusOS 10.5.0 or later.

Standard Features

Host OS Support

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

Host OS support varies by connectivity protocol to host. For the latest information on supported operating systems refer to Single Point of Connectivity Knowledge for HPE Storage Products (SPOCK): http://www.HPE.com/storage/spock

Service and Support

Warranty

HPE Alletra Storage MP B10000 has 1-year, parts-only warranty. The warranty on all HPE Alletra Storage MP B10000 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

HPE Services

No matter where you are in your digital transformation journey, you can count on HPE Services to deliver the expertise you need when, where, and how you need it. From planning to deployment, ongoing operations and beyond, our experts can help you realize your digital ambitions.
https://www.HPE.com/services

Consulting Services

No matter where you are in your journey to hybrid cloud, experts can help you map out your next steps. From determining what workloads should live where, to handling governance and compliance, to managing costs, our experts can help you optimize your operations.
https://www.HPE.com/services/consulting

HPE Managed Services

HPE runs your IT operations, providing 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.
HPE Managed Services | HPE

Operational services

Optimize your entire IT environment and drive innovation. Manage day-to-day IT operational tasks while freeing up valuable time and resources. Meet service-level targets and business objectives with features designed to drive better business outcomes.
https://www.HPE.com/services/operational

HPE Complete Care Service

HPE Complete Care Service is a modular, edge-to-cloud IT environment service designed to help optimize your entire IT environment and achieve agreed-upon IT outcomes and business goals through a personalized experience. All delivered by an assigned team of HPE Services experts. HPE Complete Care Service 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

https://www.HPE.com/services/completecare

HPE Tech Care service

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 Tech Care service 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/services/techcare

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/services/lifecycle

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

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Other Related Services from HPE Services:

HPE Installation and Startup Service

Provides for the installation of your HPE hardware according to product specifications including options. The HPE service delivery technician will connect the product to a LAN as appropriate and enable remote support to allow for automatic case creation for hardware failures.

HPE Software Installation and Startup Service

Provides deployment of individual software features, helping to ensure proper installation in your storage environment as well as helping you increase the benefit from your storage investment.

Service and Support

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 transition when needed to a live support agent.
https://support.HPE.com/hpesc/public/home/signin

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

Consume IT On Your Terms

GreenLake Solutions for HPE Alletra Storage MP B10000

GreenLake Solutions with HPE Alletra Storage MP B10000 are available for Customers who wish to pursue Storage-as-a-Service (StaaS) or any Hybrid Cloud solutions based on pay-per-use economics. Whether customers require pre-configured or customized solutions and services, or they simply want to pay only for the data they write to disk via a simple monthly payment – HPE Alletra Storage MP B10000 is readily available for customers looking to procure Storage-as-a-Service (StaaS) in both simple, standalone or complex GreenLake solutions.

For More Information, please visit HPE Alletra Storage MP B10000

HPE Timeless Storage

The HPE Timeless Storage Program that allows customers to refresh their existing technology via non-disruptive controller upgrades is now available on HPE Alletra Storage MP B10000. Some Key features of the program include:

- No forklift upgrades or data migration required.
- Renewal Price Protection
- Customers shall enjoy existing guarantees including 100% Data Availability, StoreMore (data efficiency), and Satisfaction guarantees.
- The program will be launched on HPE Alletra Storage MP B10000, with no change to sales motion, support model, etc.
- The program is available when sold as part of:
  - HPE Alletra Storage MP B10000 or
  - HPE Private Cloud PC3000 or
  - HPE Alletra Storage MP Disconnected
- HPE Timeless Storage
  - HPE Alletra Storage MP B10030 Tech Refresh Single Node - S5E84A
  - HPE Alletra Storage MP B10040 Tech Refresh Single Node - S5E85A
  - HPE Alletra Storage MP B10000 8-year Tech Refresh Tracking – S7Y63A

For more details on the program please refer to the datasheet:
HPE Timeless Storage – For HPE Alletra Storage MP B10000

Configuration Information

Step 1: Choose the storage chassis and controller nodes

HPE Alletra Storage MP B10000 configuration starts with the selection of the Chassis and Controller Nodes. The Chassis is a 2U 2-node chassis that includes 24 bays for small form factor NVMe SSD drives for switchless configuration. Switched configurations do not allow for SSD drives in the same chassis as the controller nodes—NVMe SSDs are added via expansion shelves (JBOFs). The Chassis does not include any controller nodes or power supplies—these must be added.

HPE Alletra Storage MP 10000 Chassis	**SKU**
HPE Alletra Storage MP B10100 Base Configuration	S0B84A
HPE Alletra Storage MP B10200 Base Configuration	S1R06A
– One (1) S0B84A (switchless) or S1R06A (switched) SKU must be ordered for each configuration	
HPE Alletra Storage MP 10000 2U Chassis	R7C75A
HPE Alletra Storage MP 10000 2U TAA-compliant Chassis	S0U32A

- One (1) or two (2) Alletra Storage MP 10000 Chassis SKU must be ordered for each switchless array.
- One (1), two (2), or three (3) Alletra Storage MP Chassis 10000 SKUs must be ordered for each switched array
- For switchless configurations, the Alletra Storage MP 10000 Chassis can host two controller nodes and up to 24 small form factor NVMe drives in a 2U chassis.
- For switched configurations, the Alletra Storage MP 10000 Chassis can host two controller nodes in a 2U chassis.
- The Alletra Storage MP 10000 Chassis does not include any controller nodes or Power Supplies.

HPE Alletra Storage MP B10000 Controller Nodes

B10100 (switchless) controller nodes	**SKU**
HPE Alletra Storage MP B10120 Controller Node	S0S38A
HPE Alletra Storage MP B10120 TAA-compliant Controller Node	S0S40A
HPE Alletra Storage MP B10130 Controller Node	S0R21A
HPE Alletra Storage MP B10130 TAA-compliant Controller Node	S0S41A
HPE Alletra Storage MP B10140 Controller Node	S4V66A
HPE Alletra Storage MP B10140 TAA-compliant Controller Node	S4V67A
B10200 (switched) controller nodes	
HPE Alletra Storage MP B10230 Controller Node	R7D02A
HPE Alletra Storage MP B10230 TAA-compliant Controller Node	S0S42A
HPE Alletra Storage MP B10240 Controller Node	R7D03A
HPE Alletra Storage MP B10240 TAA-compliant Controller Node	S0R20A

