FAQs

1. What is Cloud Volumes ONTAP?

Answer: NetApp Cloud Volumes ONTAP is a software-only storage subscription running the NetApp ONTAP storage software offering you control of your data with the power of an enterprise storage software solution. Building your cloud storage environment on Cloud Volumes ONTAP provides enterprise-class features for your cloud storage.

• Non-disruptive, two node high-availability (HA) support keeps you operating against unplanned storage failures in the cloud

• Provision both NAS and SAN storage with NFS, CIFS and iSCSI support

• Minimize your storage footprint with efficiency features such as data deduplication, thin provisioning and data compression

• Zero-impact NetApp Snapshot™ copies with near-instantaneous point-in-time backups of your data without taking additional storage resources

• NetApp SnapMirror® technology brings your hybrid cloud environment together by tying on-premises FAS storage to your Cloud Volumes ONTAP environment.

• Get advanced data management features with the OnCommand management suite of tools from in depth monitoring and tracking of storage with OnCommand Insight to detailed storage instance control with OnCommand System Manager.

• Replicate data across availability zones to ensure application availability

Cloud Volumes ONTAP is deployed and managed from OnCommand® Cloud Manager giving you a simple point and-click environment to manage the software and underlying cloud infrastructure for your cloud storage solution.

2. How does Cloud Volumes ONTAP operate on AWS compute and storage resources?

Answer: Cloud Volumes ONTAP is a virtual machine version of Data ONTAP that is designed to run on top of Amazon Elastic Cloud Compute (EC2) compute instances. The storage that it uses is the AWS Elastic Block Storage (EBS). EBS storage volumes are assigned to the compute instance to create the equivalent of a Data ONTAP storage node that operates in the cloud. Cloud Volumes ONTAP is an Amazon Machine Instance (AMI) that, via OnCommand Cloud Manager is deployed from the AWS Marketplace. Whether purchased hourly or as a subscription, the software is deployed from the marketplace on your AWS environment.

3. Where does Cloud Volumes ONTAP operate?

Answer: AWS has cloud data centers in many regions worldwide and a customer can choose the cloud data center and availability zone that best fits their requirements. Because Cloud Volumes ONTAP is virtual, you can choose to run in one regional data center and move the environment to another regional data center as needed. If you are looking to replicate data from one data center or availability zone to another, then you can start a Cloud Volumes ONTAP instance in both locations and SnapMirror the data from one location to another. In this case, you are moving the data that is managed within the Cloud Volumes ONTAP environment (SnapMirror compatibility requirements still apply).

4. What is Cloud Volumes ONTAP High Availability?

Answer: Cloud Volumes ONTAP High Availability (HA) is the version of Cloud Volumes ONTAP that can be configured as a two node HA solution in the Cloud. If you require a non-disruptive environment for your application, Cloud Volumes ONTAP HA will allow you to build a two-node solution with failover support in the case that one node fails (whether unplanned or for planned upgrade purposes). Cloud Volumes ONTAP HA requires two Cloud Volumes ONTAP instances and a failover controller in order to operate. As with a single instance of Cloud Volumes ONTAP, OnCommand Cloud Manager is required for setup, configuration and management of the environment.

5. How is Cloud Volumes ONTAP purchased?

Answer: Cloud Volumes ONTAP is available on the AWS Marketplace with multiple procurement options. You can purchase by the hour as pay-as-you-go, or you can purchase a subscription from NetApp. In the pay-as-you-go model, you purchase directly from the AWS Marketplace and pay for the Cloud Volumes ONTAP software, support and AWS resources by the hour (or optional annual purchase). Amazon will bill you for everything. For the subscription model, you are purchasing a six-month or annual subscription from the NetApp sales representative (or reseller) and via Cloud Manager, activating a subscription and support to enable a Cloud Volumes ONTAP – BYOL (Bring your own license) instance from the AWS Marketplace. Amazon will bill you only for the EC2 and EBS resources used/provisioned.

