



Highlights

- Accelerate data at scale with high-performance grid architecture and IBM® FlashCore technology
 - Optimise storage economics with pattern removal, deduplication and compression
 - Build multi-tenant clouds with enterprise-grade availability, security and quality-of-service (QoS) features
 - Scale resources linearly and integrate with IBM Cloud, VMware, OpenStack, Linux and Microsoft
 - Leverage cloud economics and agility with solutions ready for Kubernetes containers
 - Protect data by replicating to IBM XIV Storage Systems Gen3 systems.
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IBM FlashSystem A9000R

A grid-scale, all-flash storage platform designed to drive your business into the cognitive era

Enterprises looking to gain competitive advantage need IT solutions with less complexity, easier scalability and better data economics. Today, you need a data storage system that can keep pace with highly virtualised environments, cloud computing, mobile and social systems of engagement and in-depth, real-time analytics.

IBM FlashSystem A9000R provides the consistent, reliable, efficient performance needed for dynamic data at scale. The systems integrate the microsecond (μ s) latency and high availability (HA) of IBM FlashCore technology with the grid architecture, comprehensive data reduction and leading-edge IBM software that can transform technology infrastructure into business innovation.

Consistent, extreme speed for data at scale

IBM FlashSystem A9000R is a rack-based, grid-scale system intended to address the needs of enterprises with diverse and rapidly growing environments. It comes as a preconfigured solution designed for simplified deployment. The system provides an excellent platform for industry leaders with rapidly growing cloud storage and mixed workload environments. IBM software-defined storage capabilities and IBM FlashCore technology combine to produce the extreme performance and scalability required in enterprise-class storage solutions. Plus thanks to the grid architecture, the system maintains this performance autonomously by evenly distributing every workload's data across all the system's resources, in real time.



Accelerated data economics

IBM FlashSystem A9000R utilises IBM MicroLatency modules that leverage IBM-enhanced 3D triple-level cell (3D TLC) flash to provide exceptional density, low latency, extremely high input/output (I/O) and greater reliability. Flash-optimised data reduction lowers costs with minimal performance impacts. Structured data workloads benefit from enhanced inline data compression, while unstructured data workloads benefit from inline data deduplication. Along with pattern removal and thin provisioning, these capabilities enable extraordinarily high storage capacity that can easily scale to more than three petabytes (PB) in a single array.

High availability

IBM FlashSystem A9000R delivers the confidence you require in your infrastructure with greater than 99.999 percent availability.¹ The underlying IBM FlashCore technology provides enterprise-grade reliability and HA with advanced flash management features, such as IBM Variable Stripe RAID, innovative IBM-engineered error correction codes, overprovisioning and wear leveling. IBM FlashSystem A9000R integrates IBM Spectrum Accelerate technology, which provides redirect-on-write, space-efficient snapshots and asynchronous and synchronous replication to enable granular data protection without increasing costs. To deliver HA at the highest level, the system leverages IBM HyperSwap capabilities, delivering active-active data access and transparent failover, per volume, across arrays and data centres (DCs).

Easy scalability for business on the move

IBM Hyper-Scale Manager allows orchestration of private and hybrid multi-tenant cloud environments at very large scales. It provides the ability to manage multiple IBM FlashSystem A9000R, IBM FlashSystem A9000, XIV and IBM Spectrum Accelerate solutions from a single pane of glass.

Hyper-Scale Manager provides simplified cross-generation asynchronous replication with XIV Gen3 systems, allowing you to leverage your XIV Gen3 investment and lower the cost of data protection and disaster recovery (DR). IBM Hyper-Scale Mobility enables you to simply and non-disruptively consolidate XIV Gen3 systems into fewer IBM FlashSystem A9000R systems with minimal operational impact. Multi-tenancy features simplify delegation and segregate storage management access among storage administrators and tenants, while QoS features help ensure that tenant service levels aren't compromised.

These capabilities, paired with consistent high performance and optimised economics, make IBM FlashSystem A9000R an ideal storage platform for industry leaders.



IBM FlashSystem A9000R

IBM FlashSystem A9000R at a glance

Model	9835-425 (1-year warranty), 9837-425 (3-year enterprise-class warranty)								
Controllers	Up to 8 active grid controllers, each containing: <ul style="list-style-type: none"> • Two Intel Xeon E5 v4 12-core 2.2 gigahertz (GHz) processors • 384 gigabyte (GB) DDR4 memory • Redundant battery backup units and power supply units 								
Software	IBM FlashSystem A9000 and IBM FlashSystem A9000R software v12								
Flash type	IBM-enhanced 3D TLC								
	720 terabyte (TB) configuration			1,700 TB configuration			3,600 TB configuration		
Effective capacity* (TB)	360	540	720	850	1,275	1,700	1,800	2,700	3,600
Maximum capacity† (TB)	2,400	3,600	4,800	2,400	3,600	4,800	2,400	3,600	4,800
Physical capacity‡ (TB)	72	108	144	170	255	340	360	540	720
Raw capacity (TB)	110.6	166.1	221.2	258	387	516	516	774	1,032
Grid controllers	4	6	8	4	6	8	4	6	8
Flash enclosures	2	3	4	2	3	4	2	3	4
IBM MicroLatency modules per flash enclosure	12 x 3.6 TB			12 x 8.5 TB			12 x 18 TB		
Performance: Scaled-out configuration 8 grid elements)									
input/output operations per second (IOPS)	2,400,000								
Maximum bandwidth	36 GB/s								
Minimum latency	250 µs								
Data reduction and efficiency	<ul style="list-style-type: none"> • Pattern removal • Global, inline deduplication • Inline compression • Space-efficient snapshots • Thin provisioning 								
Encryption	Hardware-based AES-XTS 256-bit with centralised key management								
Host connectivity options	Per grid controller: 4 x 16 gigabit (Gb) Fibre Channel (FC) + 2 x 10 Gb Internet small computer system interface (iSCSI), or 4 x 10 Gb iSCSI								
Backplane interconnect	InfiniBand								
Power	Entry configuration: 2.67 KW (typical); 4.49 KW (max) Scaled out configuration: 5.13 KW (typical); 8.57 KW (max)								
Rack dimensions (H x W x D)	201.5 cm (42U) x 64.4 cm x 129.7 cm (79.3 in. x 25.4 in. x 51.1 in.)								
Weight	Entry configuration: 616 kg (1,358 lb) Scaled out configuration: 774 kg (1,706 lb)								
Client operating system (OS) support	For a current list of platforms supported, please visit the IBM System Storage Interoperation Centre (SSIC) .								

Why IBM?

Building on decades of storage leadership, IBM offers a comprehensive portfolio of flash-optimised storage solutions that can propel organisations into the next era of IT. These proven flash solutions accelerate critical applications for faster decision making, come with best-in-class reliability and deliver new efficiencies across the entire business environment for a faster return on investment (ROI). IBM flash storage solutions provide businesses of all sizes with the application performance they need to compete, innovate and grow.

For more information

To learn more about IBM FlashSystem A9000R, please contact your IBM representative or IBM Business Partner, or visit:

ibm.com/us-en/marketplace/large-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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*Typical effective capacity is the available capacity after system overhead (including flash media over-provisioning and RAID protection) and after the data reduction benefits of pattern removal, deduplication and compression. This assumes data reduction of up to a multiple 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.

¹Based on IBM internal measurements.



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