- Each Controller Node SKU includes one controller node
- Two (2) Controller Node SKUs must be ordered per chassis
  - For switched configurations, each chassis must be fully populated with two (2) controller nodes before an optional second or third chassis can be added. The optional second or third chassis must have one (1) or two (2) controller nodes. Switched configurations support 2, 3, 4, 5, or 6 controller nodes
  - The HPE Alletra Storage MP B10140 (4N) switchless 4-Node configuration requires two (2) chassis, both populated with two (2) B10140 (32c) controller nodes
- Controller nodes need to be of the same type. Different controller node types cannot be mixed in the same chassis
- Each switched B10200 Controller Node contains two (2) or three (3) OCP slots for host adapters (Slot 1, Slot 3 and Slot 4), and Slot 1 (when not used for HBA) and Slot 2 are used for expansion

Configuration Information

- For a switchless system, each B10140 100 GbE Controller Node (S0S39A or S0S43A) requires (1) 100 GbE 2-port OCP HBA (S2A68A) in Slot 1 (see Adapters section); maximum of two (2) HBAs for host connectivity
- For switchless systems, B10130 (S0R21A, S0R41A) and B10140 (S4V66A, S4V67A) each Controller Node can support up to three (3) HBAs for host connectivity
- For switchless systems, B10120 (S0S38A, S0R40A) each Controller Node can support up to three (3) HBAs for host connectivity, with Slot 1 limited to the 10/25GbE HBA
- When Expansion Shelves are configured on a switchless system, each B10130 or B10140 Controller Node requires (1) 100 GbE 2-port OCP HBA (S2A68A) in Slot 2 (see Adapters section)
- For a switched system, each Controller Node requires (1) 100 GbE 2-port OCP HBA (S2A68A) in Slot 2 and optionally (1) 100 GbE 2-port OCP HBA (S2A68A) in Slot 1 (see Adapters section)

HPE Alletra Storage MP Switches	**SKU**
HPE Alletra Storage MP 32-port 100GbE Switch Bundle	S1R08A
HPE Alletra Storage MP 32-port 100GbE -48VDC Switch Bundle	S1S69A
HPE Switch Pair Installation Kit with 4U Cable Tray	S0A95A
HPE Switch Pair Installation Kit without Tray	S3V78A
HPE Alletra Storage 2U Cable Tray	S4Q37A

- When switched systems are configured, min two (2)/max two (2) of the switch bundles are added to the configuration
- The Alletra Storage MP switch bundles can only be used for interconnectivity of the Alletra Storage MP B10000 controller nodes and the Alletra Storage MP 10000 expansion shelf nodes
- The Alletra Storage MP switch bundles **cannot** be used for connectivity to host servers or any other systems
- The Alletra Storage MP -48VDC switch bundles (S1S69A) are used when DC power is selected for the system
- Switched configurations require an Installation Kit —
    - The 4U Cable Tray Installation Kit (S0A95A) is the default for all switched configurations and includes a 4U cable tray and the installation kit; this kit is required if more than 8 chassis are configured (controller chassis plus JBOF chassis)
    - The 2U Cable Tray (S4Q37A) can be used if 8 or fewer chassis are configured (controller chassis plus JBOF chassis). The Installation Kit (S3V78A) must also be ordered when ordering the 2U Cable Tray
    - The Installation Kit without a tray (S3V78A) can be selected for switched configurations that will not grow beyond a total four (4) chassis (controller chassis plus JBOF chassis)

Step 2: Choose power supplies

Description	**SKU**
HPE Alletra Storage MP C14 1600W AC Power Supply	R7C76A
HPE Alletra Storage MP C14 2200W AC Power Supply	R9Z97A
HPE Alletra Storage MP 1600W -48VDC Power Supply	R7C78A
HPE Alletra Storage MP C20 1500W/1800W AC Power Supply	R7C77A

- The Alletra Storage MP 10000 Chassis requires two (2) Power Supplies per chassis
- Power Supplies are factory integrated in the Storage chassis for shipment
- The C14 1600 W AC Power Supply (R7C76A) is 80 PLUS Platinum certified
- The C14 1600 W AC Power Supply (R7C76A) supports high-line; no low-line support
- The C14 2200 W AC Power Supply (R9Z97A) is 80 PLUS Titanium certified for EU Lot9 requirements
- The C20 1500 W /1800 W AC Power Supply (R7C77A) is 80 PLUS Titanium certified for EU Lot9 requirements

Configuration Information

- The C14 2200 W AC Power Supply (R9Z97A) supports high-line; no low-line support
- The C20 1500 W /1800 W AC Power Supply (R7C77A) supports both low-line and high-line (switching)
- The C20 1500 W AC Power Supply (R7C77A) requires a power cord with a C19 connector
- The DC Power Supply (R7C78A) not available for China, Taiwan, and India
- R7C77A is not NEBS Level 3 certified at this time.

HPE Alletra Storage MP Power Cord	SKU
HPE C13 - C14 250V 10Amp Black 1.4m WW Power Cord	R9R52A
HPE C13 - C14 250V 10Amp Gray 1.4m WW Power Cord	R9S00A
HPE C13 - C14 250V 10Amp Black 1.37m IN Power Cord	R9R53A
HPE C13 - C14 250V 10Amp Gray 1.37m IN Power Cord	R9S01A
HPE C13 - C14 250V 10Amp Black 2m WW Power Cord	S3L68A
HPE C13 - C14 250V 10Amp Gray 2m WW Power Cord	S3L69A
HPE C13 - C14 250V 10Amp Black 2m IN Power Cord	S3L70A
HPE C13 - C14 250V 10Amp Gray 2m IN Power Cord	S3L71A
HPE C19 - NEMA 5-15P 125V 15Amp US Power Cord	R9R71A
HPE NEMA L6-30P - C19 250V 20Amp 4.5m US/JP Power Cord	R9R74A
HPE C19 - JIS8303 125V 16Amp TW/JP Power Cord	R9R73A
HPE C19 - C20 250V 16Amp Black 2.5m WW Power Cord	R9S02A
HPE C19 - C20 250V 16Amp Gray 2m WW Power Cord	R9R66A
HPE C19 - C20 250V 16Amp Black 2.5m IN Power Cord	R9S03A
HPE C19 - C20 250V 16Amp Gray 2m IN Power Cord	R9R67A
HPE 1600W -48VDC 600V 3.5m Power Cable Kit	P22173-B21
HPE 1600W -48VDC Power Cable Lug Kit	P36877-B21

- R9R52A, R9S00A, R9S02A, and R9R66A are for worldwide use except for India
- R9R53A, R9S01A, R9S03A, and R9R67A are for India use only
- The 2 m power cords are required for the switches

Step 3: Choose adapters

Host adapters are used for connection to hosts. They can be ordered standalone to be installed in the field or they can be factory integrated into controller nodes. HPE Alletra Storage MP B10000 does not have any built-in host ports therefore any configuration needs to have at least one (1) host adapter per controller node. For RCIP remote copy, the Replication HBAs (R7C82A) can be ordered as an option.

