IBM

IBM FlashSystem A9000

A highly parallel all-flash solution for the cloud-scale business

Highlights

- Accelerate access to data with IBM FlashCore technology

- Optimize economics with deduplication, compression and pattern removal

- Protect data with new multi-site high-availability and disaster recovery

- Build multi-tenant clouds with enterprise-grade capabilities

- Integrate with IBM Cloud Private, VMware, MS PowerShell & OpenStack

- Achieve cloud economics with Kubernetes-based Spectrum Access blueprint

- Leverage intelligent capacity management for deduplicated data

Achieving the flexibility, scalability and performance essential to successful cloud services providers requires a new approach to data storage. IBM FlashSystem A9000 integrates the extreme performance of IBM FlashCore technology, highly parallel architecture and comprehensive data reduction in one powerful solution. Whether you are a service provider requiring highly efficient management or an enterprise implementing cloud on a budget, IBM FlashSystem A9000 provides the high-performance, cloud-scale storage you need.

IBM FlashSystem A9000 is designed to accelerate your workloads to help you reduce costs, increase revenue, meet service level agreements and improve customer satisfaction. IBM FlashCore technology provides the all-flash foundation, with IBM MicroLatency modules that leverage IBM-enhanced 3D triple-level cell (3D TLC) flash to provide exceptional density, low latency, extremely high I/O and greater reliability.

IBM FlashSystem A9000 includes industry-leading data protection and endurance capabilities that allow enterprises to consistently address the full range of application performance or system latency requirements. IBM FlashCore technology keeps your data safe with enterprise-class data protection features like IBM Variable Stripe RAID technology, IBM-engineered error correction codes, overprovisioning capabilities, ultra-fast write buffers and hardware-based data offloads.

High performance and availability

IBM FlashSystem A9000 leverages IBM Spectrum Accelerate technology, which provides redirect-on-write space-efficient snapshots, along with asynchronous and synchronous replication to enable granular data protection without increasing costs. For maximum data protection and business continuity, the system leverages multi-site high-availability and disaster recovery, with HyperSwap between two primary sites, and disaster recovery via simultaneous asynchronous replication from the primary sites to a third site, delivering active-active data access and transparent failover, per volume or consistency group (CG), across arrays and data centers.

Greater efficiency, lower costs

IBM FlashSystem A9000 enables your business to benefit from greater storage efficiency and lower costs—at the moment of deployment and for years to come. IBM-enhanced 3D TLC NAND flash technology provides three times greater density than previous storage media, reducing both capital and operational expenses without compromising performance. Flash-optimized data reduction capabilities—including pattern removal; inline, global deduplication; and enhanced inline compression—help lower storage costs throughout both structured and unstructured data environments. IBM FlashSystem A9000 increases efficiency and simplifies storage management with an innovative user interface that enables agile orchestration of private and hybrid multi-tenant cloud environments and accelerates day-to-day storage management tasks. For better capacity planning and fair charge-back of deduplicated data, IBM FlashSystem A9000 provides intelligent capacity management that analyzes system metadata in real-time, producing accurate estimates of reclaimable physical capacity, and attributed (fair share) physical capacity, per volume, without any performance impact.

Purpose-built for the cloud

IBM FlashSystem A9000 provides the capabilities to build highly flexible hybrid cloud solutions. IBM Hyper-Scale Manager allows orchestration of private and multi-tenant cloud environments at very large scales, with the ability to manage multiple IBM FlashSystem A9000, IBM FlashSystem A9000R, IBM XIV and IBM Spectrum Accelerate solutions from a single pane of glass. Cross-generation asynchronous replication between IBM FlashSystem A9000 and IBM XIV Gen3 systems allows you to leverage IBM XIV Gen3 investments and lower data protection and disaster-recovery costs. IBM Hyper-Scale Mobility enables you to simply and nondisruptively consolidate XIV Gen3 systems into fewer IBM FlashSystem A9000 systems with minimal operational impact. Multi-tenancy features simplify delegation and segregate storage-management access among storage administrators and tenants. QoS features help ensure that tenant service levels aren't compromised.

IBM FlashSystem A9000 is ready for Kubernetes container environments and integrates with a wide variety of hypervisor and virtualization software, including IBM Bluemix, VMware, OpenStack, Linux and Microsoft. These capabilities, paired with consistent high performance and optimized economics, make IBM FlashSystem A9000 an ideal choice for a cloud-scale business.

