

IBM Storage Scale System

# Global Data Platform, engineered to accelerate AI innovation and business growth with faster access to more data

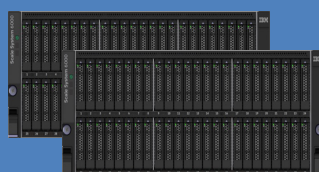
Easy to start



Scale System 6000

- 48TB-5.4PBe
- Up to 310GB/s
- Up to 13M IOPs

Easy to grow



- Add another 6000
- Add cloud data
- Add existing storage

Ultimate in Scale



- Parallel Performance
- Scale out anytime
- YBs of capacity

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The IBM® Storage Scale System with high performance parallel access to file and object data, builds a global data platform for AI enterprise storage needs with massive scale and extreme performance enabling access to data from multiple sources wrapped in cybersecure capabilities.

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# Why choose Storage Scale System?

Businesses are being challenged to deploy AI infrastructure and drive growth without sacrificing performance, creating another data silo, exceeding budgets and exposing security or resiliency issues. With the IBM Storage Scale System, you have everything you need to overcome the major data challenges and accelerate AI and unlock business value from your data wherever it resides.

Designed to deliver industry-leading performance and cost efficiency with NVMeoF Universal Storage and parallel access. IBM Storage Scale System all-flash and hybrid-flash arrays simplify hybrid cloud storage with connectivity to existing data silos and cloud data. Our system enables faster access to more data for faster application results. Use this eBook to learn how IBM Storage Scale System helps organizations protect, manage and extend data throughout the data center and the cloud bringing cyber security capabilities with less complexity and lower costs.

## Fast. Efficient. Secure.



### Cyber resiliency

Ensure continuity of operations by protecting your data with Safeguarded Copy, CyberSecure+ and CyberVault services help speed recovery and proactively protect data from cyberattacks.



### High performance

Achieve fast response times with low latency and high availability by using NVMe flash storage for mission-critical workloads with up to 13M IOPs and 310GB/s per node<sup>1</sup> and scale to 1000s of nodes.



### Intelligent operations

Streamline data management and support by optimising storage with policy-based data placement from turbo tier to flash to capacity tier to cloud or even to low-cost tape.



### Simple to operate

Streamline operations with a consistent storage platform, powered by IBM Storage Scale GUI, that provides enterprise-grade capabilities across environments.



### Lower cost and energy

Data lifecycle management that turns data off when not in use along with computational storage that can increase capacity of high-performance disks up to 3X the Capacity. Data is also optimized with one copy that can be shared globally to avoid duplication and increase integrity.



### Connected data

Unify your global storage environment connecting IBM and non-IBM storage with seamless data access on premises and in the cloud and from Red Hat OpenShift clusters.

[Read how customers are achieving economic benefits of Storage Scale](#)