HPE Alletra Storage MP Host Adapters	SKU
HPE Alletra Storage MP 100GbE 2-port OCP Host Bus Adapter	S2A68A
HPE Alletra Storage MP 64Gb 4-port Fibre Channel OCP LPm38104 Host Bus Adapter	S4V68A
HPE Alletra Storage MP 32Gb 4-port Fibre Channel OCP LPm37004 Host Bus Adapter	S2S64A
HPE Alletra Storage MP 32/64Gb 4-port Fibre Channel Host Bus Adapter	R7C90A
HPE Alletra Storage MP 10/25GbE 4-port Host Bus Adapter	R7C82A

HPE Alletra Storage MP Replication	SKU
HPE Alletra Storage MP 10/25GbE 4-port Host Bus Adapter	R7C82A

Configuration Information

HPE Alletra Storage MP Backend Connectivity	SKU
HPE Alletra Storage MP 100GbE 2-port OCP Host Bus Adapter	S2A68A
HPE 100Gb QSFP28 to QSFP28 0.5m Direct Attach Copper Cable	R8M59A
HPE Aruba Networking 100G QSFP28 to QSFP28 1m Direct Attach Copper Cable	R9F77A
HPE Aruba Networking 100G QSFP28 to QSFP28 2m Active Optical Cable	R9F76A

Requirements for 100 GbE backend connectivity

The table below shows the adapter and cable requirements for backend connectivity for both switched and switchless configurations. The recommended cables are shown, alternate active optical cable (AOC) lengths in Step 5 may be used.

Alletra Storage MP B10100 Nodes (switchless)	100 GbE HBA per node	Cables per node
B10120 controller nodes	N/A	N/A
B10130 controller nodes	(1) S2A68A if JBOF used	(2) R9F77A if JBOF used
B10140 controller nodes	(1) S2A68A if JBOF used	(2) R9F77A if JBOF used
B10140 100Gb controller nodes	(1) S2A68A and (1) S2A68A if JBOF used	(1) R8M59A and (2) R9F77A if JBOF used
B10010 expansion shelf nodes (JBOF)	(1) S2A68A	N/A

Alletra Storage MP B10200 Nodes (switched)	100 GbE HBA per node	Cables per node
B10230 controller nodes	(1 or 2) S2A68A	(2 or 4) R9F76A
B10240 controller nodes	(1 or 2) S2A68A	(2 or 4) R9F76A
B10010 expansion shelf nodes (JBOF)	(1) S2A68A	(2) R9F76A (Perf Optimized) (1) R9F76A (Cap Optimized)

Host Bus Adapter Transceiver Kit	SKU
HPE 10Gb SFP+ Short Wave 1-pack Pull Tab Optical Transceiver	Q2P65A
HPE 10GBASE-T SFP+ RJ45 30m 1-pack Transceiver	R0R41B
HPE 10GbE SFP+ LR 10km 1-pack Extended Temperature Pull Tab Transceiver	S6B57A
HPE 25Gb SFP28 Short Wave Extended Temperature 1-pack Pull Tab Optical Transceiver	Q2P64B
HPE 25GbE SFP28 LR 10km 1-pack Extended Temperature Pull Tab Transceiver	S6B58A
HPE 32Gb SFP28 Short Wave 1-pack LP Pull Tab Optical Transceiver	S3N85A
HPE 32Gb SFP28 Short Wave 1-pack Pull Tab Optical Transceiver	Q2P62A
HPE 64Gb SFP56 Short Wave 1-pack LP Pull Tab Optical Transceiver	S4V69A
HPE Storage 64Gb SFP56 Short Wave 1-pack Extended Temperature Pull Tab Transceiver	S2T34A
HPE 100GbE QSFP28 SR4 100m Transceiver	Q2F19A
HPE Storage 100GbE QSFP28 SR4 Extended Temperature Pull Tab Transceiver	S2T35A
HPE 100GbE QSFP28 LC DR1 500m 1-pack Transceiver	R8M61A

Configuration Information

Notes:

- Each Controller Node must have at least one HBA for host connectivity. A Controller Node without any host adapters is not a supported configuration.
- Maximum of two (2) or three (3) Fibre Channel HBA (S2S64A) can be ordered per Controller Node. Mixing of different Fibre Channel HBA SKUs on the same system is not supported
- Maximum of two (2) 10/25 GbE HBA (R7C82A) can be ordered per Controller Node.
- For 2-node switchless systems, B10130 (S0R21A, S0R41A) and B10140 (S4V66A, S4V67A) each Controller Node can support up to three (3) HBAs for host connectivity—this can be a mix of FC and 10/25 GbE HBAs.
- Refer to SPOCK and the Alletra Storage MP iSCSI Best Practices document on Seismic for iSCSI configuration details.
- For Unified Block and File, the 10/25 GbE HBA (R7C82A) must be installed in Slot 4 with Ports 1 and 2 dedicated to File. Unified Block and File requires ArcusOS 10.5.0 or later
- The S2S64A 32Gb Fibre Channel Adapter includes two (2) 32Gb transceivers. Additional S3N85A 32Gb transceivers are optional and must be ordered in pairs.
- The S4V68A 64Gb Fibre Channel Adapter includes two (2) 64Gb transceivers. Additional S4V69A 64Gb transceivers are optional and must be ordered in pairs.
- The R7C90A 32/64Gb Fibre Channel Adapter does not include any transceivers. The Q2P62A 32Gb or S2T34A 64Gb transceivers must be ordered in pairs separately—min 2, max 4 per HBA.
- Both the R7C90A and S2S64A Fibre Channel HBAs are 64Gb capable; with ArcusOS 10.6.0 or later:
  - The S4V69A 64Gb transceivers can be used to upgrade existing S2S64A 32Gb Fibre Channel Adapters
  - The S2T34A 64Gb transceivers can be used to upgrade existing R7C90A 32/64Gb Fibre Channel Adapters
  - No mixing of 32Gb and 64Gb transceivers in the same HBA.
- The 10/25GbE Adapter does not include any transceivers, the transceivers must be ordered in pairs separately.
- For each 10/25GbE Adapter, the 10Gb SFPs or 25Gb SFPs can be ordered with a minimum two (2), and maximum four (4).
- A pair of 10Gb SFPs and a pair of 25Gb SFPs can be mixed in the same 10/25GbE Adapter.
- 10/25Gb SFPs are not required if DAC cables are selected
- The 25Gb SFP supports only the 25Gb speed—it does not support 10Gb or 1Gb
- The 10Gb SFP supports only the 10Gb speed—it does not support 25Gb or 1Gb
- When the HPE 100GbE QSFP28 LC DR1 500m Transceiver (R8M61A) is used with HPE Alletra Storage MP B10000, the maximum operating ambient inlet temperature must be reduced from 35°C (95°F) to 30°C (86°F) due to the transceiver's thermal and power characteristics.