6. What is Cloud Volumes ONTAP for GovCloud and how is it different?

Answer: The AWS GovCloud region is a specific region targeting the US public sector. It has much of the same capabilities as the rest of the AWS regions except for two key items: 1) GovCloud has separate access privileges from the other commercial regions (commercial accounts do not have access to the GovCloud region), 2) there is no AWS marketplace for the GovCloud region. The access rights have no impact on the operation of Cloud Volumes ONTAP for GovCloud, but the lack of a marketplace changes the way Cloud Volumes ONTAP is deployed. Cloud Volumes ONTAP for GovCloud is only offered as a BYOL license from NetApp

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7. Are there multiple Cloud Volumes ONTAP product models to choose?

Answer: Cloud Volumes ONTAP is available in multiple options to best fit your application needs. There are two models available: Cloud Volumes ONTAP for AWS and Cloud Volumes ONTAP for AWS (BYOL). Cloud Volumes ONTAP for AWS is the pay as you go solution purchased on the AWS Marketplace with both hourly and Annual purchasing. The Cloud Volumes ONTAP for AWS (BYOL) represents the bring your own license version sold by NetApp and is offered in both six-month and annual subscriptions. For the pay as you go solution, there now are multiple flavors based on the AWS EC2 instance type chosen.

• Explore: Provides the full power of Data ONTAP in a pre-packaged solution for smaller capacity applications up to 2TB and operates on the M4.XL, M3.XL EC2 instances

• Standard: Provides the full power of Data ONTAP with flexible performance and capacity options for a broader support of applications up to 10 TB and operates on the M4.2XL,M3.2XL, R3.XL EC2 instance types

• Premium: Provides the full power of Data ONTAP for high capacity applications up to 368 TB and operates on the R3.2XL EC2 instance type. The Premium version supports up to 46TB of magnetic disk capacity.

> • High Availability – In an HA configuration Cloud Volumes ONTAP supports up to 360 TB and up to 45TB of magnetic disk capacity.

BYOL: Bring your own License Cloud Volumes ONTAP supports expanded capacity options of up to 360TB and supports all four EC2 instance types (M3.XL, M3.2XL, R3.XL, R3.2XL,M4.XL, M4.2XL). The BYOL option also supports up to 46TB of magnetic disk capacity. In an HA mode BYOL supports up to 360 TB and up to 45TB of magnetic disk capacity.

8. How do I renew my Cloud Volumes ONTAP BYOL subscription?
Answer: You must contact your NetApp sales representative or reseller to purchase any BYOL subscription renewals.

9. What is included with the purchase of Cloud Volumes ONTAP?
Answer: Cloud Volumes ONTAP Explore and Standard are full versions of NetApp ® ONTAP. Included in the purchase are many of the great traditional Data ONTAP features (SnapShot Copies, FlexClone volumes, SnapMirror data replication, data deduplication, etc.); also included are OnCommand Cloud Manager and NetApp's enterprise-quality Software Support Plan. The support offering and entitlement are included in the purchase price of Cloud Volumes ONTAP.

10. Can I protect my data across availability zones with Cloud Volumes ONTAP?

Answer: Yes. Cloud Volumes ONTAP includes SnapMirror replication software which provides a means of moving data between Data ONTAP instances. Data can be moved from one availability zone to another with SnapMirror. You would only need to have another Data ONTAP storage environment in the secondary availability zone. That secondary location could be another Cloud Volumes ONTAP instance or it could be a NetApp Private Storage instance.

11. Can I protect my data between my data center and Cloud Volumes ONTAP?

Answer: Yes. Cloud Volumes ONTAP includes SnapMirror replication software which can be used to move data between Data ONTAP platforms including data center to cloud, cloud to data center or between clouds (or cloud regions). In order to replicate data to the data center, you would only need to have a Data ONTAP based FAS system on your premises to be the target.

12. Does Cloud Volumes ONTAP have to run continuously?

Answer: No, Cloud Volumes ONTAP can run whenever you need it to operate. For the hourly platforms, you will be charged for your instance only when it is operational. When not needed, you can stop it. If you need to maintain your data, you will need to pay for your EBS storage at all times. If you do not, the data will be lost. For the subscription model, you pay for longer term data management, but only pay for the actual AWS resources when Cloud Volumes ONTAP is operating.

