EBOOK

NetApp Cloud Volumes

ONTAP for Azure

ENTERPRISE DATA MANAGEMENT IN THE CLOUD

NetApp

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NetApp Cloud Volumes ONTAP for Azure

"Delivered through a software-defined approach, a Data Fabric provides consistent data management, efficient data transport, and the visibility to utilize the right IT resources when and where you need them."

– NETAPP SENIOR TECHNICAL DIRECTOR, DATA FABRIC ARCHITECTURE

Introducing NetApp Data Fabric - Seamless data management across the hybrid cloud

IT teams face challenges in three critical areas: responsiveness, control, and choice. How can you innovate to respond quickly to dynamic business demands? How can you be the steward of your own data no matter where it resides or for how long? And how can you choose resources that work best for your business?

To address these needs, enterprises are turning to the cloud. However, having a hybrid cloud environment that spans on-premises data centers and public cloud locations creates unique problems in terms of data protection, security, and governance. Too often, the hybrid cloud approach results in isolated, incompatible data silos.

As a leading provider of software, systems, and services to manage and store data on-premises and in the cloud, NetApp identified these challenges early.

We pioneered the concept of a Data Fabric with a common set of data services. Delivered through a software-defined approach, a Data Fabric provides consistent data management, efficient data transport, and the visibility to utilize the right IT resources when and where you need them.

With Cloud Volumes ONTAP, you can quickly deploy enterprise-class data storage in Azure and manage cloud data as if it were in your own data center.

Cloud Volumes ONTAP for Azure delivers seamless data control, flexibility, and cost efficiency.

With the introduction of NetApp Cloud Volumes ONTAP for Azure, the full advantages of a NetApp Data Fabric are now available for the Azure cloud.

Cloud Volumes ONTAP for Azure is a cloud-ready version of the #1 NetApp ONTAP data management software[1]. With Cloud Volumes ONTAP, you can quickly deploy enterprise-class data storage in Azure and manage cloud data as if it were in your own data center. Moving data to and from Azure is simple, and advanced storage efficiency features minimize your data storage footprint. Different procurement options make it easy to meet your business needs.

This eBook explores the capabilities of Cloud Volumes ONTAP for Azure in detail.

RESPONSIVENESS

Find innovative ways to meet dynamic business demands

CONTROL

Be the steward of your data no matter where and how long it lives

CHOICE

Choose the resources that work nest for your business

[1](source: IDC Worldwide Quarterly Enterprise Storage Systems Tracker 2016 Q4, March 2017 [Open Networked Enterprise Storage Systems revenue])

Enterprise-Class Data Management

Cloud Volumes ONTAP for Azure augments Azure storage services to provide enterprise capabilities, consistent data formats, and streamlined data mobility.

Enterprises moving to a hybrid cloud environment seek many of the same data management capabilities in the cloud that they have on-premises, including the data protection, resource efficiency, and data mobility needed to satisfy operational requirements.

Cloud compute resources are agile, but data is not. Data management often poses additional challenges in the cloud. Data must be close to compute for performance, while transferring data between clouds is frequently difficult. Moving data is time-consuming and can require significant bandwidth (at significant expense). The data formats and data services used by your on-premises storage and those of various cloud services can be incompatible and inconsistent.

This is where Cloud Volumes ONTAP comes in. Cloud Volumes ONTAP for Azure augments Azure storage services to provide enterprise capabilities, consistent data formats, and streamlined data mobility.

How Cloud Volumes ONTAP for Azure Works

Cloud Volumes ONTAP runs as an Azure compute instance using either standard or premium Azure storage. By layering Cloud Volumes ONTAP for Azure on top of Azure compute services, NetApp provides the advantages of ONTAP entirely within the Azure cloud.

Move application data to and from the cloud and run existing applications in Azure with no changes to existing processes and without sacrificing data management capabilities.