Step 4: Choose drives

Drives are orderable at the time the array is purchased and can be added in the future when additional capacity is required. HPE Alletra Storage MP B10000 supports SSDs with NVMe interface and QLC or TLC NAND technology.

HPE Alletra Storage MP Encrypted TLC Drives	SKU
HPE Alletra Storage MP 1.92TB NVMe SFF Self-encrypting SSD	R9H66A
HPE Alletra Storage MP 3.84TB NVMe SFF Self-encrypting SSD	R9H67A
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

Configuration Information

Description	SKU
HPE Alletra Storage MP 1.92TB NVMe SFF FIPS Encrypted SSD	R9H70A
HPE Alletra Storage MP 3.84TB NVMe SFF FIPS Encrypted SSD	R9H71A
HPE Alletra Storage MP 7.68TB NVMe SFF FIPS Encrypted SSD	R9H72A
HPE Alletra Storage MP 15.36TB NVMe SFF FIPS Encrypted SSD	R9H73A
HPE Alletra Storage MP 30.72TB NVMe SFF FIPS Encrypted SSD	S4P49A
HPE Alletra Storage MP 1.92TB NVMe SFF FIPS Encrypted TAA-compliant SSD	S0Q01A
HPE Alletra Storage MP 3.84TB NVMe SFF FIPS Encrypted TAA-compliant SSD	S0Q02A
HPE Alletra Storage MP 7.68TB NVMe SFF FIPS Encrypted TAA-compliant SSD	S0Q03A
HPE Alletra Storage MP 15.36TB NVMe SFF FIPS Encrypted TAA-compliant SSD	S0Q04A

Notes:

- Minimum of eight (8) TLC SSDs per system
- Minimum of eight (8) TLC SSDs per chassis
- Mixing of different capacity SSDs in single system is not supported
- Mixing of TLC and QLC SSDs in a single system is not supported

HPE Alletra Storage MP Encrypted QLC Drives	SKU
HPE Alletra Storage MP 15.36TB NVMe SFF QLC SSD	S3L73A
HPE Alletra Storage MP 30.72TB NVMe SFF QLC SSD	S3L74A

Notes:

- Minimum of eight (8) QLC SSDs per system
- Minimum of eight (8) QLC SSDs per chassis
- Mixing of different capacity SSDs in single system is not supported
- Mixing of TLC and QLC SSDs in a single system is not supported
- QLC drives are self-encrypting
- When 30 TB QLC SSDs are used, system operating temperature is 5° to 30° C
- Always reference sizing tools (e.g., Ninja Online) when using QLC SSDs to ensure the QLC drive performance and wear life is appropriate for the given workload
- QLC SSDs have a lower Drive Writes Per Day (DWPD) endurance compared to TLC SSDs. DWPD indicates the number of times the entire drive can be overwritten each day for its entire life. The QLC SSDs in the HPE Alletra Storage MP have a DWPD of 0.26 whereas the TLC SSDs have a DWPD of 1.0.

Step 5: NVMe Expansion Shelf Just a Bunch of Flash (JBOF)

The HPE Alletra Storage MP 10000 NVMe all-flash expansion shelf (JBOF) is a 2U chassis to add additional system capacity. The expansion shelf supports 8-24 NVMe SSDs, in two-drive increments with up to two (2) Expansion Shelves per system (switchless) and up to sixteen (16) Expansion Shelves per system (switched). Each expansion shelf requires:

Notes:

- Min 2/Max 2 of Expansion Shelf Nodes
- Min 2/Max 2 Power Supplies and power cords
- Min 8/Max 24 SSDs (see SSDs listed above)
- Min 1/Max 1 100 GbE 2-port OCP HBA (S2A68A) per Expansion Shelf Node
- Switchless: Min 2/Max 2 100G cables (1 per Expansion Shelf Node), 100G 1 m DAC Cable (R9F77A) recommended—Active Optical Cables listed also supported

Configuration Information

- Switched: Min 2/Max 2 of 100G Active Optical Cable (AOC) for Performance Optimized configurations (1-8 JBOFs); the R9F76A 100G QSFP28 to QSFP28 2 m Active Optical Cable is the default; other AOC lengths listed also supported.
- Switched: Min 1/Max 1 of 100G Active Optical Cable (AOC) for Capacity Optimized configurations (9-16 JBOFs); the R9F76A 100G QSFP28 to QSFP28 2 m Active Optical Cable is the default; other AOC lengths listed also supported.

Description	SKU
HPE Alletra Storage MP 10001 NVMe Configure-to-order Expansion Shelf	S1J10A
HPE Alletra Storage MP 10010 Expansion Shelf Node	S1R28A
HPE Alletra Storage MP 10001 NVMe Configure-to-order TAA-compliant Expansion Shelf	S0S46A
HPE Alletra Storage MP 10010 TAA-compliant Expansion Shelf Node	S1R29A
HPE Alletra Storage MP 100GbE 2-port OCP Host Bus Adapter	S2A68A
HPE Aruba Networking 100G QSFP28 to QSFP28 1m Direct Attach Copper Cable	R9F77A
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
HPE Storage 100GbE QSFP28 to QSFP28 5m Extended Temperature Active Optical Cable	S2T38A
HPE Storage 100GbE QSFP28 to QSFP28 10m Extended Temperature Active Optical Cable	S2T39A
HPE Storage 100GbE QSFP28 to QSFP28 15m Extended Temperature Active Optical Cable	S2T40A
HPE Storage 100GbE QSFP28 to QSFP28 25m Extended Temperature Active Optical Cable	S2T41A

