

Dell ObjectScale on VMware Cloud Foundation with Tanzu

Benefits of Dell ObjectScale on VMware Cloud Foundation with Tanzu

- Enterprise-grade object storage
- Starts with three nodes and scales out linearly
- S3 API-compatibility for streamlined application development
- Kubernetes-native containerized architecture
- Global replication for anywhere data access and fault tolerance
- Built-in data protection and security features
- Intelligent workload sizer optimizes the environment
- Custom tagging and search features
- Supports modern and traditional workloads

The relentless growth of data, containers and Kubernetes are driving modern application initiatives across the enterprise. While cloud native applications promise to increase development agility and accelerate innovation, many of these next-generation apps require modern S3-compatible storage to function optimally. Additionally, to fully embrace a true DevOps model, IT must provide developers with infrastructure resources, including storage, in a self-service manner, allowing for seamless integration into CI/CD pipelines. Compounding the complexity, IT is often forced to support modern apps and cloud-native initiatives with existing data center resources and expertise.

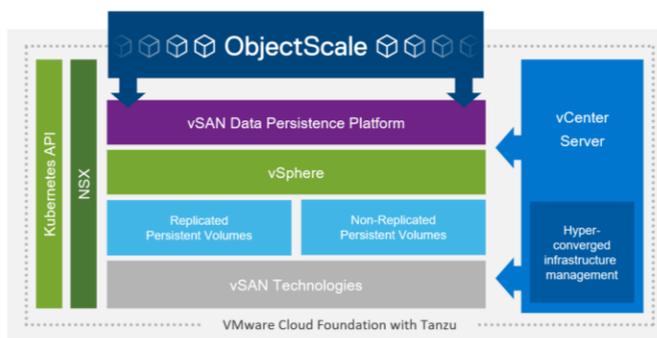
To solve these challenges, Dell Technologies and VMware have partnered to design a framework that brings cloud native object storage directly into the heart of VMware vSphere® through the development of the VMware vSAN™ Data Persistence platform. The vSAN Data Persistence platform provides a framework for VMware partners that offer modern stateful services to integrate with the underlying virtual infrastructure, allowing you to run stateful services with high velocity scaling, simplified IT operations, and optimized TCO. You can deploy a stateful service alongside traditional applications on a regular vSAN cluster with vSAN-SNA (vSAN Support for Shared Nothing Architecture) policy or deploy it on a dedicated vSAN cluster with VMware vSAN Direct Configuration™, a technology enabling direct access to the underlying direct-attached hardware which can be optimized for the application needs. Both options benefit from optimal storage efficiency for stateful services by leveraging service-level replication, as well as unified management of services in VMware vCenter®.

Through the vSAN Data Persistence platform, ObjectScale, Dell Technologies' enterprise-grade, Kubernetes-native, S3 compatible object storage software, gains access to the underlying storage, empowering IT administrators to deploy petabyte-scale infrastructure with a few clicks in the vCenter interface. ObjectScale is fully integrated with vSphere, making container management as easy as managing VMs for IT administrators.

As a result, IT operators can provision high-performance, multi-tenant object storage for a range of applications and use cases across internal and external stakeholders. This delivers dedicated and isolated resources to developers that can be tuned to the unique performance profile required by each individual

workload. This is all made possible due to ObjectScale’s microservices-based architecture, which enables each service to be scaled independently, ultimately allowing operators to “right size” every environment. With ObjectScale, you can unlock the potential of unstructured data and accelerate the path to digital transformation.

Solution Architecture



Key Benefits

Enterprise-grade object storage

Built with a scale-out architecture, ObjectScale clusters expand from a few terabytes to petabytes and beyond without limits on the number of object stores, buckets or objects stored. Clusters start as small as three nodes and scale out linearly. ObjectScale Replication enables objects to be replicated anywhere you have an ObjectScale footprint, from the edge to a core data center. By replicating data across the environment, you can protect workloads from outages and share data with teams anywhere in the world. ObjectScale also features enterprise security and data protection capabilities including D@RE, erasure coding, versioning, resource isolation, IAM, WORM features and more. It’s technology you can trust from the enterprise leader in storage.

Simplified operations

ObjectScale’s integration with the vSAN Data Persistence platform enables you to support modern application initiatives and workflows using the same VMware tools you know. By running ObjectScale in your VMware data center, you can control shadow IT while freeing developers to support CI/CD processes and agile methodologies in a self-service manner via Kubernetes APIs. IT operators can provision persistent cloud-scale object storage for modern stateful applications and extend Storage Policy-Based Management (SPBM) from VM volumes to container volumes, allowing for a consistent management approach. With ObjectScale, it’s easy to manage all your data with low overhead through a familiar vCenter UI.

Powers modern apps

S3 compatibility provides developers with a familiar set of APIs from which they can modernize existing workloads and design the next generation of enterprise applications. ObjectScale delivers on the latest S3 capabilities with ObjectScale Lock, IAM, Select, Event Notifications and ObjectScale Replication, enabling workloads previously built for the cloud to run seamlessly in your data center. ObjectScale is the ideal data store for emerging workloads including big data analytics, IoT storage, media content delivery, artificial intelligence and machine learning due to its performance, scalability, flexibility and ease of use. ObjectScale also serves as a cost-effective secondary storage tier, freeing up expensive primary storage and supporting traditional workloads like backups, long-term retention and tape replacement.

