

# ACTIVESCALE COLD STORAGE

SECURE, DURABLE, EXTREMELY LOW-COST STORAGE FOR COLD DATA

TECH BRIEF

## FEATURES & BENEFITS

### Data Sovereignty and Security

Achieve cloud storage economics in your own data center deploying the same architecture as cloud hyperscalers without exposing your data to unnecessary risks and cyber threats.

### Durability for Years and Decades

Up to 19 9's data durability with new 2D erasure coding and a rock-solid, redundant, geo-spread RAIL architecture that easily scales to billions of objects, exabytes of data, and new generations of technology.

### Easy Access, Lowest TCO

Based on S3 APIs, storage classes, and lifecycle policies, simply support new and emerging applications and workflows in your own data centers, colocation facilities, and hybrid multi-clouds with the industry's lowest TCO solution.

### Data Value without Unpredictable Fees

High performance, highly available, no-fee access is based on our single namespace, hybrid architecture. NVMe-based object metadata enable super-fast queries and easy enrichment across both active and cold data.

### Easy as-a-Service Delivery

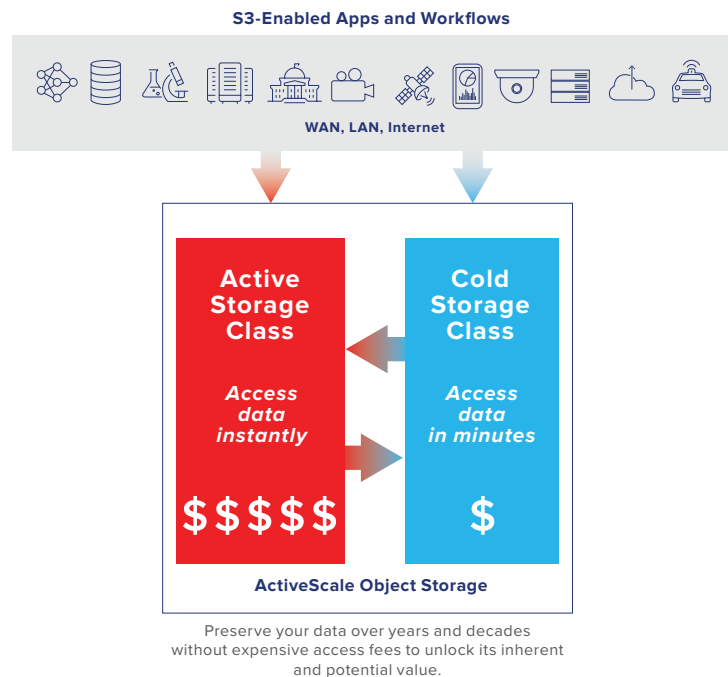
Deploy as a Quantum Object Storage Service in your data center, colocation facilities, or Quantum-hosted cloud with flexible pay-as-you-grow pricing, 7x24 support, and proactive monitoring and management.

LEARN MORE:

[www.quantum.com/cold-data-storage](http://www.quantum.com/cold-data-storage)

## Bring Your Cold Data to Life

Quantum ActiveScale™ Cold Storage is a new class of object storage that provides secure, highly durable, and extremely low-cost storage for archiving of your cold data. It enables any organization generating petabytes of data to reduce the cost of their cold data by 80%.



## Getting More Value from Your Cold Data

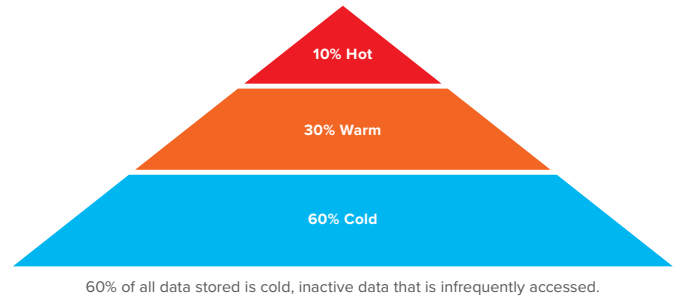
Whether you are developing solutions for life and Earth sciences, media production, government programs, web services, IoT infrastructure, AI/ML, or video surveillance, ActiveScale puts an affordable scalable solution within reach. Now you can build your own private cloud storage environment - and seamlessly grow your data stores from terabytes to exabytes.

With storage growth far outpacing IT budgets, IT leaders are looking for new approaches to resolve this gap. Industry surveys clearly identify that 60% of all data stored is cold, inactive data that is infrequently or never accessed again. Yet, organizations are unwilling to delete this data as they recognize its potential value.