- The minimum supported quantity is eight (8) drives per chassis
- Drives can be ordered in increments of two drives from 8 to 24 drives per chassis
- HPE Alletra Storage B10000 supports only RAID 6
- For initial configurations, and within a system (base array plus any expansion shelves), all drives must be of the same capacity and type. Mixing drives of different capacities in the same system is not allowed.
- Drives must be loaded starting from the leftmost slot (slot 1) to the right and leaving no empty slots between drives.
- The switchless 2-node 16-core and 32-core systems support up to two (2) expansion shelves
- The switchless 4-node 32-core systems support up to one (1) expansion shelf
- The switched systems support up to eight (8) expansion shelves (Performance Optimized), or 9-16 expansion shelves (Capacity Optimized).
    - When a switched system is ordered with 9-16 JBOFs, it is configured as Capacity Optimized
    - When a switched system is ordered with 1-8 JBOFs, it is configured as Performance Optimized
- Capacity Optimized systems require HPE Alletra Storage MP ArcusOS version 10.4.0 or later
- Capacity Optimized configurations are not supported with the 30.72 TB QLC drives
- The 8-core systems do not support expansion shelves
- When expansion shelves are used, drive quantities should be balanced across all shelves—base array shelf and expansion shelves

Configuration Information

HPE Encryption License	SKU
HPE Storage FIPS Data Encryption LTU	S0A99A
HPE Storage FIPS Data Encryption E-LTU	S0A99AEE
HPE Storage Data Encryption LTU	S0A98A
HPE Storage Data Encryption E-LTU	S0A98AEE

- A data encryption license (LTU) is required to enable encryption on HPE Alletra Storage MP B10000. One encryption license is required for each encrypted storage solution. Once encryption is enabled on the storage solution, it cannot be disabled.
- Encryption can be turned on, non-disruptively, at any time, even after data has been written to the system.
- Supports Utimaco® Enterprise Secure Key Manager (ESKM) 4.0, 5.0 and Gemalto® SafeNet KeySecure k460 centralized key management
- The local key manager is included in the HPE Alletra Storage ArcusOS. There is not a separately orderable part number for the local key manager

Step 6: Choose cables for host connectivity

HPE Alletra Storage MP B10000 requires cables for host connectivity, and replication. The OM4 fiber cables are used for host connectivity and Peer Motion.

OM4 Cables	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

Direct Attach Copper Cables (10 GbE) - HPE Networking Comware	SKU
HPE Networking X240 10G SFP+ SFP+ 3m DAC Cable	JD097C
HPE Networking X240 10G SFP+ SFP+ 5m DAC Cable	JG081C
HPE Networking Comware X240 40G QSFP+ to 4x10G SFP+ 3m Direct Attach Copper Splitter Cable	JG330A
HPE Networking Comware X240 40G QSFP+ to 4x10G SFP+ 5m Direct Attach Copper Splitter Cable	JG331A

Direct Attach Copper Cables (10 GbE) – HPE Aruba Networking	SKU
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

Direct Attach Copper Cables (10 GbE) – Cisco SKU	SKU

Direct Attach Copper Cables (10 GbE) - HPE BladeSystem	SKU
HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 3m Direct Attach Copper Cable	487655-B21
HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 5m Direct Attach Copper Cable	537963-B21

Configuration Information

Smart Active Optical Cables (25 GbE) - HPE	SKU
HPE 25GbE SFP28 to SFP28 3m Smart Active Optical Cable	Q9S67A
HPE 25GbE SFP28 to SFP28 5m Smart Active Optical Cable	Q9S68A

AOC/DAC Cables– HPE	SKU
HPE 25Gb SFP28 to SFP28 3m Direct Attach Copper Cable	844477-B21
HPE 25Gb SFP28 to SFP28 7m Active Optical Cable	844483-B21
HPE 100Gb QSFP28 to 4x25Gb SFP28 3m Direct Attach Copper Cable	845416-B21

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

Step 7: Choose Bluetooth connectivity kit option

HPE Alletra Storage MP 10000 supports a Chassis Discovery Module (CDM) which enables the system to have its setup initiated through a Bluetooth connection to a mobile app. This is an optional feature which requires the Bluetooth Connectivity Kit to be included.

Description	SKU
HPE Alletra Storage MP CDM Bluetooth Connect Kit	S0U79A

Step 8: Choose racking options

HPE Alletra Storage MP B10000 is compatible with most industry standard 4-post EIA 19-inch racks with square mounting holes. The B10000 can be factory configured and shipped in a rack or shipped without a rack for field integration into an existing rack. The racks used for factory integration are the HPE G2 Advanced Series Racks or the HPE G2 Enterprise Series Racks.

Factory Integration

A factory integrated HPE Alletra Storage MP B10000 is configured into the HPE Intelligent Series Rack with the appropriate power distribution units (PDUs). Other products such as servers or back-up products can be factory integrated in the rack and different PDUs can be added or selected (if needed) only via HPE Factory Express Services. Multiple HPE B10000 arrays can be factory integrated in the same rack.

HPE Intelligent Series Racks	SKU
HPE 42U 600mmx1200mm G2 Enterprise Shock Rack	P9K40A
HPE G2 Rack 42U 1200mm Side Panel Kit	P9L16A
HPE 42U 600mmx1200mm G2 Kitted Advanced Shock Rack with Side Panels and Baying	P9K10A
HPE 42U 600mmx1075mm G2 Enterprise Shock Rack	P9K38A
HPE G2 Rack 42U 1075mm Side Panel Kit	P9L15A

Configuration Information

Description	SKU
HPE 42U 600mmx1075mm G2 Kitted Advanced Shock Rack with Side Panels and Baying	P9K08A

– HPE recommends using HPE Alletra Storage MP B10000 in 1200 mm deep racks with 3-phase power because this combination provides the best rack density.

Notes:

– For more information on rack options: Rack and Power Infrastructure Products
– For more information on PDUs: https://www.HPE.com/us/en/product-catalog/servers/power-distribution-units.html

Step 9: Choose software

Hewlett Packard Enterprise provides an extensive selection of features in the HPE Alletra Storage ArcusOS software, including Virtual Copy, Remote Copy, Priority Optimization, Peer Motion, and Peer Persistence, etc. Data Encryption is offered separately with a LTU (see the Drive section for more information).

HPE Alletra Software and Support SaaS

HPE Alletra Storage MP B10000 include a subscription to HPE Alletra Storage MP B10000 Software and Support SaaS that includes all-inclusive software features for the specified raw capacity and term, and it enables cloud-based management of the array from the HPE Data Services Cloud Console and access to data services, and related support.