Primary Use Cases

Cloud-native web & mobile applications: ObjectScale is purpose-built for cloud-native applications. Featuring rich S3 compatibility for data access and Kubernetes APIs for container management, developers can integrate object stores into their CI/CD pipelines in a familiar, self-service manner, accelerating application development. Capable of scaling without limits, you can easily keep pace with data growth as applications expand in scope. ObjectScale Replication capabilities enable data to be distributed across any number of sites to promote fault tolerance and low-latency access.

Dev / Test: ObjectScale serves as the ideal sandbox for modern application development that requires S3. With automated provisioning and an integrated workload sizer, it's easy to deploy object stores and buckets. Multi-tenancy provides resource isolation while identity and access management (IAM) policies enable secure data access. Using ObjectScale, you can stand up scratch object stores in minutes, decommission them when no longer needed, or push them to production with a few simple clicks. Easily share data across development teams for greater collaboration and productivity.

Consolidated data lake: Store sensor telemetry, machine-generated logs and application data in an infinitely scalable, centralized data lake with ObjectScale. Deployable on all-flash or capacity-optimized media, you can choose the performance profile that best fits your workloads. Federate multiple sites together to eliminate data silos and provide anywhere access to data from edge to core. Tag objects to enhance analysis and make data more discoverable. Power data lake engines and analytics platforms from the likes of Cloudera, Dremio and Vertica.

AI & ML: ObjectScale delivers performance at scale to support next-gen machine learning and artificial intelligence workloads, the next frontier for object storage. ObjectScale delivers datasets at high transfer rates to the most demanding CPU and GPU servers, exposing AI training algorithms to more data without introducing the complexity of HPC storage. Clusters can be scaled-out with ease to enhance performance and capacity linearly. Additionally, object tagging provides inference models with richer datasets from which to make smarter predictions.

Analytics: Execute lightning-fast queries on a performant ObjectScale data lake to generate operational insights at the speed your business demands. With the ability to deploy on NVMe-based, all-flash drives, storage performance is no longer a bottleneck. Custom tags add additional context to data for greater discoverability and faster results. S3a enables Hadoop workloads to directly read and write data to ObjectScale, replacing the need for complex HDFS cluster management.

Backup & recovery: ObjectScale is a TCO-optimized S3 backup target. Featuring ObjectScale Lock for data immutability, data-at-rest-encryption (D@RE), global replication and erasure coding protection schemes, ObjectScale safeguards data from ransomware attacks and ensures resiliency from node or disk failures. With ObjectScale, everything from VMs to Office 365 backups are secure and available. It's business continuity at scale.

Enhancing Dell VxRail: ObjectScale enhances your Dell VxRail hyper-converged infrastructure with S3-compatible, cloud-native object storage capable of supporting workloads ranging from high performance analytics to long-term archives. ObjectScale is enabled by the VMware vSAN Data Persistence platform to support stateful sets and can be provisioned directly from the vCenter interface. Because VxRail is integrated, optimized, tested, and validated to run VMware's stack, you can now support modern application development initiatives without having to procure additional infrastructure.

Core Component Introduction

Dell ObjectScale

Dell ObjectScale delivers S3 compatible, globally scalable, enterprise-grade object storage from the industry leader, Dell Technologies. Integration with VMware Cloud Foundation with Tanzu provides developers with the freedom to provision and scale high performance object storage via Kubernetes APIs while ensuring exceptional simplicity, manageability and reliability for IT. With ObjectScale support cloud-native, AI/ML, analytics and long-term retention workloads at scale.

VMware Cloud Foundation with Tanzu

VMware Cloud Foundation with Tanzu is the best way to deploy Kubernetes at scale. VMware Cloud Foundation is a ubiquitous hybrid cloud platform for both traditional enterprise apps and modern apps, providing a complete set of secure software-defined services for compute, storage, network security, Kubernetes management, and cloud management. VMware Cloud Foundation with Tanzu automates full-stack deployment and operation of Kubernetes clusters through integration with VMware Tanzu Kubernetes Grid.

VMware vSAN

vSAN is a key component in VMware Cloud Foundation. vSAN is the market leader in hyperconverged Infrastructure (HCI), enables low cost and high-performance next generation HCI solutions, converges traditional IT

infrastructure silos onto industry-standard servers and virtualizes physical infrastructure to help customers easily evolve their infrastructure without risk, improve TCO over traditional resource silos, and scale to tomorrow with support for new hardware, applications, and cloud strategies.

Resources

Discover more about Cloud Native Storage in vSphere and vSAN on [the website](#)

- Check out VMware Cloud Foundation with Tanzu on [the website](#)
- Visit the [Cloud Foundation Tech Zone](#) for more demos and deep dives of VMware Cloud Foundation with Tanzu, vSphere and vSAN.
- Learn more about Dell ObjectScale on [the website](#)
- Keep posted on the latest and greatest of VMware Cloud Foundation via VMware Cloud Foundation [Blog](#), [Twitter](#), and [YouTube](#).



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