# The Global Data Platform

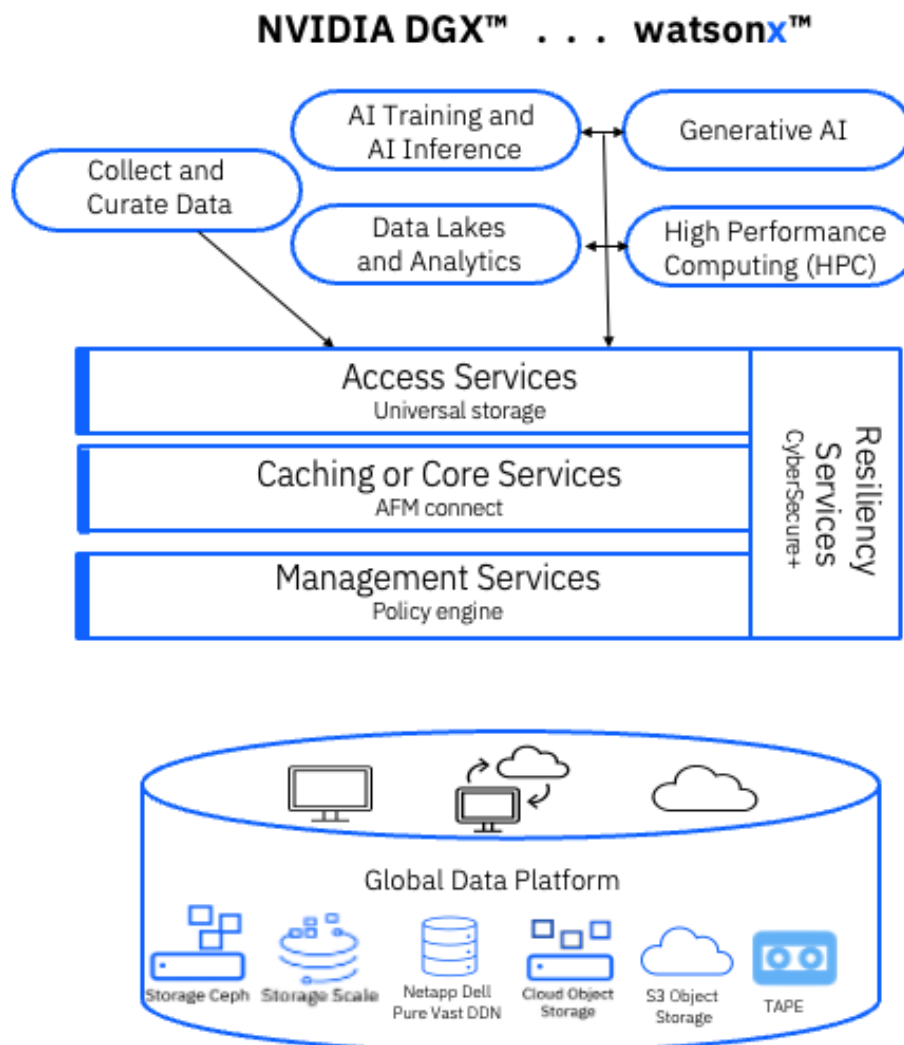
IBM Storage Scale is designed to break through data barriers and challenges that leaders face when deploying an AI infrastructure.

Our value is simple and is centered on four essential data services

- **access services** to expedite AI workloads and innovation
- **caching or core services** that eliminate data silos and globally connected
- **data management services** that support green and lower cost initiatives
- **resiliency services** that protect and safeguard data from the unknown.

Our story is not just about another storage product but is about driving AI innovation into your existing infrastructure to drive more value throughout the organization. From NVIDIA to watsonx and to any AI workload, IBM Storage Scale is engineered to provide faster access to more data with less resources all wrapped with cyber enhanced data resiliency. We are AI Storage for business with leading performance for hybrid cloud architectures.

[Learn more about the global data platform](#)



# Meet the solution

## Scale System 6000

Each 4u flash node supports redundant active active controllers and capacity for 24 or 48 NVMe flash drives with choices for 3.84, 7.68, 15.36, 30 TB or IBM QLC FlashCore Modules (FCM) 19TB or 38TB<sup>1</sup> with inline compression and lower cost / TB. Each node supports up to 310GB/s and 13M IOPs with universal multi-protocol support and NVMeoF high performance access.



## Parallel performance that scales to 1000s of nodes

As you scale out nodes with the Storage Scale parallel file system both performance and capacity can increase in a linear progression

<sup>1</sup> FCM drives available 1H 2023

### Protects storage investments

with local and remote replication and automated tiering or archiving to tape or cloud with policy-based lifecycle management

### Increases agility

with non-disruptive upgrades and the ability to scale to 1000s of nodes and 633TB of capacity<sup>2</sup>

### Dependable to the core

by enabling active active clusters and maintaining always on access even if part of the system is unavailable