13. Why should I choose Cloud Volumes ONTAP versus native EBS to store my data?

Answer: EBS storage can be viewed as similar to DAS storage for standard servers. It is raw storage capacity for Amazon EC2 compute (servers). There are features beyond what DAS offers, but they are limited and without any data replication features. They do offer snapshot copies on EBS storage. AWS snapshots are actual copies of the EBS storage off to S3 storage. These snapshots have impact on the performance of the storage and they also create a complete replica of the storage in S3, which you are charged for. Cloud Volumes ONTAP storage is a managed storage environment that uses the raw EBS storage is its basis. Cloud Volumes ONTAP takes the EBS storage, manages it with the DATA ONTAP storage operating system and provides numerous advanced features on top of the storage. There are many advanced features that Cloud Volumes ONTAP offer:

• Multi-protocol (NFS, CIFS, iSCSI)

• Data Protection (Snapshot copies, SnapMirror, SnapVault)

• Storage efficiency (Data deduplication, compression, thin provisioning) that can reduce the amount of EBS storage you need to purchase

• FlexClone volumes

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• Management (Unified Manager, System Manager, WFA, Insight, etc.)

For the some of these features that may overlap, there are key areas of differentiation that follow NetApp's traditional competitive advantages. For protocols, AWS does not offer a complete NAS solutions (NFSv4.1, pNFS, CIFS). NetApp brings this and is unified such that all the features for block storage are available to NAS. For Snapshots, NetApp Snapshots are zero-copy point in time copies of the data. NetApp Snapshots have no impact on performance and the copies are only of the change data, minimizing the storage consumed.

14. What is OnCommand Cloud Manager?

Answer: OnCommand® Cloud Manager provides management for your hybrid cloud storage environment, including Cloud Volumes ONTAP and clustered Data ONTAP based platforms. Cloud Manager eases the day-to-day management of your Data Fabric, including configuring, provisioning and monitoring each of your active virtual and hardware storage nodes. It is the deployment environment for Cloud Volumes ONTAP that offers a point-and-click installation and automatically selects and assigns cloud resources to each instance. When deploying Cloud Volumes ONTAP, Cloud Manager will use your AWS credentials to select the EC2 virtual machine and the EBS storage necessary to run the instance of your choice.

15. Is OnCommand Cloud Manager required for Cloud Volumes ONTAP?

Answer: Yes. Cloud Volumes ONTAP can only be deployed via Cloud Manager. Cloud Manager handles all the back-end activities to make sure that your AWS compute and storage resources are properly assigned to the Cloud Volumes ONTAP instance. Trying to directly deploy Cloud Volumes ONTAP via any other method will result in failure to start.

16. Where does OnCommand Cloud Manager run?

 Answer: Cloud Manager can run in the AWS cloud or on premises at your data center. It is available either as an AMI from the AWS Marketplace or it can be downloaded from NetApp's support website and run on your premises (or where you choose). Cloud Manager is a central management point for your hybrid cloud environment and can manage your clustered ONTAP based environments independent of location. For AWS based deployments, you can start Cloud Manager directly from the AWS marketplace.

17. What is the difference between the Cloud Manager version on the AWS marketplace and the version for on premises installation?

Answer: There are two key differences between Cloud Volumes ONTAP versions and they revolve around how you get the software and how it is installed. The marketplace version is an AMI that gets deployed directly from the AWS marketplace into an EC2 cloud instance. The version that runs on your premises is downloaded off the support.netapp.com website. You will need to sign in on the support site with their support ID and then download the software.

18. Is there a charge for Cloud Manager?

Answer: No. Cloud Manager is available to a NetApp customer at no charge. If you deploy Cloud Manager from the AWS marketplace, you will be charged by Amazon for the cost of the EC2 instance that Cloud Volumes ONTAP runs

19. Can I use Cloud Manager with any of my NetApp Systems?

Answer: Yes. Cloud Manager can be used on any clustered Data ONTAP based platform. It provides configuration, management and monitoring for these environments but it is required for Cloud Volumes ONTAP deployment and includes extended features that are only relevant to Cloud Volumes ONTAP (such as installation, cloud resource acquisition, cloud network setup, etc.). Cloud Manager also manages the SnapMirror relationship between Cloud Volumes ONTAP and on premises FAS solutions.