– HPE Alletra Storage MP B10000 Software and Support SaaS SKU must be selected for each storage solution
– The quantity of SaaS is determined by the raw capacity, in TB, configured. For example, if 100 TB is configured, then the SaaS quantity will equal 100 for the term ordered
– The standard terms are shown below; other terms may be available by exception

HPE Alletra Software and Support SaaS	SKU
HPE Alletra Storage MP B10000 per TB 3-year Software and Support SaaS	S3Q00AAE
HPE Alletra Storage MP B10000 per TB 4-year Software and Support SaaS	S3Q01AAE
HPE Alletra Storage MP B10000 per TB 5-year Software and Support SaaS	S3Q02AAE

HPE Alletra Software and Support SaaS Upgrades and Renewal	SKU
HPE Alletra Storage MP B10000 per TB GLP Upgrade 1-year Software and Support SaaS	S6M49AAE
HPE Alletra Storage MP B10000 per TB GLP Upgrade 3-year Software and Support SaaS	S6M50AAE
HPE Alletra Storage MP B10000 per TB GLP Upgrade 4-year Software and Support SaaS	S6M51AAE
HPE Alletra Storage MP B10000 per TB GLP Upgrade 5-year Software and Support SaaS	S6M52AAE
HPE Alletra Storage MP B10000 per TB GLP Upgrade 6-year Software and Support SaaS	S6M53AAE
HPE Alletra Storage MP B10000 per TB GLP Upgrade 7-year Software and Support SaaS	S6M54AAE
HPE Alletra Storage MP B10000 per TB Renewal Software and Support SaaS	S6J58AAE

In addition to the HPE Alletra Software and Support SaaS SKU, each system will have an HPE Alletra Storage ArcusOS LTU SKU. The quantity for the LTU SKU will always equal one (1) and will match the term of the SaaS SKU and Support

HPE Alletra Storage ArcusOS per TB 3-year LTU	S3Q00A
HPE Alletra Storage ArcusOS per TB 4-year LTU	S3Q01A
HPE Alletra Storage ArcusOS per TB 5-year LTU	S3Q02A

Configuration Information

Storage Management for the HPE Alletra Storage MP B10000

HPE Alletra Storage MP B10000 offers a few different options for managing the arrays which include cloud connectivity, air-gapped, and on-premises management.

HPE Data Services Cloud Console (DSCC)

HPE Data Services Cloud Console is a cloud-native management application within the GreenLake platform. It provides a unified, SaaS-based control plane to manage, monitor, and automate distributed data infrastructure and storage fleets from a single interface.

DSCC offers a **read-only mode** which allows the HPE Alletra Storage MP B10000 to remain connected to GreenLake/DSCC in read-only mode where no DSCC user can make changes to the storage system. It is for those security-conscious customers who want to enjoy the benefits of the advanced analytics that are available with cloud-based DSCC.

Air-gapped management

Air-gapped storage arrays are factory-activated to ensure they cannot connect to any instance of DSCC. The array is shipped to the customer with the air-gapped license factory-installed. These arrays are distinct from those associated with HPE Alletra Storage MP Disconnected, as air-gapped provides local, on-array, single-system management only; with no DSCC access or cloud connectivity.

HPE Alletra Storage MP Disconnected

On-premises appliance providing DSCC-like functionality in a fully disconnected environment. **Customers that require air-gapped configurations and simple local, single-system management should utilize the air-gapped management referenced above**. When multi-array management in a disconnected environment is required, the HPE Alletra Storage MP Disconnected is recommended. Additional details on features and how to purchase can be found below.

HPE Alletra Storage MP Disconnected

HPE Alletra Storage MP Disconnected a simple-to-manage, fully disconnected, and secure block storage solution for an isolated environment without internet connections. This solution is built on HPE Alletra Storage MP B10000 with data services delivered on the GreenLake Dedicated Platform for regulated environments, the disconnected counterpart to the GreenLake. It offers the same cloud experience as GreenLake, but within your data centers in an isolated environment. It allows you to meet regulatory requirements with ironclad, highly available enterprise-grade block storage, leveraging a cloud-like operational experience to efficiently manage your data in dark sites.

New purchase of B10000 Array

For ordering, in the disconnected menu select the SKU S4W12A – HPE Alletra Storage MP Disconnected. This will populate the appliance, and all other components associated with On-Premises management. HPE Alletra Storage MP Disconnected Solution Add-on Tracking (S6C37A) is used when adding a new HPE Alletra Storage MP B10000 to an existing GreenLake Dedicated Platform.

Description	SKU
HPE Alletra Storage MP Disconnected LTU	S4W12A
HPE Alletra Storage MP Disconnected Solution Add-on Tracking	S6C37A

Configuration Information

Existing B10000 customer on air-gapped/cloud connected license
This solution is intended for customers who already have an HPE Alletra MP B10000 system and wish to convert it from a cloud-connected or air-gapped configuration to a fully disconnected deployment.

To begin the conversion process, users should search for "Disconnected" or "HPE Alletra Storage MP Disconnected" in the Search Product field and select SKU 'S4W12A – HPE Alletra Storage MP Disconnected'. Upon selecting the create option, the user will be guided to the Solution Wizard. Within the wizard, the solution type must be set to 'Expansion Solution (Brownfield)', which will automatically apply default selections including a TAA-compliant server and a 5-year support term. Storage selection is not required, as this configuration is applicable only to existing B10000 systems. The resulting Bill of Materials (BOM) will include the disconnected appliance and the necessary licenses to complete the conversion, specifically SKU S4W12AAE – HPE Alletra Storage MP B10000 Disconnected E-LTU.

Description	SKU
HPE Alletra Storage MP Disconnected E-LTU	S4W12AAE

Step 10: Choose support

Choose HPE Services Tech Care to experience the new operational service for HPE products. For Alletra Storage MP B10000, HPE Services Tech Care is available in three response levels: Basic which provides next-business-day parts exchange where available, Essential which provides 4-hour parts exchange where available, and Critical which includes a 6-hour Hardware-Call-to-Repair for severity 1 and severity 2 incidents where available and outage management response for severity 1 incidents.

All levels of Tech Care enjoy 7x24 access to experienced technical engineers upon calling HPE for support.
https://www.HPE.com/psnow/doc/a50003571enw

Step 11 – Choose installation options

Storage Installation and Startup Service

HPE Alletra Storage MP B10000 Installation and Startup Service provides deployment of your B10000, helping to ensure proper installation in your storage environment as well as helping you increase the benefit from your storage investment. The service provides activities required to help you deploy your HPE Alletra Storage MP B10000 into operation.

Self-Installation

Customers and partners also have the option to self-install HPE Alletra Storage MP B10100 (switchless). The self-installation option can be selected in the configurator tool (OCA) and will remove the Storage Installation and Startup Service from the quote. HPE Alletra Storage MP B10200 (switched) models and configurations are not eligible for self-installation at this time.