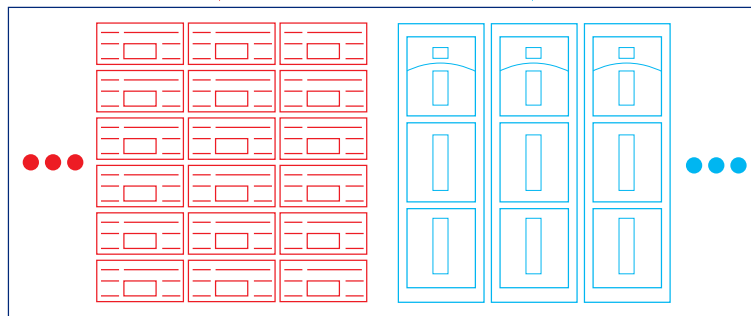
## Bringing the Cloud Experience Anywhere Your Data Lives

As a hyperscale cold storage industry leader, Quantum has deployed exabytes of storage in support of the world's largest cloud providers. With years of experience and innovation, we are bringing a new, innovative approach for building cold data storage for your hybrid cloud environment.

ActiveScale Cold Storage provides industry-leading durability, affordability, and accessibility, allowing organizations to preserve data for years and decades and unlock the inherent and potential value of their growing data assets.



### S3-Enabled Apps and Workflows

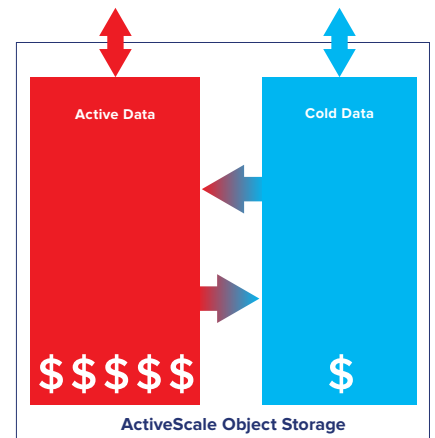


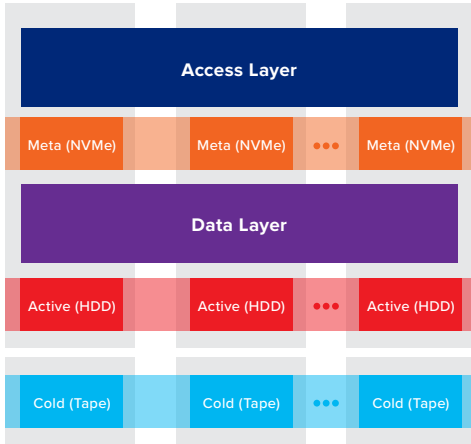
### ActiveScale Cold Storage

Unlimited scalability, industry's lowest TCO and highest durability.

## Active and Cold Storage Classes

With the industry's only integrated class of storage designed for cold data, ActiveScale reduces your overall cost of storing and protecting massive data sets. Moreover, ActiveScale Cold Storage provides for simple, quick recovery of your cold data sets into your active working group for continuing analysis and reuse. ActiveScale software provides unlimited scalability of active and cold data at consistent levels of availability and performance at scale with no rebalancing.





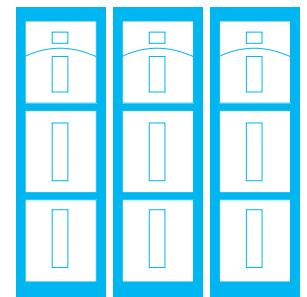
### Optimized Scale-out Hybrid Storage Software

The ActiveScale architecture consolidates NVMe, hard drives, and tape resources into a single namespace that scales to billions of objects and exabytes of capacity. The Access Layer stores object metadata for fast queries while the Data Layer provides unlimited, independent scaling of both Active and Cold Storage to meet demands for both immediate access and reduced cost.

The ActiveScale architecture enables both active and cold storage infrastructures to be deployed at a single-site, two-sites using data replication, or three sites using 3GEO Dynamic Data Placement (DDP). Data buckets can also be migrated and replicated between ActiveScale and public cloud environments in support of hybrid cloud deployments.

### Cold Storage Class Built on Quantum Hyperscale RAIL Architecture

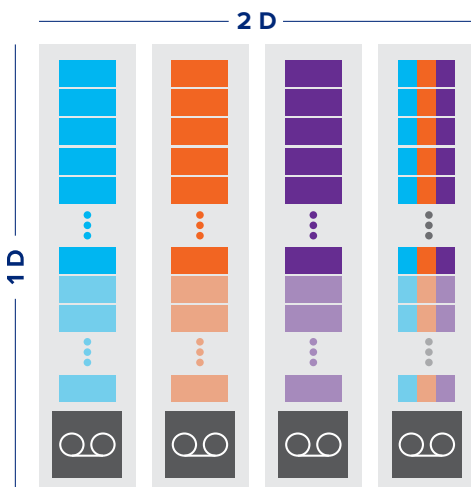
ActiveScale Cold Storage is based on our innovative, scale-up-and-out RAIL Architecture (Redundant Array of Independent Libraries) that is easily optimized for performance or cost to meet a variety of needs. By providing parallel access to multiple modular tape libraries, RAIL provides unlimited, incremental scalability, linear performance, plus higher availability and serviceability compared to monolithic libraries.



