

FlashMax[®]

Highlights

- Powerful multiprotocol enterprise-class all-flash storage
- Patented architecture and DirectLink™ offer versatility and scale
- Comprehensive data protection and security features
- Advanced inline data reduction to maximize usable capacity
- NVMe-oF, FC, iSCSI, NFS, SMB, and S3 protocol support
- Up to 400G Ethernet and 64G Fibre Channel connectivity
- Up to 100 PB effective capacity, secured by hardware encryption
- Built for 100% uptime with end-to-end system redundancy



Advantages

- Unified: All-inclusive block, file, and object storage
- Expand: Add capacity on demand with low-latency PCIe
- Secure: Hardware-based zero-overhead data encryption
- Unstoppable: Enterprise-grade system high availability
- Efficiency: Maximize utilization of high-value flash capacity
- OpEx: Low energy consumption and high capacity density
- Transparent: All-inclusive software with no capacity taxes
- Proven: 24×7×365 support and up to 10 year warranty

FlashMax – Intelligent Multiprotocol All-Flash Storage for Mission-Critical Workloads

FlashMax is a powerful and fault-tolerant multiprotocol all-flash storage platform built for enterprise and cloud-scale environments. FlashMax supports unified block, file, and object storage to maximize capacity utilization and drive down costs through consolidation. Built for mission-critical operations, FlashMax excels at storage-intensive workloads, from virtualization and containers to databases, analytics, data warehouses, unstructured data, and digital content.

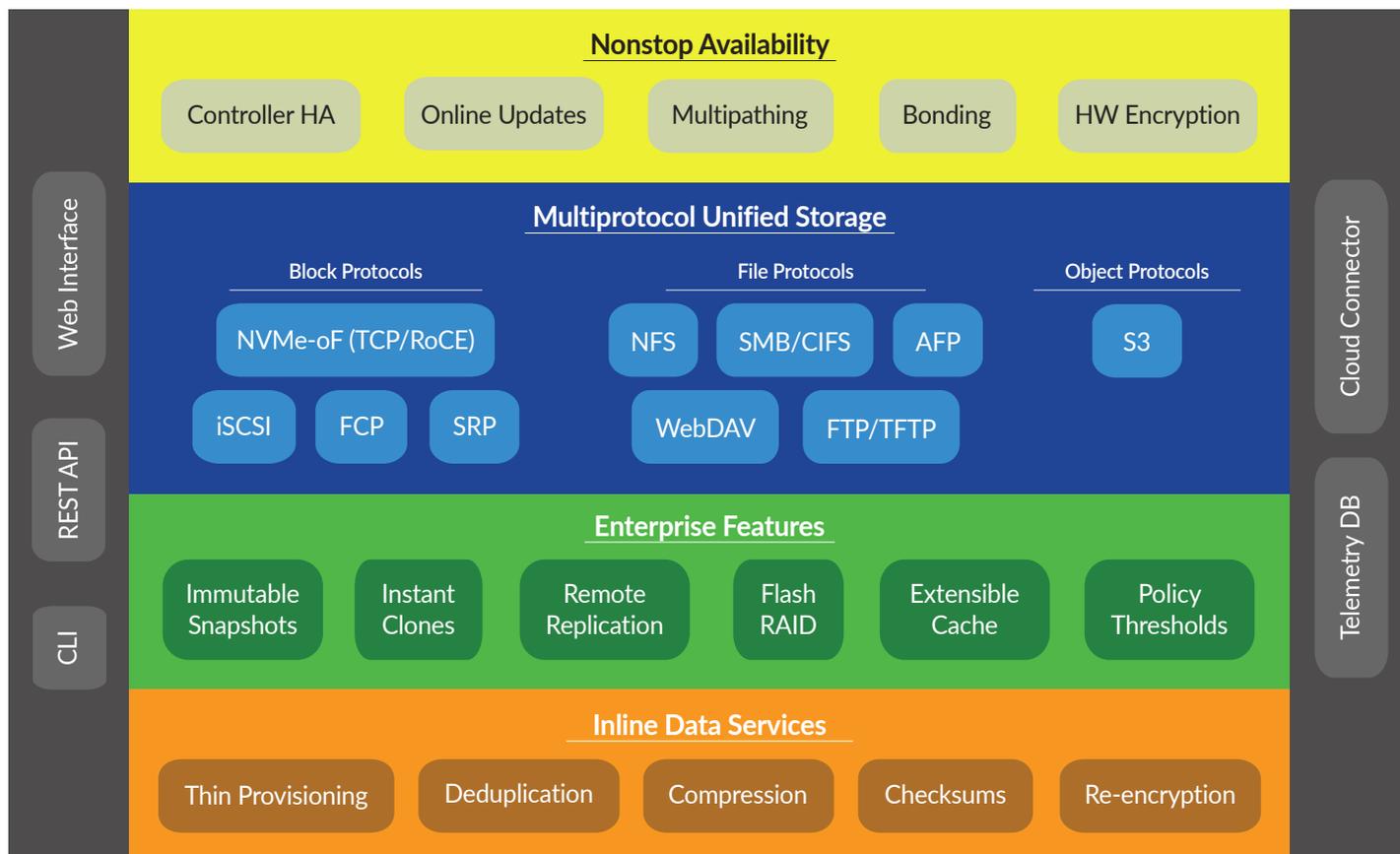
FlashMax provides robust inline data services. Block-level deduplication and advanced compression enable FlashMax to store more data with less hardware. Additional capabilities include end-to-end checksums, immutable snapshots, remote replication, cloning, zero-overhead hardware encryption, secondary software encryption, ransomware protection, and flexible parity schemas. With Omni, fleet-wide management, automation, and observability of the storage is centralized.