### 3-year international warranty

for easy cross-border transfers

### Enables faster business decisions

with up to 310GB/s throughput and up to 13M IOPs per node<sup>1</sup>

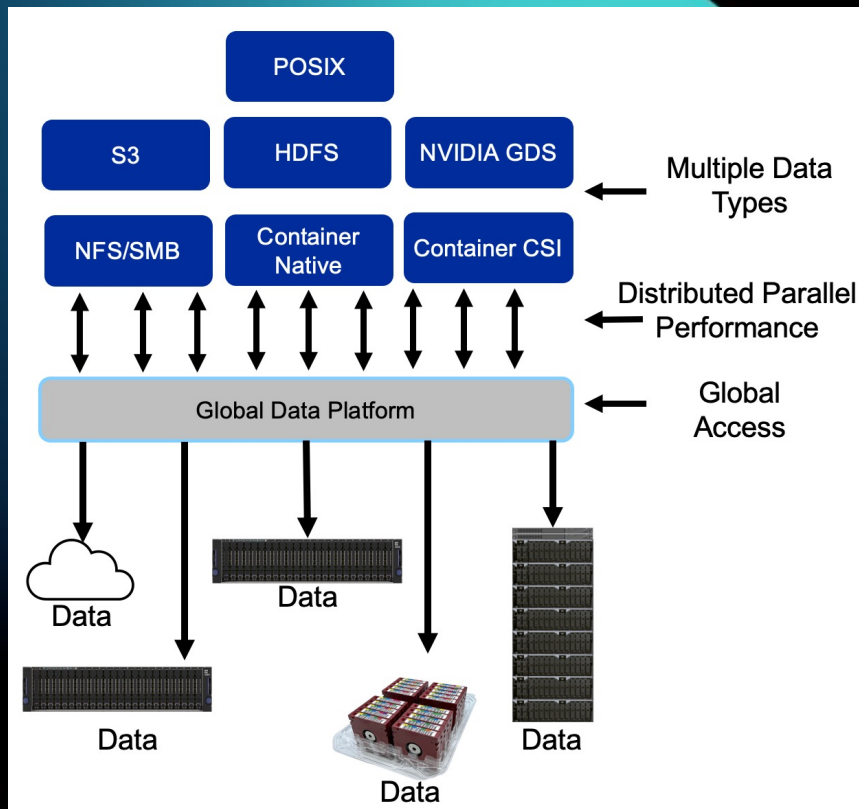
### Recover quickly when attacked

with a free CyberVault assessment and included Safeguarded copy that locks down data and enables PBs of data to be recovered with ease

[Read the Scale System 6000 datasheet](#) →

# Access Services

These services connects the application to the data and provides the performance and storage resources that can be optimized, secured and connected with the other data services. The data access services are unique to many other file and object solutions in the way that one can create multiple paths to the same data and scale the capacity to 633 Yotta Bytes and scale performance to TB/s throughput and 100s of millions of IOPs with low latency access.



## Parallel distributed performance

by clustering multiple servers and disks together to maximize performance application access is optimized by proving multiple parallel paths to data

## NVIDIA GPU Direct Storage (GDS) interface

enables NVIDIA applications to bring data directly from IBM Storage Scale System to the GPU memory enhancing performance for AI applications

## HDFS, NFS, SMB interface

enhances access with standardized interfaces to provide flexibility for multiple applications to access the same data without migration or work for the application teams.

## S3 API

to leverage a cloud native application interface and provide concurrent access through a standard S3 API that can access data from anywhere

## NVMeoF (Universal Storage- UStore)

enhances access for smaller files or transactions and provide extreme performance with low latency

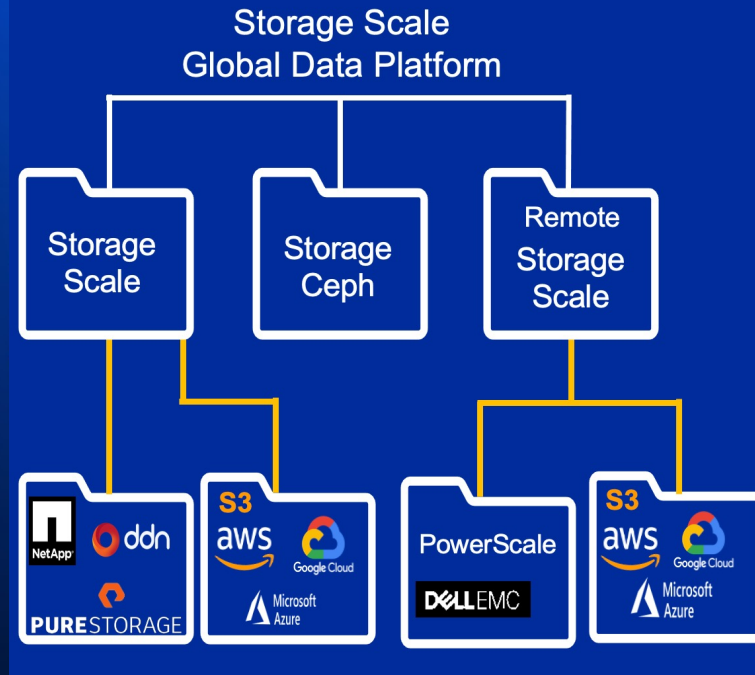
## Container Native Storage Access

enables the deployment of the IBM Storage Scale cluster file system in a Red Hat® OpenShift® Cluster and directly attach to the IBM Storage Scale System for manageability and performance

# Caching Services

Having multiple interfaces to the same data gets even more powerful when that data can be accessed from multiple data sources that each may have a unique interface. We maximize resources and connect to what your applications need... data.