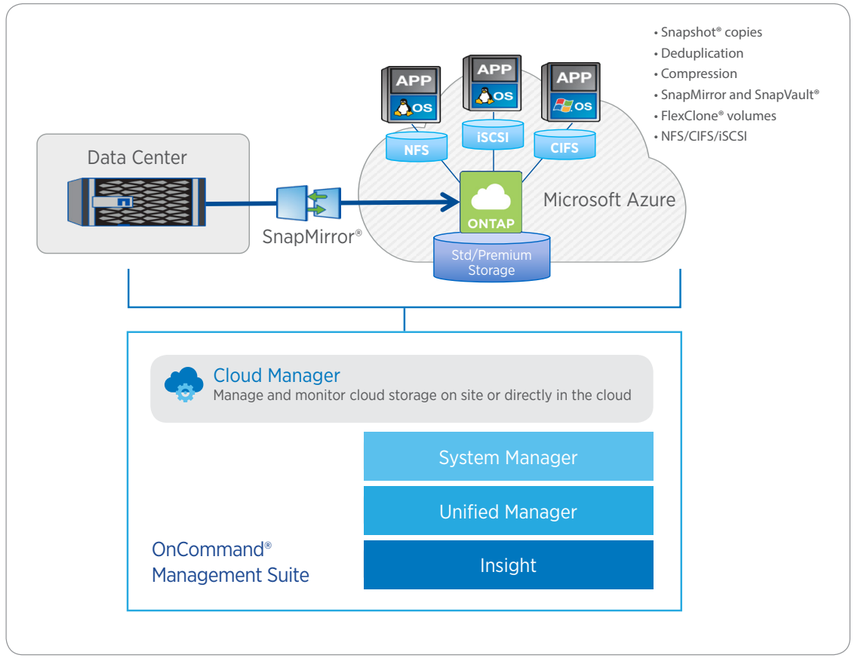
This means that applications use storage from Cloud Volumes ONTAP just as they would any other NetApp storage—without any time-consuming retooling. As a result, you can easily move application data to and from the cloud and run existing applications in Azure with no changes to existing processes and without sacrificing data management capabilities.

Even if you're not a NetApp customer, you can configure and start using Cloud Volumes ONTAP for Azure immediately, gaining a wide range of data management benefits such as the ability to enhance data protection and availability, enable file services, or accelerate DevOps, all while reducing your overall storage footprint.

The benefits of Cloud Volumes ONTAP for Azure include:

- Better control of your data across the cloud and on-premises
- Enterprise data management, including data protection and disaster recovery (DR)
- Superior efficiency through data reduction
- Flexibility through an ability to run file services as well as block-based applications

In addition, Cloud Volumes ONTAP for Azure is fast to deploy, you can pay as you go, and it's free to try for 30 days. The sections that follow explore its capabilities in more detail.



DevOps in the Cloud

Wirestorm turned to Cloud Volumes ONTAP to transform its DevOps Environment and reduced the time to provision dataset copies for testing from 20 hours to less than a minute.

"For a DevOps shop, ONTAP takes productivity to a whole new level."

– WIRESTORM VICE PRESIDENT OF ENGINEERING

WIRESTORM.

Unified File and Block Services

By providing unified file and block services for the Azure cloud, Cloud Volumes ONTAP for Azure makes it easier to move enterprise applications and other important workflows to Azure.

ONTAP has always been the best storage environment for multiprotocol support, and Cloud Volumes ONTAP inherits its multiprotocol abilities. Cloud Volumes ONTAP provides file-based NAS protocols (both CIFS/SMB and NFS) as well as the block-based iSCSI protocol, giving you the flexibility to support your organization's transition to the cloud.

For instance, as development operations move to the cloud, you can provide file shares in Azure to allow access to familiar tools and other shared files. Microsoft applications such as SQL Server database instances can access data using either iSCSI or SMB.

With Cloud Volumes ONTAP, any application or service in Azure can have the file or block storage it requires—with the same data management capabilities and resource efficiency of NetApp storage running on-premises.

DR in the Cloud

A well-known HR company turned to NetApp when it wanted to begin moving its systems to the cloud. With Cloud Volumes ONTAP, the company can now failover from its on-premises systems to Azure for disaster recovery and manage all of its storage using a single interface.

"They really understood our needs and were committed to delivering what we needed."

– DIRECTOR OF IT INFRASTRUCTURE

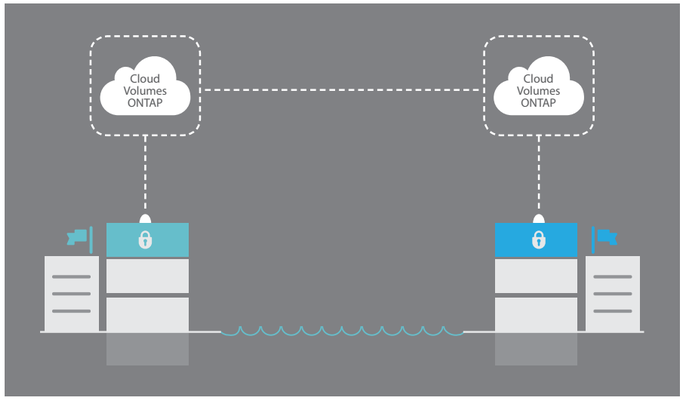
Data Protection and Disaster Recovery

Cloud Volumes ONTAP provides data management and data protection services often lacking in the cloud, delivering a full suite of proven enterprise capabilities.