FlashMax is engineered differently. Its patented architecture removes the need for controller-to-controller cache mirroring by using a parallel write-through path directly to flash. This design eliminates the bottlenecks and cache coherency risk of conventional dual-controller systems while avoiding the cost and complexity of scale-out clusters. With DirectLink, FlashMax can expand to over 20 PB raw (up to 100 PB effective) in one namespace using low-latency PCIe interconnects.

Built for nonstop availability, FlashMax offers dual redundant controllers, redundant power and cooling, online software updates, tool-less serviceability, and seamless capacity expansion. FlashMax software and support are all-inclusive, not capacity-based, providing predictability and much lower recurring costs. Its open architecture gives customers flexibility to scale on their own terms. FlashMax is backed by 24×7×365 support and a comprehensive warranty for up to 10 years.

Intelligent Software Enables the Ultimate Enterprise Data Platform

FlashMax features powerful capabilities that enable a modern data storage infrastructure.



Versatility

Unified block, file, and object protocol support with advanced inline data services to optimize for specific workloads

Security

Data encryption in hardware and software, immutability, secure management, and triple-level data protection

Scalability

Expands efficiently and non-disruptively from terabytes to petabytes in a single namespace with direct PCIe expansion

Resilience

Complete redundancy spanning storage IOCs, network connectivity, power, cooling, data integrity, and serviceability

Performance

Patented write-through architecture to optimize performance, improve system resiliency, and eliminate battery backups

Efficiency

Best-in-class capacity density and power efficiency combined with exceptional deduplication and compression capabilities

Simplicity

Exceptionally easy-to-use, rapid to deploy, and simple to maintain with intelligent reporting and forecasting capabilities

Use Cases

FlashMax's power and flexibility makes it well-suited for a broad range of data-intensive use cases:



Enterprise



Cloud



Digital Media



Data Warehouse

Multiprotocol Versatility with One Platform

FlashMax supports over a dozen storage protocols. Block (SAN), file (NAS), and object (S3 compliant) storage can coexist simultaneously on one system sharing the same logical pool of capacity, without any artificial silos. This eliminates the need for different storage arrays, simplifies capacity planning, and maximizes utilization. FlashMax supports the highest speed Ethernet (up to 400G) and Fibre Channel (up to 64G), with multipathing and bonding to ensure seamless network failover.

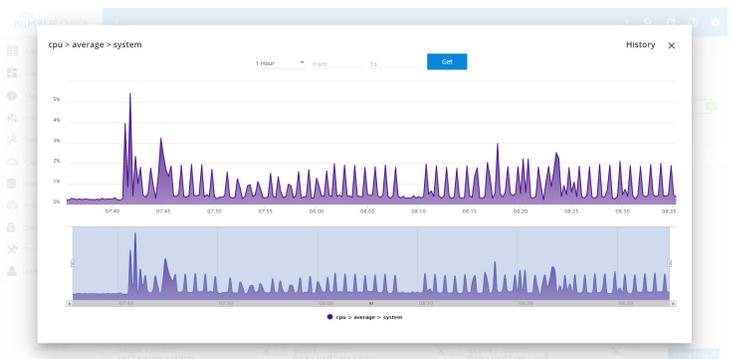
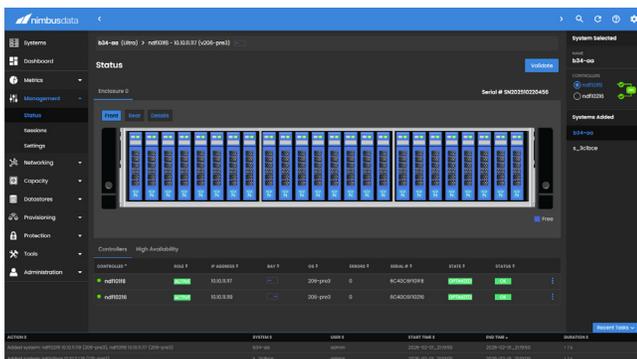
DirectLink™ for PCIe Expansion and Rack-level Resiliency

FlashMax begins with a base system featuring dual IOCs (either integrated in the base chassis or in separate dual external chassis) and 24 SSD slots. To expand capacity within the same namespace, DirectLink cards can be added to the IOCs to connect expansion enclosures using high-speed PCIe cabling. Each FlashMax E240 expansion enclosure adds another 24 SSDs to the system without daisy-chaining. Unlike SAS expansion shelves that rely on shared expander backplanes, DirectLink provides dedicated PCIe bandwidth to each expansion module, eliminating oversubscription and latency stacking. As a direct CPU interconnect, PCIe enables high performance expansion without the cost and complexity of scale-out clusters or additional switches. Over 20 PB raw capacity (up to 100 PB effective capacity) is possible in one namespace. As industry-standard NVMe SSDs grow in capacity, FlashMax maximum capacity will increase in tandem.