- Turns remote file and object data into active capacity (open ecosystem)
- Masks wide-area network latencies and outages by transparently caching data locally
- Individual files in the file set can be compressed
- Set Policies to prefetch and optimize AI workflows from remote or cloud locations



## Investment Protection

with multi-vendor and multi-cloud resources

## Increase Application Agility

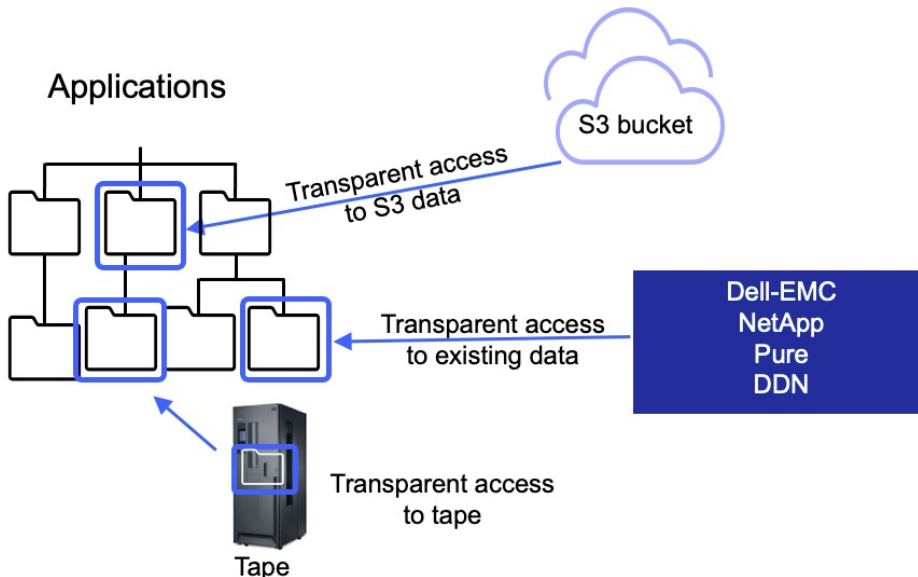
accessing data from anywhere and wherever deployed

## Faster Access

to remote data by transparently caching in high performance tier the remote data locally