To successfully install the HPE Alletra B10000 Storage, the installer should:

- Have a good understanding and knowledge of Storage Area Networks, Fibre Channel fundamentals and a basic understanding of TCP/IP and other networking protocols (DNS/NTP).
- Have experience creating Storage LUNs, presenting/exporting LUNs to a server and formatting the LUNs to make them usable for applications.
- Be able to troubleshoot hardware and software issues using logs and documentation.

Configuration Information

If the installer does not meet the profile or is not comfortable with the self-installation process, Hewlett Packard Enterprise recommends engaging the Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Channel Partner to purchase HPE Deployment Services.

Customer responsibilities

- Ensure that the host and SAN environment is supported and compliant with HPE recommendations and best practices. Host and SAN Implementation Guides are available at https://support.HPE.com/hpesc/public/home. Support Matrix are available on SPOCK (HPE Storage Single Point of Connectivity Knowledge) http://www.HPE.com/storage/spock.
- Resolve any problems with their SAN and host environment prior to installing the HPE Alletra Storage MP B10000.

Notes: Customers performing a self-install (according to rules identified above) will not void their warranties and will be fully supported.

HPE Alletra Software MP B10000 Upgrades

When upgrading Controller Nodes or NVMe SSDs to an existing HPE Alletra Storage MP B10000, use the upgrade products shown below.

HPE Alletra Storage MP B10000 Controller Node Field Upgrade	SKU
HPE Alletra Storage MP B10130 Controller Node Field Upgrade	S0R21B
HPE Alletra Storage MP B10130 TAA-compliant Controller Node Field Upgrade	S0S41B
HPE Alletra Storage MP B10140 Controller Node Field Upgrade	S4V66B
HPE Alletra Storage MP B10140 TAA-compliant Controller Node Field Upgrade	S4V67B
HPE Alletra Storage MP B10230 Controller Node Field Upgrade	R7D02B
HPE Alletra Storage MP B10230 TAA-compliant Controller Node Field Upgrade	S0S42B
HPE Alletra Storage MP B10240 Controller Node Field Upgrade	R7D03B
HPE Alletra Storage MP B10240 TAA-compliant Controller Node Field Upgrade	S0R20B

HPE Alletra Storage MP B10000 Upgrade SSDs	SKU
HPE Alletra Storage MP 1.92TB NVMe Self-encrypting Upgrade SSD	R9H66C
HPE Alletra Storage MP 3.84TB NVMe Self-encrypting Upgrade SSD	R9H67C
HPE Alletra Storage MP 7.68TB NVMe Self-encrypting Upgrade SSD	R9H68C
HPE Alletra Storage MP 15.36TB NVMe Self-encrypting Upgrade SSD	R9H69C
HPE Alletra Storage MP 30.72TB NVMe Self-encrypting Upgrade SSD	S1Z68C
HPE Alletra Storage MP 1.92TB NVMe FIPS 140-3 Encrypted Upgrade SSD	R9H70C
HPE Alletra Storage MP 3.84TB NVMe FIPS 140-3 Encrypted Upgrade SSD	R9H71C
HPE Alletra Storage MP 7.68TB NVMe FIPS 140-3 Encrypted Upgrade SSD	R9H72C
HPE Alletra Storage MP 15.36TB NVMe FIPS 140-3 Encrypted Upgrade SSD	R9H73C
HPE Alletra Storage MP 30.72TB NVMe FIPS 140-3 Encrypted Upgrade SSD	S4P49C
HPE Alletra Storage MP 1.92TB NVMe FIPS 140-3 Encrypted TAA-compliant Upgrade SSD	S0Q01C
HPE Alletra Storage MP 3.84TB NVMe FIPS 140-3 Encrypted TAA-compliant Upgrade SSD	S0Q02C
HPE Alletra Storage MP 7.68TB NVMe FIPS 140-3 Encrypted TAA-compliant Upgrade SSD	S0Q03C

Configuration Information

Description	SKU
HPE Alletra Storage MP 15.36TB NVMe FIPS 140-3 Encrypted TAA-compliant Upgrade SSD	S0Q04C
HPE Alletra Storage MP 15.36TB NVMe QLC Upgrade SSD	S3L73C
HPE Alletra Storage MP 30.72TB NVMe QLC Upgrade SSD	S3L74C

Technical Specifications

HPE Alletra Storage MP B10000 Specifications				
Physical Dimensions	**Width in/mm**	**Depth in/mm**	**Height in/mm/U**	**Weight lb/kg**
HPE 42U 1075 mm G2 Advanced Series Rack	23.50/ 597	43.78/ 1111	78.99/ 2006	281/ 127
HPE 42U 1075 mm G2 Enterprise Series Rack	23.54/ 598	44.30/ 1125	78.98/ 2007	230/ 105
HPE 42U 1200 mm G2 Advanced Series Rack	23.50/ 597	50.65/ 1286	78.99/ 2006	311/ 141
HPE 42U 1200 mm G2 Enterprise Series Rack	23.54/ 598	51.19/ 1300	78.98/ 2007	251/ 114
HPE Alletra Storage MP B10000 Base Enclosure (Enclosure, two Controller IOMs, two PS, one CDM, no drives, no HBAs)	19.00/ 483	33.11/ 841	3.44/ 87.5/ 2	74.0/ 33.6
HPE Alletra Storage MP B10000 Base Enclosure Packaging Pallet	23.00/584 24.00/610	38.75/984 40.00/1016	11.50/292	
HPE Alletra Storage MP NVMe SSD with carrier	3.11/ 79	6.57/ 167	0.59/ 15.0	0.63/ 0.28
HPE 32Gb 4-port FC Host Bus Adapter	3.33/ 84.6	5.20/ 132	0.59/ 15.0	0.50/ 0.23
HPE 10/25GbE 4-port Ethernet Host Bus Adapter	3.33/ 84.6	5.20/ 132	0.59/ 15.0	0.50/ 0.23

Power Requirements

Input Voltage - AC PCM options

- HPE Alletra Storage MP B10000:
  - High-Line: 200 to 240 VAC (50 to 60 Hz)
  - Low-Line: 100 to 120 VAC (50 to 60 Hz)
  - DC: -48 VDC

Notes:

- Refer to the Power Supplies section to find the proper power supplies for the intended infrastructure
- Refer to the HPE Power Advisor online tool or Ninja Online for power consumption, heat loading, and circuit sizing information.

