Datasheet

NetApp Cloud Volumes ONTAP

Simple and fast data management in the cloud

Key Benefits

- NetApp® Cloud Volumes ONTAP® software lets you control your public cloud storage resources with industry-leading data management.
- Multiple storage consumption models provide the flexibility that allows you to use just what you need, when you need it.
- Rapid point-and-click deployment from NetApp Cloud Manager enables you to deploy advanced data management systems on your choice of cloud in minutes.

The Challenge

In today's IT ecosystem, the cloud has become synonymous with flexibility and efficiency. When you deploy new services or run applications with varying usage needs, the cloud provides a level of infrastructure flexibility that allows you to pay for what you need, when you need it. With virtual machines, the cloud has become a go-to deployment model for applications that have unpredictable cycles or variable usage patterns and need to be spun up or spun down on demand.

Applications with fixed usage patterns often continue to be deployed in a more traditional fashion because of the economics in on-premises data centers. This situation creates a hybrid cloud environment, employing the model that best fits each application. In this hybrid cloud environment, data is at the center. It is the only thing of lasting value. It is the thing that needs to be shared and integrated across the hybrid cloud to deliver business value. It is the thing that needs to be secured, protected, and managed.

You need to control what happens to your data no matter where it is. Although you can outsource infrastructure, applications, and services to the cloud, you can never outsource the responsibility you have for your business data. You have spent years controlling and aligning the appropriate levels of data performance, protection, and security in the data center to support your applications. Now, as you seek to pull in a mix of public cloud resources for infrastructure and apps, you need to maintain control of your data in this new hybrid cloud. You need a single, cohesive data environment, or data fabric, to give you control of your data no matter where it is.

Managing Data in the Cloud

Public cloud providers, such as Microsoft Azure, Amazon Web Services (AWS), and Google Cloud, offer many services, including infrastructure as a service, for which you can purchase raw compute and storage resources to use as you see fit. You can use cloud server environments to run your applications and raw storage services to store your data. If you want to utilize the storage in a way that is consistent with your on-premises data center, it is important that your data be controlled and protected.

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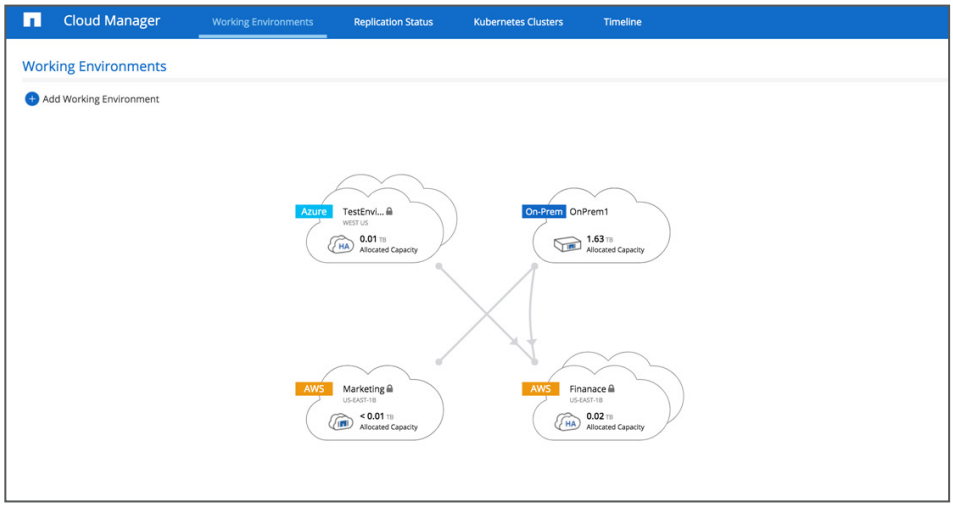


Figure 1) NetApp Cloud Manager.

Each cloud provider offers features and services that help with these issues. But how do you validate that your data is secure, under control, and consuming the least amount of cloud resources to address your needs? Can you simply get the data in and out of the cloud in a way that is consistent with your on-premises storage environments? Do your teams need to learn a new set of interfaces and tools? Does the storage have the functionality you need, such as file share services (SMB and NFS), data deduplication, or multiregion replication?

NetApp Cloud Volumes ONTAP

NetApp Cloud Volumes ONTAP data management software delivers control, protection, flexibility, and efficiency to your data on your choice of cloud. Cloud Volumes ONTAP is cloud-native data management software built on NetApp ONTAP storage software, providing you with a superior universal storage platform that addresses your cloud data needs. Having the same storage software in the cloud and on your premises brings you the value of a data fabric without requiring that you train your IT staff in all-new methods to manage your data.