Unlike competing dual controller arrays, FlashMax can be configured to survive a total rack failure while still operating as one logical system. With external FlashMax IOCs that only need to be connected by Ethernet (for heartbeat) and PCIe (for storage connectivity), up to five meters of separation is possible. As a result, one FlashMax system can be deployed across two separate racks and use built-in mirroring to achieve rack-level failure resiliency – no additional software required.

Powerful Management with Omni

Omni delivers a centralized software platform for monitoring and managing the entire Nimbus infrastructure. It aggregates telemetry across all Nimbus systems, enabling centralized reporting for capacity planning, performance analysis, and streamlined administration. A robust yet easy-to-use REST API supports integration with existing enterprise management tools and simplifies automation. For standalone FlashMax systems, a built-in web interface and command line interface (CLI) offer direct management that is simple and intuitive, making anyone a storage pro with minimal training.



FlashMax - Specifications

		F500	F700	F900
System	Base SSDs / Raw Capacity Max SSDs / Raw Capacity (w/Expansion) Dual IOCs	24 x SSDs (up to 3 PB) 48 x SSDs (up to 6 PB) Integrated in Base	24 x SSDs (up to 3 PB) 120 x SSDs (up to 15 PB) Integrated in Base	24 x SSDs (up to 3 PB) 168 x SSDs (up to 21 PB) External 2 x 2U
Connectivity	Network Ports (max per IOC) Built-in Ports (per IOC) Expansion Chassis Support	3 x 100G Ethernet, or 6 x 25G Ethernet, or 4 x 32G Fibre Channel 2 x 10GbE SFP+ Optional, up to 1 x E240	4 x 400G Ethernet, or 8 x 200G Ethernet, or 16 x 64G Fibre Channel 2 x 10GBASE-T Optional, up to 4 x E240	4 x 400G Ethernet, or 8 x 200G Ethernet, or 16 x 64G Fibre Channel 2 x 10GBASE-T Standard, up to 6 x E240
Performance	Throughput Latency IOps	Up to 30 GBps As low as 100 µsec Up to 2.2M (4 KiB)	Up to 100 GBps As low as 80 µsec Up to 6.8M (4 KiB)	Up to 100 GBps As low as 80 µsec Up to 6.8M (4 KiB)
Expansion	Expansion Architecture Key Features	DirectLink™ PCIe expansion cards and FlashMax E240 PCIe expansion chassis Redundant PCIe IOCs, dual power/cooling modules, 24 x SSDs, 2U, ~500 W		
Features	Protocol Support Storage IO Controller (IOC) Management Ports (per IOC) Redundant Hot-swap Components	NVMe-oF (TCP and RoCEv2), iSCSI, Fibre Channel, NFS, SMB, S3, AFP, FTP, TFTP Dual active/passive IOCs with patented architecture (US Patent 9,268,501) GbE Mgmt, BMC, Console, USB IOCs, SSDs, power supplies, cooling fans		
Dimensions	Base System Rack Space Base System Depth Base System Weight (maximum)	2U - 4U 21.2 in or 539 mm 71.6 lbs or 32.5 kg	2U - 10U 34.4 in or 874 mm 88.7 lbs or 40.2 kg	6U - 16U 21.2 in or 539 mm 48.8 lbs or 22.1 kg
Power	Voltage Frequency Base System Power Consumption	100 - 240 VAC 48 - 62 Hz ~600 W (900 W max)	200 - 240 VAC 48 - 62 Hz ~1100 W (2000 W max)	100 - 240 VAC 48 - 62 Hz ~1400 W (2200 W max)
Environmental	Ambient Temperature Relative Humidity Altitude	Operating: 5 to 40 °C, Non-operating: -20 to 60 °C Operating: 10% to 80%, Non-operating: 8% to 95% (non-condensing) Operating: -50 to 3000 m, Non-operating: -100 to 12,192 m		
Shock & Vibration	Operational Shock Operational Vibration Non-operational Shock Non-operational Vibration	5G for 11ms, 1/2 sine wave pulse 0.15G at 5-500 Hz 10G for 11ms, 1/2 sine wave pulse 0.5G for 5-500 Hz		
Agency Approvals	CE Mark, EN55022/EN61000 Class A, FCC Class A, Canadian IECs-003, VCCI Class A, ISO 9002 manufacturing			
Warranty & Support	Up to 10 year comprehensive, including 24x7x365 support, rapid parts replacement, with optional media retention			

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