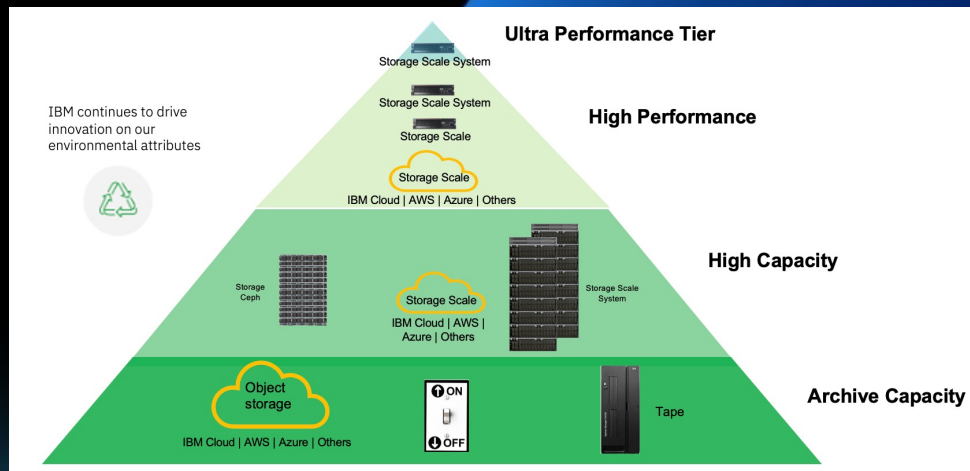
## Quickly Scale

your data from resources you choose with performance you require

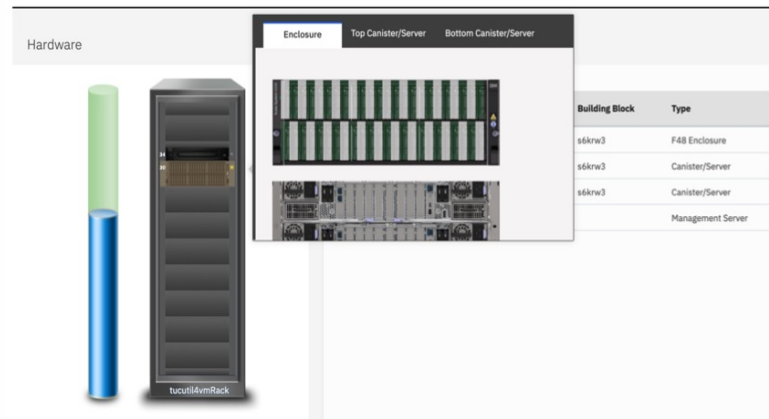
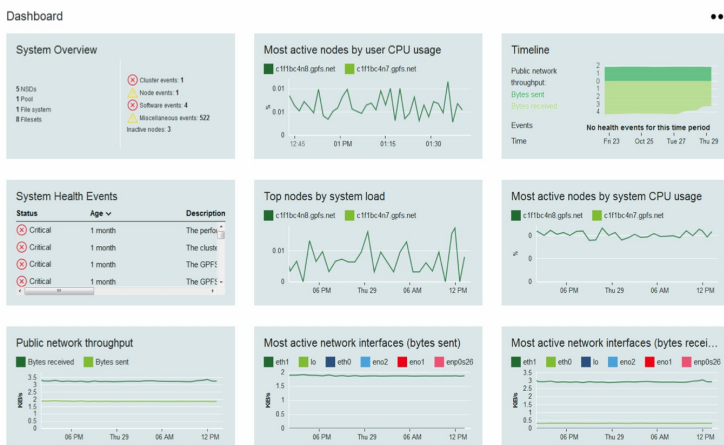


# Management Services

Data lifecycle management helps lower the cost of an overall storage solution and it also helps to optimize the performance of applications and user access to data. IBM Storage Scale, with its global parallel file system including advanced file management (AFM), and Archive policy engine provides access to heterogeneous active data and several cost-effective options for archiving data.



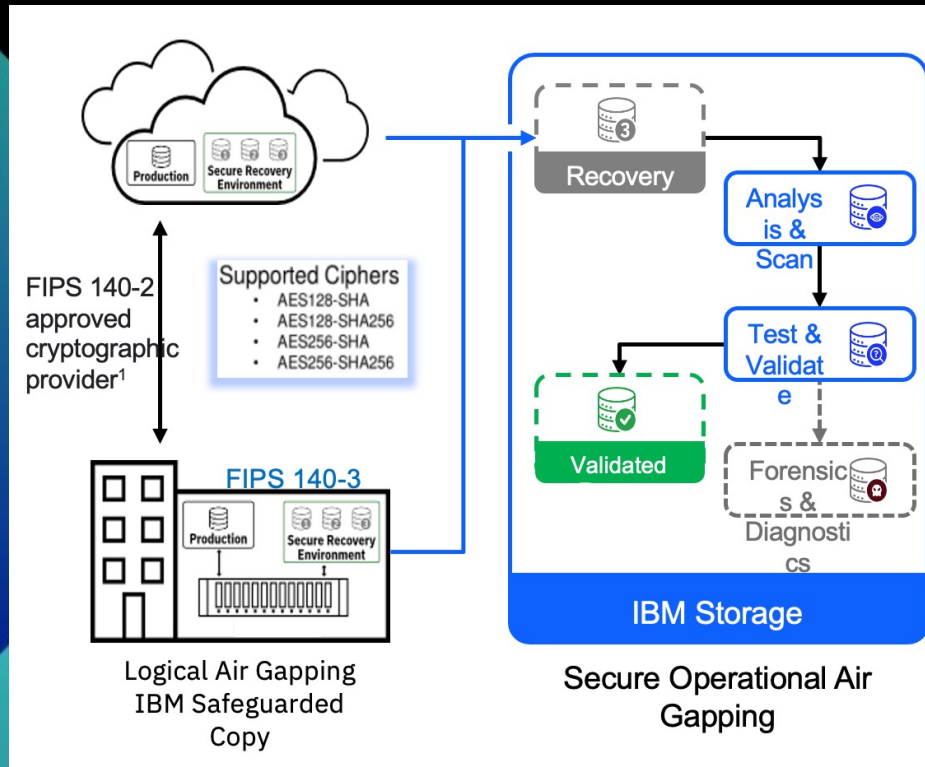
The IBM Storage Scale System management GUI provides an easy way to configure and manage various features that are available with the IBM Storage Scale and Storage Scale System. Since the system supports global data and the GUI can manage all the data one truly has a global interface and view to all the data being access by IBM Storage Scale.