Cloud Volumes ONTAP provides a data storage solution that fits many different customer requirements. These requirements range from disaster recovery, development, and test environments to cloud-based applications that require highly available nondisruptive operation, such as production business applications and file services that use NFS and SMB. Cloud Volumes ONTAP is deployed and managed from NetApp Cloud Manager as a software-only solution on cloud compute instances managing cloud storage. This capability enables you to build a virtual storage environment directly on your choice of cloud resources.

Cloud Volumes ONTAP brings advanced NAS capabilities to your cloud environment, making your data transition to the cloud a seamless experience for your Windows and Linux applications. ONTAP gives you a unified data management experience across SMB, NFS, and iSCSI. With NetApp technology, you get zero-impact NetApp Snapshot™ copies, which provide near-instantaneous point-in-time copies of your data to enable rapid data recovery without consuming additional storage resources or affecting your application performance.

In addition, you minimize your storage footprint and cloud resource expenditures with storage efficiency features such as data deduplication and data compression, which can act on your primary data. With NetApp SnapCenter® software, you get application consistency with those Snapshot copies. On top of all the local storage features, ONTAP provides industry-leading storage replication capabilities with NetApp SnapMirror® technology. This technology brings your hybrid cloud together by tying your on-premises NetApp AFF, FAS hybrid, and ONTAP Select software-defined storage, as well as NetApp HCI, to your Cloud Volumes ONTAP environment.

NetApp Cloud Manager

The cloud is a new environment for many enterprises, and as you find a way to simplify your cloud resource usage, it is important to have tools available to enhance the experience. Cloud Manager software is a centralized management environment for your ONTAP software-based hybrid cloud storage environment, including the Cloud Volumes ONTAP, AFF, FAS, and ONTAP Select storage systems. Cloud Manager is the deployment environment for Cloud Volumes ONTAP and provides installation, resource assignment, and provisioning of data.

Cloud Manager provides day-to-day management activities for your data fabric endpoints and can automate your data movement to and from the cloud. Cloud Manager integrates seamlessly with your cloud environment, so you can use your cloud credentials to deploy the resources you need to meet your storage requirements. With visibility into the resources consumed by each Cloud Volumes ONTAP instance, Cloud Manager lets you monitor resources and understand their cost over time. This feedback can help you decide when to move workloads to the most cost-efficient environment.

Cloud Manager Key Features

- Simplifies configuration and deployment of Cloud Volumes ONTAP
- Provides a central point of control for all Cloud Volumes ONTAP instances
- Automates data movement between your premises and the cloud
- Provides cost monitoring of your cloud storage resources
- Eases license, entitlement, and upgrade management
- Facilitates hybrid environments that include Cloud Volumes ONTAP, AFF, FAS, and ONTAP Select storage systems

Consumption Models

In addition to the features that Cloud Volumes ONTAP offers, there are two consumption methods: pay as you go and bring your own license (BYOL). Pay as you go is purchased directly from your cloud provider marketplace and is charged on an hourly basis. The BYOL model is a license, purchased from NetApp, that is installed in your Cloud Volumes ONTAP instance. BYOL subscriptions can be purchased in 1-, 2-, or 3-year increments.

