

# Nutanix Buckets™

Many enterprise organizations traditionally look for point solutions to manage unstructured data. These solutions create inefficient infrastructure silos, inherent complexity, and are difficult to manage, deploy, and scale.

## NO MORE STORAGE SILOS

Nutanix Buckets™ is a software-defined object storage solution that non-disruptively scales-out while lowering overall costs. It's designed with an S3-compatible REST API interface to handle terabytes to petabytes of unstructured data, all from a single namespace. Buckets is designed for backup, long term retention/archiving, and cross-region devops teams. It's deployed and managed as part of the Nutanix Enterprise Cloud Platform, reducing the need for additional storage silos. With Buckets, Nutanix customers can enable object storage services on existing clusters or set up new clusters with storage-dense nodes.

## EXPANDING YOUR ENTERPRISE CLOUD PLATFORM

Buckets is an integral part of the Nutanix enterprise cloud platform that enables VMs, files, block, and object storage to coexist on the same platform. It's easily enabled on the Nutanix cluster through a simple software update in a matter of a few clicks.

Nutanix software is deployed on a cluster of servers or nodes — starting with at least three or four in typical datacenter deployments. One and two-node deployment options are available for ROBO installations. Each node has CPU, memory, storage (SSD + HDD, or all-flash) and a hypervisor for running VMs and Buckets' components. The core Nutanix Acropolis (HCI) software runs in a user-mode VM called the Controller VM (CVM) on each node in the cluster. The Controller VMs create a single storage pool using the direct-attached storage in each node in the cluster. This is the Distributed Storage Fabric, or DSF. DSF provides Buckets with a multitude of enterprise grade capabilities such as resiliency, seamless scalability, security, and data reduction properties like erasure-coding, deduplication, compression and high availability. It completely eliminates the need for standalone storage arrays, like SAN and NAS products and while reducing overall costs.

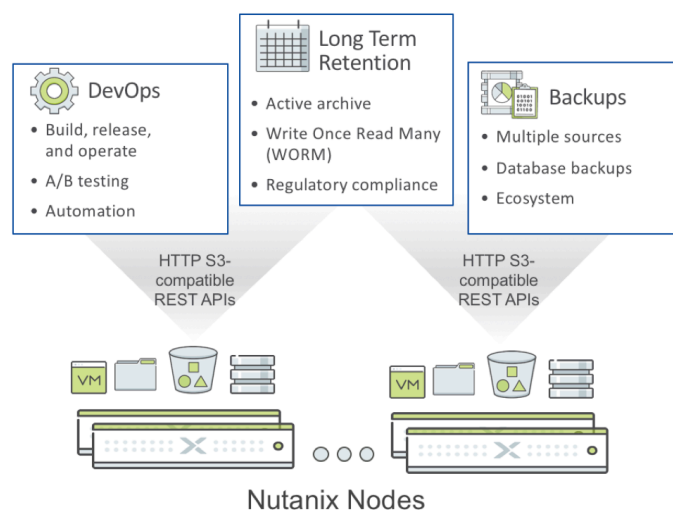


Figure 1: An S3-compatible interface alongside VMs, files, and block on the enterprise cloud platform.

## BENEFITS

- **Simplified Consolidation:**  
Enable services when you need them, run Buckets alongside VMs, files, and blocks on the same platform. Buckets can be deployed on an existing cluster or standalone.
- **Easily Achieve Compliance:**  
Enable WORM (Write Once Read Many) policies on any bucket and meet technical regulatory requirements in a few clicks. Enhance security postures with software or hardware data at rest encryption to a level of FIPS 140-2 compliance.
- **Scale with Anywhere Access:**  
Buckets expose an S3-compatible single namespace that scales from terabytes to petabytes of unstructured storage capacity, all accessed from a single namespace. No minimum storage capacity requirements.
- **Space-efficient Storage:**  
Buckets natively inherits Nutanix DSF (Distributed Storage Fabric) capabilities to provide erasure-coding, compression, and deduplication to optimize capacity utilization.

## THE NUTANIX BUCKETS ARCHITECTURE

Buckets is compatible with Amazon's Simple Storage Service API (S3 API) to simplify integration with applications. Nutanix Buckets, presents a single namespace in the object storage instance and supports the ability to create different bucket policies as required for the different application scenarios. Any component can be scaled out independently to match the workload demands. The architecture is designed with scalability and ease of upgrade in mind. In this scale-out modular design, each component focuses on a single core function.

The components of an Object Volume Manager in Buckets are as follows:

- **Frontend adapter:** manages the S3-compatible interface, REST API calls, and serves as the client endpoint.
- **Object controller:** serves as the data management layer that interfaces with AOS and also coordinates with the metadata service .
- **Metadata service:** serves as the metadata management layer and general key-value store, as well as, handles partitioning.
- **Atlas:** this is the service to control the lifecycle management, audits, and background maintenance activities.

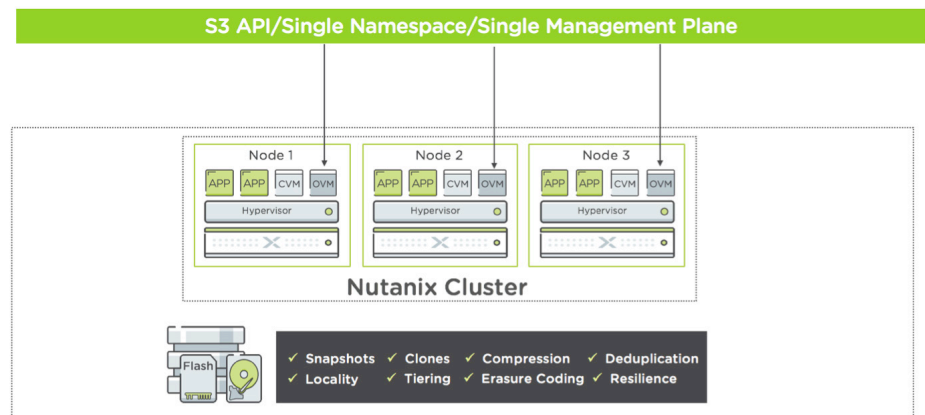


Figure 2: A single namespace with enterprise data services.


## KEY USE CASES:

- **Data Protection (Long Term Retention & Backup)** - Protect your data with a simple, scalable and cost-effective active archive solution. Utilize built-in object versioning for deeper storage protection and search your data without the hassle of tape systems.
- **WORM (Write Once Read Many)** - Preserve data in a non-rewritable and non-erasable format per SEC Rule 17a-4 in scalable compliant archive. Simply enable WORM policies on the bucket level.
- **DevOps** - Use a single namespace to “PUT” and “GET” objects over the network with HTTP commands. Integrate REST API calls within your programs or scripts without tracking complex directory structures. DevOps and IT Ops can simply leverage an S3-compatible interface for cross-geo, cross-team collaboration and agile development.

## KEY FEATURES:

- **Object Versioning** - Create copies of objects and protect your data from accidentally overwriting or deleting it.
- **Object Tagging** - Quickly identify objects by tagging them. Tag objects based on projects, compliance and more.
- **Multi-part Upload** - Reduce slow upload times by breaking data into “chunks” and quickly upload documents, images, videos and more to single namespace.



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