All of the well-known and proven NetApp data protection tools work with Cloud Volumes ONTAP for Azure, simplifying data protection and data management tasks in Azure cloud:

- **Snapshot® Copies** Provide near-instantaneous point-in-time backups of your data that don't consume additional resources or affect application performance.
- **SnapMirror® Replication** Moves data to and from the cloud or provides DR.
- **SnapVault® Backup** Flexibly replicates Snapshot backups for long-term retention.
- **SnapManager® Software** Provides application-aware data protection for popular applications, including Microsoft Exchange, SQL Server, Oracle, and SAP.
- **SnapCenter® Software** Copy data management across the Data Fabric.

These tools make it simple and cost-effective to provide enterprise-level data protection in the cloud. For example, you can use SnapMirror to replicate on-premises data to Azure or replicate between separate instances in different Azure regions to provide DR in the cloud.



Why Resource Efficiency Matters

An enterprise resource planning (ERP) vendor needed the ability to rapidly deploy space-efficient dev/test environments in the cloud. It selected Cloud Volumes ONTAP to decrease the time it takes to create new dev/test instances and reduced its footprint for cloud storage by 90%.

"With NetApp technology, we've been able to exceed customer expectations."

– R&D DIRECTOR FOR CLOUD

Cloud Resource Efficiency

A significant advantage of Cloud Volumes ONTAP is the ability to apply a full set of resource efficiency features, including data deduplication, compression, thin provisioning, and cloning. These technologies have been designed to complement one another. Used together or separately, they greatly reduce the amount of cloud storage you need.

These technologies reduce the time required to support your applications or development and test environments running in the cloud, further lowering your overall costs. For datasets you intend to replicate, data deduplication and compression can also save significant time and bandwidth:

- **Data Deduplication** Any dataset contains a certain amount of duplication at the file and block levels. Deduplication detects when a block being written is identical to an existing block and saves a pointer rather than writing the block again. Savings can be substantial, especially in virtualized environments and for backup and archive data.
- **Compression** ONTAP has been designed to efficiently read and write compressed data to minimize system overhead. Enabling compression can yield significant space savings for database files where deduplication may be less beneficial.
- **Thin Provisioning** Any time you provision a new application or database instance, it's normal to provision a certain amount of storage space up front. That capacity sits idle until it's consumed, so you end up paying for resources you're not using. By not allocating capacity until it's actually needed, thin provisioning eliminates this problem. And, because all workloads on a Cloud Volumes ONTAP for Azure instance share a single pool of storage, capacity planning is simplified.
- **Cloning** ONTAP FlexClone® technology allows you to make a space-efficient "clone" of a volume, LUN, or file. A clone has a near–zero capacity footprint and only consumes additional storage space as changes are made. Cloning can be particularly advantageous in development and test or DevOps environments, where many identical workspaces and many copies of test datasets are required.

OnCommand Cloud Manager

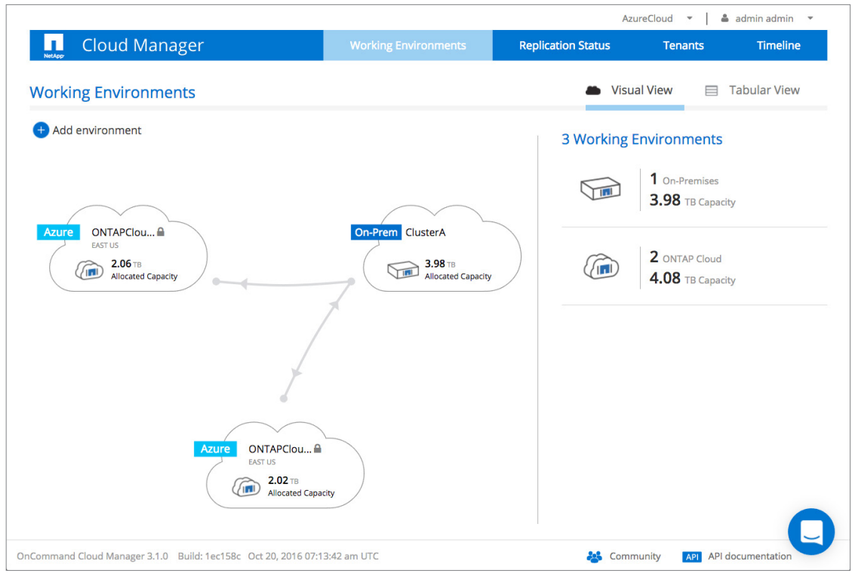
Cloud Manager simplifies configuration and deployment of Cloud Volumes ONTAP instances and provides a central point of control.