### Patent-Pending 2D Erasure Coding

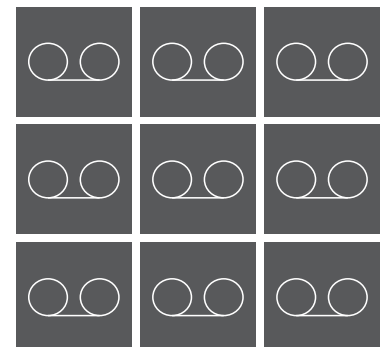
ActiveScale is the industry’s most durable cold storage by many orders of magnitude. With up to 19 9’s durability, your data is protected for the long term. Quantum’s two-dimensional erasure coding (2D EC) distributes object and parity shards within and across tapes, tape drives, tape libraries, and geo-dispersed data centers, simultaneously maximizing data access performance, data durability, and storage efficiency.

Tape writes are managed without impacting other object store tasks, delivering better performance and availability than all other tape-based solutions. Restoring an object requires only a single tape read, and 2D EC uses local reconstruction codes to recover from nearly all tape and drive errors using just a single tape. Quantum 2D EC delivers better data durability with less overhead – archives are designed to prevent any data loss, with the ability to withstand multiple points of failure, with overhead as low as 15%. In contrast, other solutions offer only two-copy protection or very limited erasure coding policies that substantially increase risk of data loss and require more storage hardware.

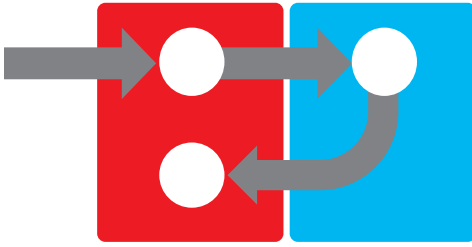


### Outstanding Tape Economics

Tape is the industry’s lowest-cost storage with the longest life span and superior reliability. It is truly green, consuming ultra-low power, significantly reducing carbon emissions. And with a strong capacity roadmap, its cost leadership will increase for the next decade. Based on Quantum Scalar® tape, the industry’s highest density, most innovative tape libraries, ActiveScale Cold Storage inherits these benefits, while enabling a seamless environment that dramatically simplifies tape management.



## S3 Storage Classes and Lifecycle Policies



To simply integrate into existing and emerging workflows, ActiveScale Cold Storage supports the S3 Glacier Storage Class as its primary interface. Standard PUT, RESTORE, and GET primitives are supported for simple management of cold data objects. In addition, lifecycle policies provide for automated transitioning of objects from Active Storage to Cold Storage. Applications include the Quantum StorNext® File System, Quantum CatDV Asset Management Platform, leading backup applications, many data management and archiving applications, and more. This new offering builds on the robust ecosystem of applications certified with ActiveScale today to provide many options for customers to move data to cold storage.

## Smart Data Staging and Tape Management

As a fully integrated solution, ActiveScale Cold Storage is smarter than other storage alternatives. Objects PUT to Cold Storage are immediately erasure coded and staged in Active Storage free space for instant acknowledgement, data protection, and consistency. Then, ActiveScale coordinates across all Cold Storage Class PUTs and RESTOREs to optimize tape streaming performance and data layouts for maximum performance and durability.



## Unmetered Cold Storage Access

In contrast to public cloud services, accessing your cold data with Quantum is easy, economical, and enriching. With full control, you choose restore strategies that make sense for your workflows and your timeframes, fully liberated from unpredictable access and storage fees. And objects are generally restored at streaming rates, typically, in minutes.



**Restores in Minutes**

## Bring the Cloud Experience to Wherever Your Data Lives

ActiveScale Cold Storage is the industry's leading solution for building data archives for today's hybrid cloud data centers. Optimized for accessibility, durability, and affordability, ActiveScale provides unlimited scalability and flexibility to meet the demands of your massive data growth and digital transformation initiatives. Confidently preserve and protect your digital assets, while unlocking its inherent and potential value, with Quantum.

# Quantum.

Quantum technology, software, and services provide the solutions that today's organizations need to make video and other unstructured data smarter – so their data works for them and not the other way around. With over 40 years of innovation, Quantum's end-to-end platform is uniquely equipped to orchestrate, protect, and enrich data across its lifecycle, providing enhanced intelligence and actionable insights. Leading organizations in cloud services, entertainment, government, research, education, transportation, and enterprise IT trust Quantum to bring their data to life, because data makes life better, safer, and smarter. Quantum is listed on Nasdaq (QMCO) and the Russell 2000® Index. For more information visit [www.quantum.com](http://www.quantum.com).

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