

IBM FlashSystem 5045 Data Sheet

Enterprise storage capabilities for entry and growing workloads

Affordable performance. Advanced data services. Built-in cyber resilience.

The IBM Storage FlashSystem 5045 combines dual-controller availability, flexible flash and disk media, data reduction, encryption, replication, and AI-assisted management in a compact 2U platform.

1.2M	<70 us	12 GB/s	440
maximum IOPS	minimum latency	maximum bandwidth	drives per system



Designed for practical enterprise requirements

FlashSystem 5045 is designed for organizations that need enterprise-grade storage functionality without the cost and complexity of a high-end array. It supports mixed flash and disk configurations, nondisruptive capacity growth, and centralized management through IBM Storage Virtualize software.

Performance and flexibility Dual active-active controllers, 32 GB or 64 GB cache, integrated 10 Gb iSCSI, and optional Fibre Channel, SAS, and iSCSI connectivity.	Data efficiency Data reduction pools with thin provisioning, UNMAP, compression, and deduplication help increase effective capacity.
Cyber resilience Encryption, Safeguarded Copy, replication, and anomaly monitoring help protect data and accelerate recovery.	Simple operations Web-based management, IBM Easy Tier, and IBM Storage Insights streamline administration and support.

FS5045 Core capabilities

Data reduction and capacity efficiency	Block deduplication across data reduction pools; compression; thin provisioning; SCSI UNMAP; automated tiering with IBM Easy Tier.
Availability and business continuity	Dual active-active controllers; no single point of failure; hot-swappable components and nondisruptive maintenance; FlashCopy; remote mirroring; automated path failover support; three-site replication.
Cyber resilience and security	Hardware and management-layer encryption; immutable and isolated Safeguarded Copy snapshots; workload anomaly detection with Storage Insights Pro.
Virtualization and hybrid cloud	Virtualize internal and supported external storage; support for PowerVM, VMware, Hyper-V, Kubernetes and Docker; cloud migration and disaster-recovery options.

Operational advantages

- Grow without disruption by adding standard or high-density expansion enclosures.
- Cluster two systems for scale-out configurations supporting up to 880 drives.
- Manage internal and virtualized external storage through a consistent web-based interface.
- Use AI-enhanced IBM Storage Insights for health monitoring, predictive analytics, capacity trends, and streamlined support.
- Automate placement of frequently accessed data on faster media with IBM Easy Tier.

Ideal workload profiles

Virtualized infrastructure Shared block storage for VMware, Hyper-V, PowerVM, and mixed server estates.	Databases and ERP Low-latency storage for transactional workloads, reporting, and business applications.	Protection and consolidation FlashCopy, remote mirror, immutable copies, external storage virtualization, and tiered media for resilient operations.
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Included software functions

✓ Virtualization of internal storage	✓ Safeguarded Copy	✓ Data reduction pools
✓ Thin provisioning and UNMAP	✓ Compression and deduplication	✓ One-way data migration
✓ Dual-system clustering	✓ Encryption	✓ Remote mirroring
✓ IBM Easy Tier	✓ IBM FlashCopy	

Management and support experience

IBM Storage Insights • Single dashboard for storage health and status • Capacity and performance trend information • Configuration guidance and best-practice health information • Integrated ticket creation and support-log upload	Service and lifecycle options • IBM Storage Expert Care upgrade options • Predictive issue resolution with advanced support • No-cost migration program eligibility for supported controllers • Controller and storage refresh options may be available through IBM programs
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The IBM FlashSystem 5045 leverages the proven capabilities of IBM Storage Virtualize software defined storage (SDS) for storage management. IBM Storage Virtualize enables applications to run without disruption, even when changes are made to the storage infrastructure. When virtualized, data in a storage system becomes part of the FlashSystem solution, and it can be managed in the same way as internal drives. Data in external systems inherit all the FlashSystem functional richness and ease-of-use features, including advanced replication, high-performance thin provisioning, encryption, compression, deduplication, and Easy Tier functionality. The FS5045 is designed for high availability, with no single point of failure, enterprise-proven control software, and nondisruptive maintenance and can deliver 99.9999% data availability with IBM Storage Virtualize. IBM Spectrum Virtualize is capable of delivering:

- IBM HyperSwap for nondisruptive application and data mobility between data centers
- Support for host-side virtualization solutions, including VMware virtual machines, Microsoft Hyper-V and IBM PowerVM, among others
- Support for more than 500 external storage systems from a wide variety of vendors
- Powerful data reduction pool technology that includes deduplication, compression, and automated thin provisioning
- Easy Tier automated tiering functionality
- Safeguarded Copy for isolated and immutable copies plus software-based encryption that can be extended across all managed systems
- IBM Storage FlashCopy and IBM Storage Remote Mirror for local and remote replication Support for using cloud resources to complement on-premises storage Three-site data replication capabilities

The FS5045 storage systems are designed for high availability, with no single point of failure, enterprise-proven control software, and nondisruptive maintenance. The IBM FlashSystem 5045 can operate in DRAID 1, 5, or 6 modes. A key advantage is its ability to operate with full DRAID protection and efficiency with only three drives. IBM DRAID 1 data can be read from all three drives, which provides a performance boost over traditional RAID 1, and allows full recovery with the loss of one drive. In addition, IBM has also includes three-site replication capability using a combination of FlashCopy and remote copy. This IBM Storage Virtualize powered three-site replication capability runs data copies at both metro and global distances to offer a variety of recovery point and time options.

IBM FS5045 Technical Specifications

Specification	FlashSystem 5045
Models	4680-3P2 and 4680-3P4
Controller architecture	Dual controllers, active-active
User interface	Web-based graphical user interface
Standard connectivity	10 Gb Ethernet Copper iSCSI on the motherboard (4 Ports)
Optional connectivity	16 Gb Fibre Channel (8 Ports); 12 Gb SAS (8 Ports); 25 Gb iSCSI (4 Ports); 10 Gb/s Ethernet Optical iSCSI (8 Ports)
Cache per control enclosure	32 GB or 64 GB
Maximum performance	Up to 1.2 million IOPS; up to 12 GB/s bandwidth; minimum latency under 70 microseconds
Supported drives	Flash Drives: 1.92, 3.84, 7.68, 15.36 and 30.72 TB 10K Enterprise HDD: 2.4 TB 7.2K Near-Line HDD: 8, 12, 16 and 20 TB 7.2K 12 GBs Near-Line HDD: 24 TB
Maximum drives	440 drives per system; 880 drives in a two-way cluster
Expansion options	Up to 6 standard or 2 high-density expansion enclosures per controller
Enclosure choices	24 x 2.5-inch SFF; 12 x 3.5-inch LFF; 92 x 3.5-inch high-density expansion enclosure
RAID levels	IBM Distributed RAID 1, 5, and 6
Power and cooling	Fully redundant, hot-swappable fans and power supplies
Rack support	Standard 19-inch rack
Dimensions	3.4 inch H x 19.0 inch W x 21.9 inch D (8.7 cm H x 48.3 cm W x 55.6 cm D)
Operating environment	50 F to 95 F (10 C to 35 C); 20% to 85% relative humidity
Warranty	1-year limited hardware warranty with 9 x 5 onsite limited support; upgradeable service options available

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