



NetApp®



Solution Brief

Cloud ONTAP: Extending Enterprise Storage Services to the Cloud

KEY BENEFITS

- Control public cloud storage resources with the NetApp® Data ONTAP® operating system—NetApp Data ONTAP is the world's #1 branded storage OS*—the same great storage management software for your data center.
- Multiple storage consumption models provide the flexibility that allows you to truly use just what you need, when you need it.
- Simple point-and-click deployment from OnCommand® Cloud Manager allows you to rapidly deploy Cloud ONTAP instances and easily provision and manage storage on Amazon.

The Challenge

In today's IT ecosystem, the cloud has become synonymous with flexibility and efficiency. When deploying new services or running applications with varying usage needs, the cloud provides a level of flexibility in your infrastructure that allows you to use what you need, when you need it. With virtual machines, this has become a go-to deployment model from applications that are either spun up or spun down on demand to applications with bursty usage patterns. When it comes to data, however, it is not that clear cut. Data has gravity and is difficult to pick up and move to a new location. There needs to be a simple, controlled solution that enables IT professionals to govern their data with the functionality they have come to expect in their own private environments.

Managing Data in the Cloud

Hyperscale cloud providers offer many functions, including infrastructure as a service, with which they offer customers raw server and storage resources to use as they see fit. Customers can use the raw server, or virtual server, environments to run their applications and the raw storage for data. In order to utilize the storage in a way that is consistent with customer data center premises, it is important that their cloud data be governed and protected.

Hyperscale cloud providers offer a number of features and services that help with these issues, but how do you achieve true enterprise capabilities in the cloud that integrate with your on-premises storage management? Can you simply get the data in and out as you do in your own storage environments? Do your teams need to learn

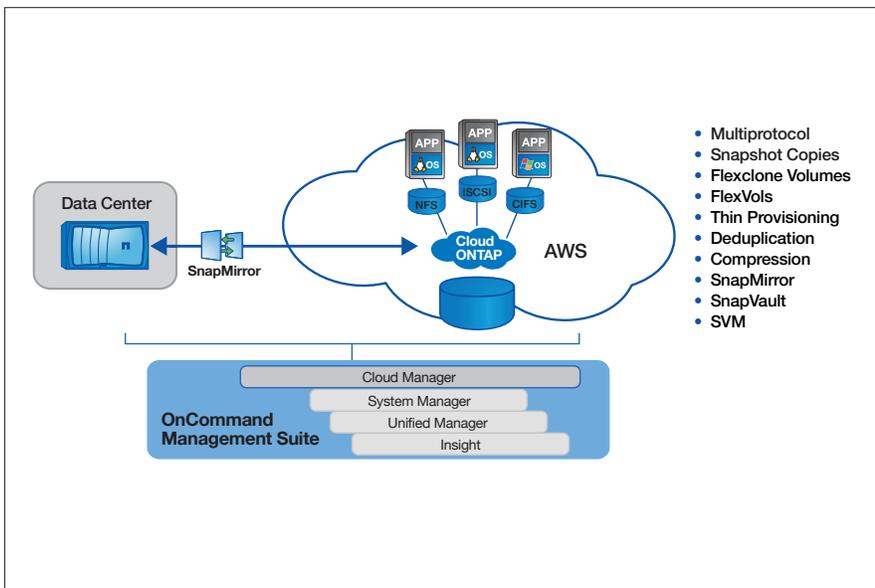


Figure 1) NetApp Cloud ONTAP for AWS

a new set of interfaces and tools? Does the storage have the functionality you need, such as file share services (NFS/CIFS), data deduplication, or application-integrated snapshots?

NetApp Cloud ONTAP

NetApp Cloud ONTAP delivers control and governance of your data with the flexibility of a virtual machine. Cloud ONTAP is a software-only storage appliance built on the NetApp clustered Data ONTAP storage operating system, providing you with a superior universal storage platform from your data center premises to the cloud. Having the same storage operating system in the cloud as you do on the premises brings you the true value of a hybrid cloud environment without having to train your IT staff in all new methods to manage your storage.

Cloud ONTAP provides a data storage solution that fits many different customer requirements, from small-capacity,

low-performance applications to medium-scale applications with higher performance needs. Cloud ONTAP is deployed and managed from OnCommand Cloud Manager as a virtual machine on Amazon EC2 compute instances managing Amazon EBS storage, allowing customers to build a virtual storage solution directly on Amazon resources.

Building your cloud storage environment on Cloud ONTAP provides enterprise-class features for your cloud storage. Clustered Data ONTAP allows you to provision both NAS and SAN storage for your application environment with CIFS, NFS, and iSCSI support. You also get zero-impact NetApp Snapshot™ copies that provide near-instantaneous point-in-time backups of your data without taking additional storage resources. In addition you minimize your storage footprint with efficiency features such as data deduplication

and data compression that can act on your primary data. With clustered Data ONTAP's SnapManager® tools suite, you get application consistency with those Snapshot copies. And on top of all the local storage features, clustered Data ONTAP provides #1 storage replication SnapMirror® technology, which brings your hybrid cloud together by tying your on-premises FAS storage to your Cloud ONTAP environment.