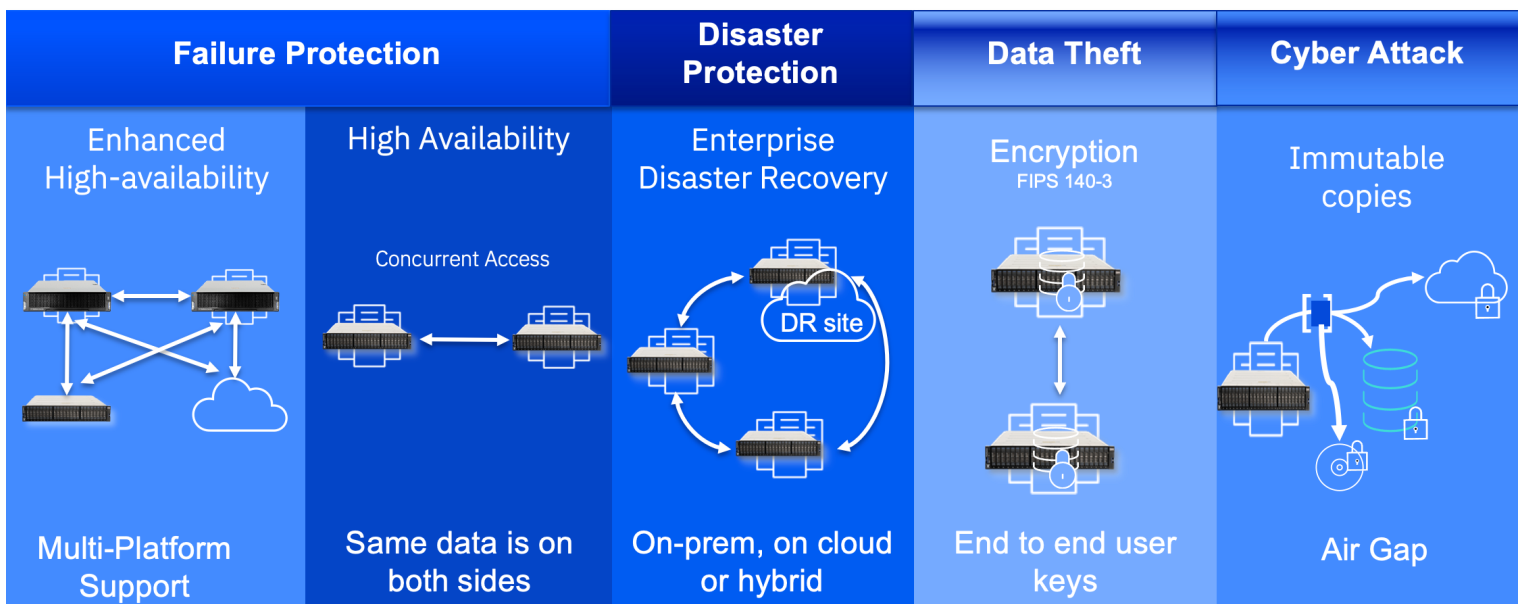


# Resiliency Services

IBM's resiliency services begins with IBM Safeguarded Copy, which creates a logical air-gap relationship between the source volume and the secure recovery environment. These restore points can be used to quickly bring data back online following a cyberattack if a crash-consistent restore operation is required. We refer to this as a secure operational air-gap as the data set being analyzed for restore operations is separated from the source array, but often in the same datacenter.