Environmental Specifications

Operating Temperature		
– **Standard**	41°F to 95°F (5°C to 35°C) - Reduce the rating by 1°F for each 1,000 ft altitude (1.8°C/1,000 m)	
– **with 30 TB QLC SSDs**	41°F to 86°F (5°C to 30°C) - Reduce the rating by 1°F for each 1,000 ft altitude (1.8° C/1,000 m)	
– **with R8M61A SFP**	41°F to 86°F (5°C to 30°C) - Reduce the rating by 1°F for each 1,000 ft altitude (1.8° C/1,000 m)	
Shipping Temperature	-30°C to 60°C (-22°F to 140°F). The maximum temperature change rate is 20°C per hour (36°F per hour).	
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, 27C Ambient**	Maximum, 100% Duty Cycle Fans
HPE Alletra Storage MP Base	58.9 dBA to 72 dBA	78.3 dBA
Notes: **Typical Acoustic emission varies based on hardware configuration and options		

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
- BSMI
- cCSAus
- CE
- ENERGY STAR (B10140)
- FCC Class A
- IC Class A
- KCC
- Morocco
- NEBS Level 3
- RCM
- VCCI
- WEEE
- China RoHS
- EU RoHS
- UKCA

Summary of Changes

Date	Version History	Action	Description of Change
02-Nov-2026	Version 33	Changed	Sustaining updates have been implemented on Standard Features and Technical Information sections.
		Removed	Obsolete or not supported SKUs removed - K2Q21A, K2Q22A, QK701A
08-Sep-2026	Version 32	Changed	The current version is a substantial platform-expansion update centered on ArcusOS 10.6.0. It extends switched configurations from a maximum of four controller nodes to six, adds higher-speed 64Gb Fibre Channel and 100Gb Ethernet host-connectivity choices, increases available adapter and port configurations, and documents nondisruptive architectural expansion paths. It also clarifies management choices for cloud-connected, read-only, air-gapped, and fully disconnected environments.
		Added	New SKUs added - S4V68A, S2A68A, S4V69A, S2T34A, Q2F19A, S2T35A, R8M61A, S4W12AAE
20-Jul-2026	Version 31	Changed	Configuration Information section was updated – New Host Bus Adapter Transceiver Kits have been added,
		Added	New SKUs added - S6B57A, S6B58A.
		Removed	Obsolete or not supported SKUs removed – J9151E, Jl486A, S7J58A, S7J59A, S7L76A, S7L77A
04-May-2026	Version 30	Changed	HPE Timeless Storage program information was updated. Main updates: – Renewal Price Protection – HPE Alletra Storage MP B10000 Disconnected – HPE Alletra Storage MP B10000 8-year Tech Refresh Tracking – S7Y63A.
02-Mar-2026	Version 29	Changed	Updated Step 9: Choose software to include Renewal section. – Added new optional SSD offerings in Step 4: Choose drives, including FIPS-encrypted and self-encrypting NVMe SFF SSDs (7.68 TB and 15.36 TB). – Added HPE Alletra Storage MP B10000 per TB Renewal Software and Support SaaS (S6J58AAE) to Step 9: Choose software.
19-Jan-2026	Version 28	Changed	Visual rebranding only—updated typography, colors, and design elements to align with new HPE brand standards. No technical specifications or content were modified.
01-Dec-2025	Version 27	Changed	Removed reference to "See HPE Store More Guarantee for more information" from the *Run any app – without compromise with a 100% data availability guarantee* section.
03-Nov-2025	Version 26	Changed	Overview, Standard Features and Configuration Information sections were updated - The new HPE Alletra Storage MP B10140 (4N) is available in a switchless. New purchase of B10000 Array information included.

Summary of Changes

Date	Version History	Action	Description of Change
08-Sep-2025	Version 25	Changed	Configuration Information section was updated - Cables per node SKUs were updated in Requirements for 100 GbE backend connectivity section.
		Removed	Obsolete SKUs were removed - S0S39A, S0S43A.
25-Aug-2025	Version 24	Changed	Configuration information section was updated - Notes on Power supplies section were updated. Power Cord SKUs were added.
		Added	R9S02A, R9R66A, R9S03A, R9R67A.
04-Aug-2025	Version 23	Changed	Configuration information section was updated - Notes on Racking Options Step 8 were updated.
		Added	S0R21B, S0S41B, S4V66B, S4V67B, R7D02B, S0S42B, R7D03B, S0R20B, R9H66C, R9H67C, R9H68C, R9H69C, S1Z68C, R9H70C, R9H71C, R9H72C, R9H73C, S4P49C, S0Q01C, S0Q02C, S0Q03C, S0Q04C, S3L73C, S3L74C.
07-Jul-2025	Version 22	Changed	Overview section was updated – New Features added Standard Features section was updated- Switches Information table updated Technical Specifications section was updated - Certifications/Markings.
02-Jun-2025	Version 21	Changed	Configuration Information section was updated Added new 30 TB FIPS SSD information.
28-Apr-2025	Version 20	Changed	Configuration Information and Technical Specifications sections were updated.
07-Apr-2025	Version 19	Changed	Overview, Service and Support and Configuration Information sections were updated.
03-Feb-2025	Version 18	Changed	Configuration Information section was updated.
16-Dec-2024	Version 17	Changed	Configuration Information section was updated.
02-Dec-2024	Version 16	Changed	Service and Support and Configuration Information sections were updated.
20-Nov-2024	Version 15	Changed	Overview, Standard Features, Service and Support and Configuration Information sections were updated. HPE Product Name Rebranding.
21-Oct-2024	Version 14	Changed	Overview, Standard Features, and Configuration Information sections were updated.
07-Oct-2024	Version 13	Changed	Standard Features, Configuration Information and Technical Specifications sections were updated.
19-Aug-2024	Version 12	Changed	Standard Features and Configuration Information sections were updated.
05-Aug-2024	Version 11	Changed	Overview, Standard Features, and Configuration Information sections were updated.
03-Jun-2024	Version 10	Changed	Configuration Information section was updated
26-Feb-2024	Version 9	Changed	Networking product names were updated.
05-Feb-2024	Version 8	Changed	Overview, Standard Features, and Configuration Information sections were updated.

Summary of Changes

Date	Version History	Action	Description of Change
08-Jan-2024	Version 7	Changed	Configuration Information section was updated
13-Nov-2023	Version 6	Changed	Overview, Standard Features, Service and Support and Configuration Information sections were updated. HPE Services Rebranding
02-Oct-2023	Version 5	Changed	Standard Features and Configuration Information sections were updated
07-Aug-2023	Version 4	Changed	Configuration Information and Technical Specifications sections were updated
10-Jul-2023	Version 3	Changed	Configuration Information and Technical Specifications sections were updated
15-May-2023	Version 2	Changed	Configuration Information section was updated
03-Apr-2023	Version 1	New	New QuickSpecs.

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