The cloud is new for many enterprises, so it is important that software tools simplify the experience. With the introduction of Cloud Volumes ONTAP, NetApp created OnCommand® Cloud Manager to address this need. Cloud Manager software is free of charge and provides a centralized management environment for Cloud Volumes ONTAP, NetApp Private Storage (NPS), AFF, and FAS storage systems.

NetApp has designed OnCommand Cloud Manager as an integral part of Cloud Volumes ONTAP. Cloud Manager simplifies configuration and deployment of Cloud Volumes ONTAP instances and provides a central point of control for all instances. It eases the day-to-day management of Cloud Volumes ONTAP storage, including configuring, provisioning, and monitoring each of your active storage instances. It also provides cost monitoring for the cloud resources you consume and simplifies license and entitlement management.

Cloud Manager offers a volume view mode that provides a simple interface for ONTAP managed cloud storage, abstracting the storage infrastructure and letting you select volumes for your application.

In addition to managing Cloud Volumes ONTAP, Cloud Manager also administers NetApp Private Storage instances.



Cloud Manager abstracts the storage infrastructure and provides a simple interface for ONTAP managed cloud storage.

Key features of OnCommand Cloud Manager include:

- Simplifies configuration and deployment of Cloud Volumes ONTAP for AWS and Cloud Volumes ONTAP for Azure
- Provides a central point of control for all Data Fabric–connected instances
- Automates data movement between your data centers and the cloud
- Offers data security choice through NetApp managed encryption
- Integration with OnCommand Insight enables monitoring of your entire hybrid storage environment
- Eases license, entitlement, and upgrade management
- Enables non-disruptive migration between Cloud Volumes ONTAP pay-as-you-go licenses
- Facilitates hybrid environments that include NetApp AFF, FAS, and Cloud Volumes ONTAP

Getting Started

Try Cloud Volumes ONTAP for Azure for Free

Get started with free 30-day trial and discover the benefits for yourself.

30
DAY FREE TRIAL

Get started with Cloud Volumes ONTAP for Azure and gain access to enterprise-class data management in minutes.

Cloud Volumes ONTAP is offered in multiple purchase models. You can purchase it in the Azure Marketplace, with an hourly model, or directly from NetApp using the "bring your own license" (BYOL) option in an annual license. NetApp enterprise-class software support is included with all pricing options.

Cloud Volumes ONTAP for Azure choices include:

- **Cloud Volumes ONTAP Explore** Suitable for smaller capacity applications (up to 2TB of underlying Azure storage)
- **Cloud Volumes ONTAP Standard** Flexible performance and larger capacity for a wider range of applications (up to 10TB of underlying Azure storage)
- **Cloud Volumes ONTAP Premium** Flexible performance and larger capacity for a wider range of applications (up to 252TB of underlying Azure storage)
- **Cloud Volumes ONTAP BYOL** Flexible performance and expanded capacity, offered in a longer term subscription (up to 252TB of Azure storage)

To get started, deploy OnCommand Cloud Manager from NetApp Cloud Central. After it is deployed, use the wizard-based Cloud Manager interface to deploy Cloud Volumes ONTAP instances. Within minutes, you can have a fully functioning Cloud Volumes ONTAP instance, ready to start serving data.

Visit NetApp Cloud Central: cloud.netapp.com

NetApp Cloud Central is the home for NetApp Cloud Data Services, a suite of data-driven services allowing you to run critical applications in the cloud, create automated DR sites, back up your SaaS data, and effectively migrate and control data across multiple clouds leveraging NetApp's prominent data management expertise and technologies.

BACK

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