Ensuring your data stays available to your applications is the primary function of storage. In a hybrid cloud or distributed environment, organizations are working with multiple locations comprised of on-premises and public clouds. With a strategic storage software foundation like IBM Storage Scale deployed on-premises in storage systems and on public clouds, you have great flexibility in how you leverage your infrastructure locations for operational resiliency. The following are common configurations and it's certainly not an exhaustive list.



# Choose the solution then repeat

One platform that can integrate with your current storage resources makes storage simple. IBM Storage Scale System provides a full range of industry-leading data services and optimized configurations with distributed parallel access so you can run multiple workloads simultaneously and expand performance and capacity as needed.



AI/ML



Analytics/HPC



Generative AI

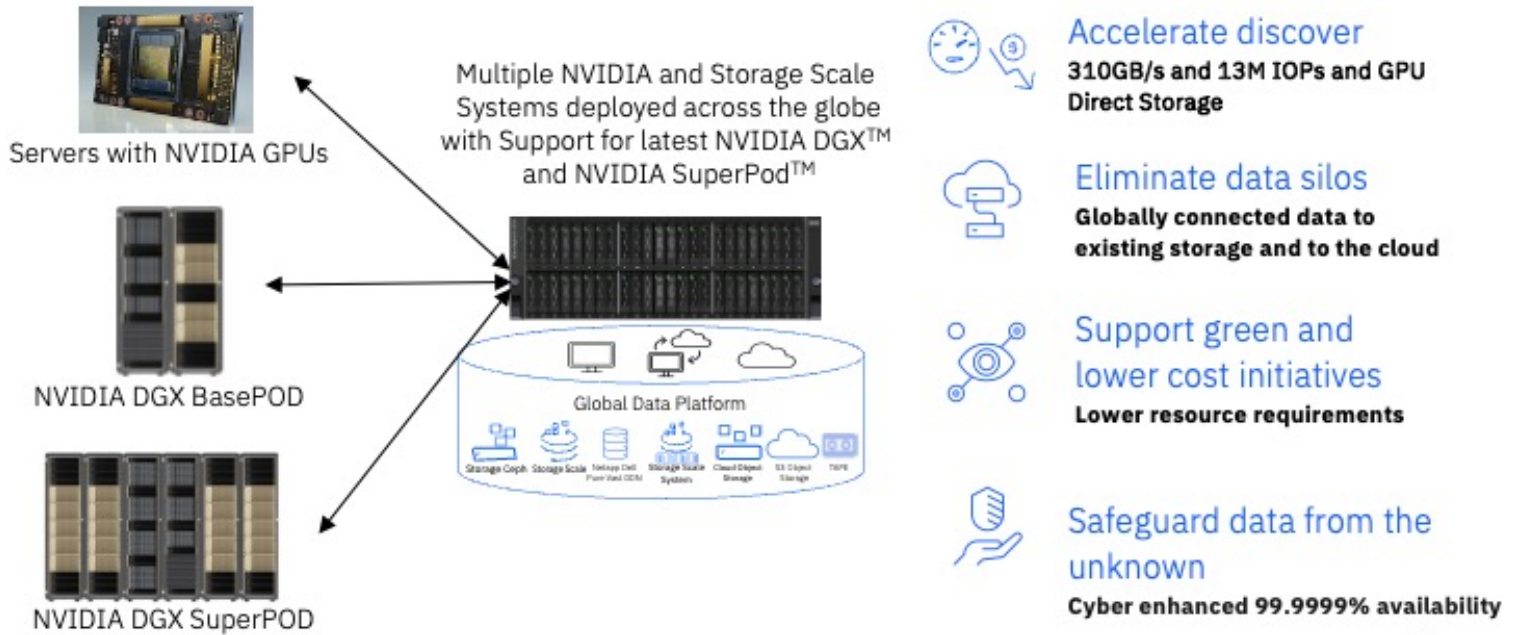


Data Lakes

[Read how IBM Storage Scale System supports NVIDIA DGX SuperPOD](#)

## Why IBM Storage and **NVIDIA** are better together

Accelerate AI workloads with more performance, access, efficiency and protection



## Access More Data with More Performance - Optimized

Engineered and optimized for data science productivity



Easy to start



Easy to expand

# Enhance your investment

IBM offers support and options\* to help you make the best storage investment.

## IBM Global Financing

Manage cash flow and finance big possibilities. IBM can provide loans and leases for FlashSystem solutions and services. Value is accelerated, thanks to rates as low as 0% for 12 months. And you can start your projects today, with a payback period up to 20% shorter than up-front payment.