Choice of licensing models

IBM offers a variety of licensing models that adjust to the different client needs providing business flexibility, investment protection and significant savings in acquisition and operating costs. The Licensing models are:

Standard licensing

This license is ordered with and attached to the specific FlashSystem A9000 and FlashSystem A9000R systems, it offers all the features and functions, so there is no need for separate licenses for specific capabilities.

Utility licensing

The Utility Offering models are provided for customers who can benefit from a variable capacity system where billing is based on actual provisioned space above the base. The base subscription is covered by a three-year lease that entitles the customer to utilize the base capacity at no additional cost. If storage needs increase beyond the base capacity, usage is billed based on the average daily provisioned capacity per terabyte, per month, on a quarterly basis.

IBM Spectrum Storage Suite software or IBM Spectrum Accelerate licensing

As part of IBM's efforts to build a storage portfolio that supports the movement to software-defined infrastructure, customers can purchase either IBM Spectrum Storage Suite software or IBM Spectrum Accelerate software and apply that license to a FlashSystem A9000 or FlashSystem A9000R. That software is licensed to the customer and not to the storage system, so a customer can re-use the licensed capacity on different storage systems and storage software offerings by moving those licenses from old solutions to new solutions, removing a concern about stranded licenses.

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IBM FlashSystem A9000 Spec Table

IBM FlashSystem A9000 at a glance				
Model	9836-425 (1-year warranty), 9838-425 (3-year enterprise-class warranty), 9838-U25 (3-year warranty)			
Controllers	Three-way active grid controllers, each containing: • Two Intel Xeon E5 v4 12-core 2.2 GHz processors • 384 GB DDR4 memory • Redundant battery backup units and power supply units			
Software	IBM FlashSystem A9000 and IBM FlashSystem A9000R software v12			
Effective capacity*	110 TB	180 TB	425 TB	900 TB
Maximum capacity†	1,200 TB	1,200 TB	1,200 TB	1,200 TB
Physical capacity‡	21.6 TB	36 TB	85 TB	180 TB
Raw capacity	36.9 TB	55.3 TB	129 TB	258 TB
IBM MicroLatency modules	8 x 3.6 TB	12 x 3.6 TB	12 x 8.5 TB	12 x 18 TB
Flash type	IBM-enhanced 3D TLC			
Performance				
IOPS	Up to 900,000			
Maximum bandwidth	10 GB/s			
Minimum latency	250 µs			
Data reduction and efficiency	• Pattern removal • Global, inline deduplication • Inline compression • Space-efficient snapshots • Thin provisioning			
Encryption	Hardware-based AES-XTS 256-bit with centralized key management			
Host connectivity options	12 x 16 Gb Fibre Channel + 6 x 10 Gb iSCSI, or 12 x 10 Gb iSCSI			
Backplane interconnect	InfiniBand			
Power	1.69 KW (typical); 2.91 KW (max)			
Dimensions (H x W x D)	356 mm (8U) x 483 mm x 930 mm (14 in x 19 in x 36.6 in)			
Weight	125 kg (275.5 lb)			
Client operating system support	For a current list of platforms supported, please visit the IBM System Storage Interoperation Center (SSIC).			

* Typical effective capacity is the available capacity after system overhead (including flash media over-provisioning and RAID protection) as well as the data reduction benefits of pattern removal, deduplication and compression. This assumes data reduction of 5 to 1.

†Maximum capacity refers to the effective capacity provisioning limit.

‡Physical capacity is the available capacity after system overhead, including flash media over-provisioning and RAID protection.

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Why IBM?

Building on decades of storage leadership, IBM offers a comprehensive portfolio of flash-optimized storage solutions that can propel organizations into the next era of IT. These proven flash solutions accelerate decision-making, provide best-in-class reliability and deliver new efficiencies across the entire business environment for a faster return on investment. IBM flash storage solutions provide enterprises with the application performance they need to compete, innovate and grow.

For more information

To learn more about IBM FlashSystem A9000, please contact your IBM representative or IBM Business Partner, or visit: **ibm.com**/us-en/marketplace/small-cloud-storage

Additionally, IBM Global Financing provides numerous payment options to help you acquire the technology you need to grow your business. We provide full lifecycle management of IT products and services, from acquisition to disposition. For more information, visit: ibm.com/financing

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