OnCommand Cloud Manager

The cloud is a new environment for many enterprises, and as you find a way to simplify how the resources are utilized, it is important to have tools available to simplify the experience. Cloud Manager is the deployment environment for Cloud ONTAP and provides installation, resource assignment, and provisioning of data. Once Cloud ONTAP is operating, Cloud Manager provides day-to-day management activities for the environment.

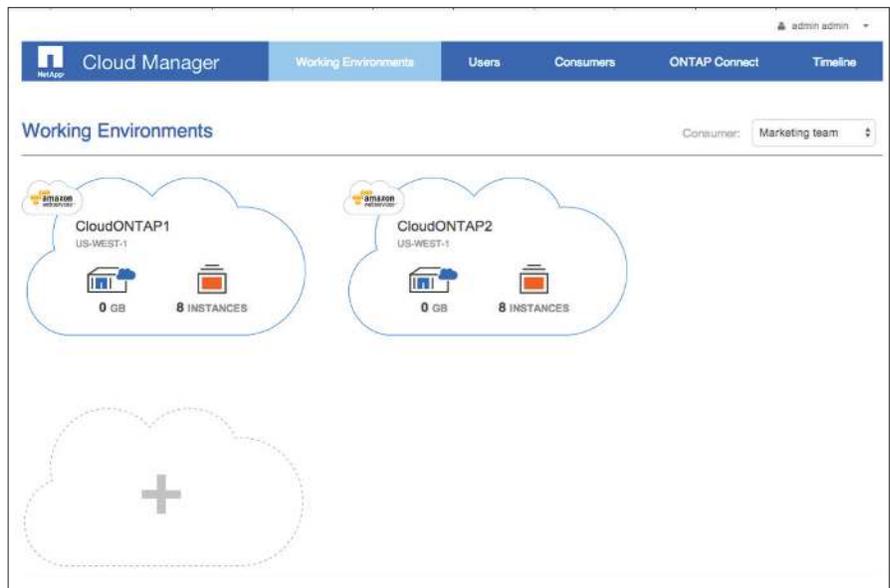


Figure 2) OnCommand® Cloud Manager

Cloud Manager integrates with your cloud environment, allowing you to insert credentials that enable it to gather the resources to meet your storage requirements. With visibility into the resources consumed by each instance, Cloud Manager monitors and provides valuable feedback to the administrator on the cost of resources over time, helping you to decide when to move workloads to the most cost-efficient environment.

Cloud Manager Key Features

- Simplifies configuration and deployment of Cloud ONTAP
- Provides central point of control for all Cloud ONTAP instances
- Provides Amazon Web Services (AWS) cloud resource cost monitoring
- Eases license and entitlement management
- Facilitates hybrid environments that include Cloud ONTAP and NetApp Private Storage (NPS)

Consumption Models

On top of the features that it offers, Cloud ONTAP provides two methods for consuming the storage: Pay-as-You-Go and Subscription. Pay-as-You-Go is purchased directly from your Amazon account and is charged on an hourly usage basis. The Subscription model offers a six-month subscription license from NetApp that is installed in your Cloud ONTAP instance. For application needs that are short term and/or for environments that must spin up or down on demand, the Pay-as-You-Go consumption model is appropriate. If your application is more deterministic and/or will be used for longer periods of time, the Subscription model may be utilized. There are multiple solutions within each consumption model that range from the smaller Pay-as-You-Go solution at 2TB to the larger Subscription model of up to 50TB.

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 to choose from. These options range from on-premises storage systems to the cloud, including near-the-cloud FAS storage systems and in-the-cloud Cloud ONTAP systems.

The table on the following page shows the workload characteristics to help you choose which application environment best fits your applications.

About NetApp

Leading organizations worldwide count on NetApp for software, systems and services to manage and store their data. Customers value our teamwork, expertise and passion for helping them succeed now and into the future.

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	CLOUD ONTAP EXPLORE	CLOUD ONTAP STANDARD
Multiprotocol	•	•
Data Protection Bundle	•	•
FlexClone®	•	•
EC2 Instance Type	M3.XL	M3.XL, M3.2XL
EBS Volume Type	GP2	GP2
Procurement (License)	Pay-as-you-go (AWS)	Pay-as-you-go (AWS) Subscription (NetApp)
Max Capacity	2TB	10TB (AWS) 50TB (Subscription)
Support	Software Support Plan	Software Support Plan

Cloud ONTAP Solutions

APP LOCATION	SOLUTION	APPLICATION PROPERTIES
On Premises	FAS/E-Series	Application usage pattern and resource requirements are well known, with longer-term usage
Near the Cloud	NPS for Cloud	Application has high governance requirements and/or high performance and capacity, but with variable usage patterns
In the Cloud	Cloud ONTAP	For new or unknown application requirements or applications with requirements for rapid deployment of storage to accommodate varied workloads



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