### Optimise cash flow

Minimise up-front payments, align costs with benefits

### Reduce cost and improve ROI

With fair market value (FMV) leasing-based refreshes

### Maximise liquidity

Free up cash and preserve credit lines

### Reduce unpredictability

Know costs over a fixed term

### Reduce risk of obsolescence

Upgrade mid-term with little change in costs

[Learn more](#)

## IBM Technology Services - Storage

Infrastructure expertise for AI, hybrid cloud and enterprise IT

Storage Solutions for Hybrid Cloud

Cyber Resiliency Assessment and Implementation

Infrastructure Expertise for Analytics and AI

IBM Technology Services, part of IBM Technology Lifecycle Services (TLS) and formerly IBM Systems Lab Services, delivers technology lifecycle services for IBM Systems products, open source software and enterprise networking. IBM Technology Services is differentiated by deep technical expertise, valuable tools and successful methodologies, which are designed to promote best practices and address complex infrastructure challenges.

[Solution details](#)

# Succeed with Storage Scale System

See how other businesses have used Storage Scale System to unlock their data and achieve their data storage goals.

IBM Storage for Data and AI is ideal for businesses that want to:



## Improve economics

Connect your resources enabling better collaboration and eliminate islands that create complexity and need to be managed independently.



## Adopt green storage resources

Bring energy savings by using less resources with consolidation and data reduction. By compressing and eliminating duplicate data and turning off data that is not used the savings quickly add up.



## Unlock data for AI

Access your data on the edge to the cloud with our uniquely engineered global data platform. Data could not be easier to access as you chose the interface and location and let IBM optimize the data.



## Increase cyber resiliency

Detect cyberattacks early to minimise damage. Reduce recovery time from days or weeks to just hours. Keep data safe from the unknown.

## Client case studies

### Accelerating insight into vehicle safety at Continental

Developing autonomous driving solutions with faster, more flexible data storage and simplified management for AI with NVIDIA GPUs and IBM Storage

Continental improved AI training time 70% using IBM Spectrum® Scale and NVIDIA DGX system

[Read the story](#)

[Watch the video](#)

### Conserving energy in a data-driven world

Danish Meteorological Institute teams with IBM to adopt a modernized, more sustainable storage system

The enterprise-level file storage system has the scalability and performance needed to handle large, complex data workloads and the capacity to combine flash, disk, tape and cloud storage into a unified system.

[Read the Case Study](#)

### Baidu enables technology innovation with ultra-scalable data platform

Multinational high-tech AI company replaces disks with high-performance tape and flash storage, storing massive volumes of data, cutting costs by 80% and enabling rapid growth in AI

[Read the Case Study](#)

### Driving AI innovative research forward by taking control of data

University of Birmingham must ensure data is always available to a growing number of users running increasingly complex simulations.

[Read the Case Study](#)

# Connect with IBM Storage Scale System

Stay in touch with the latest resources, updates and conversations.

## Useful tools

[Documentation for Scale](#)

[Documentation for Scale System](#)

[Support Help for Scale System](#)

[IBM Storage Scale Data Sheet](#)

[IBM Storage Scale System Data Sheet](#)

[Kubernetes and IBM Storage Scale](#)

[Gartner Magic Quadrant report](#)

[Learn why IBM is a 2022 leader in  
File and Object Storage](#)

[ESG analyst white paper](#)

[Understand storage's role in  
ensuring cyber resiliency](#)

## Environmentally sustainable by design

IBM storage technologies including IBM Storage Scale System can help you:

### Reduce e-waste

by upcycling your existing investments and connecting them to the global data platform

### Get more out of your investments

with data reduction and scalable system that match your needs and place data in the most optimal resources

### Reduce your carbon footprint

with environmentally friendly storage technologies that turn data off when not used

## Join the conversation



### IBM Community and Blogs

[Join the IBM Storage Community for File and Object](#)



### See the latest demos

[Advanced Technology Group Storage](#)



### IBM Storage for Data and AI

[Visit the IBM Storage for Data and AI Web Pages](#)

## Ready to learn more?

Discuss how Storage Scale System can meet your business needs. Contact your IBM Representative or IBM Business Partner now.

Visit us at <https://www.ibm.com/products/storage-scale-system>



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