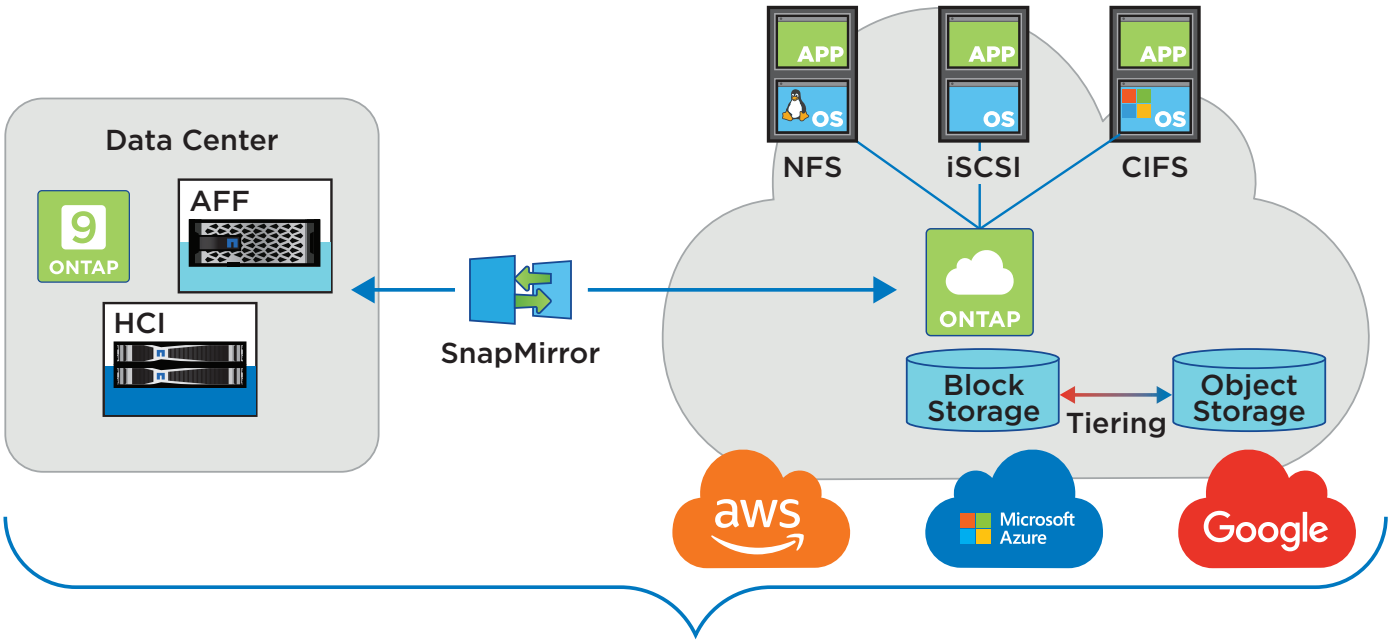
For short-term application needs, or for environments that must spin up or down on demand, the hourly pay-as-you-go consumption model is appropriate. If your application is more deterministic or will be used for longer periods of time, the annual subscription might be better. Within each consumption model, there are multiple solutions that start at a single node with 2TB raw capacity and range up to two-node high-availability (HA) environments with up to 368TB of raw capacity.

A True Hybrid Cloud

To help you determine the infrastructure that best fits your application and economic needs, NetApp offers a wide variety of options from which to choose. These options range from on-premises AFF or FAS systems to ONTAP Select software-defined storage, NetApp HCI, and in-the-cloud Cloud Volumes ONTAP software.

About NetApp

NetApp is the data authority for hybrid cloud. We provide a full range of hybrid cloud data services that simplify management of applications and data across cloud and on-premises environments to accelerate digital transformation. Together with our partners, we empower global organizations to unleash the full potential of their data to expand customer touchpoints, foster greater innovation and optimize their operations. For more information, visit www.netapp.com. #DataDriven



NetApp Management Suite

Consistently manage and monitor your data across clouds and on-premises.

Figure 2) NetApp Cloud Volumes offers enterprise data management on your choice of cloud.

	MICROSOFT AZURE		GOOGLE CLOUD		AMAZON WEB SERVICES	
Licensing	**Pay-as-you-go**	**BYOL**	**Pay-as-you-go**	**BYOL**	**Pay-as-you-go**	**BYOL**
Available HA support	Yes	Yes	No (future)	No (future)	Yes	Yes
Protocol support	NFS, SMB, iSCSI		NFS, SMB, iSCSI		NFS, SMB, iSCSI	
Encryption at rest	NetApp Volume Encryption Azure Storage Service Encryption		NetApp Volume Encryption Google Cloud Platform default encryption		NetApp Volume Encryption AWS encryption with default key or external key	
Data protection	Snapshot copies, SnapMirror data replication for disaster recovery and backup, NetApp SnapRestore® data recovery					
NetApp FlexClone® volumes	Yes	Yes	Yes	Yes	Yes	Yes
Storage efficiency	Thin provisioning, data deduplication, compression, compaction					
NetApp SnapLock® file locking (WORM)	Yes	Yes	Yes	Yes	Yes	Yes
Data tiering to object storage	Yes	Yes	Yes	Yes	Yes	Yes
Region support	See the full list on the Cloud Volumes Global Regions page					
Disk/volume types	Standard HDD Standard SSD Premium SSD	Standard HDD Standard SSD Premium SSD	Standard storage: pd-standard Premium storage: pd-ssd	Standard storage: pd-standard Premium storage: pd-ssd	GP2, ST1, SC1, and IO1	GP2, ST1, SC1, and IO1
Solution capabilities	Explore: up to 2TB Standard: up to 10TB Premium: up to 368TB	BYOL: up to 368TB	Explore: up to 2TB Standard: up to 10TB Premium: up to 64TB	BYOL: up to 64TB; up to 368TB when using data tiering	Explore: up to 2TB Standard: up to 10TB Premium: up to 368TB	BYOL: up to 368TB

Table 1) Application environments and workload characteristics.