Manage ONTAP clusters

Cloud Manager

NetApp
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Discovering ONTAP clusters

Cloud Manager can discover the ONTAP clusters in your on-premises environment, in a NetApp Private Storage configuration, and in the IBM Cloud. Discovering an ONTAP cluster enables you to provision storage, view whether shelf and disk firmware is recommended, replicate data, back up data, and tier cold data from an on-prem cluster to the cloud.

What you'll need

- A Connector installed in a cloud provider or on your premises.

  If you want to tier cold data to the cloud, then you should review requirements for the Connector based on where you plan to tier cold data.

  - Learn about Connectors
  - Switching between Connectors
  - Learn about Cloud Tiering

- The cluster management IP address and the password for the admin user account to add the cluster to Cloud Manager.

  Cloud Manager discovers ONTAP clusters using HTTPS. If you use custom firewall policies, they must meet the following requirements:

  - The Connector host must allow outbound HTTPS access through port 443.

    If the Connector is in the cloud, all outbound communication is allowed by the predefined security group.

  - The ONTAP cluster must allow inbound HTTPS access through port 443.

    The default "mgmt" firewall policy allows inbound HTTPS access from all IP addresses. If you modified this default policy, or if you created your own firewall policy, you must associate the HTTPS protocol with that policy and enable access from the Connector host.

- A valid set of NetApp Support Site credentials for accessing the Active IQ page.

Viewing clusters from the Active IQ page

You can use the Active IQ service in Cloud Manager to discover, view, and manage all your on-prem clusters in a single location.

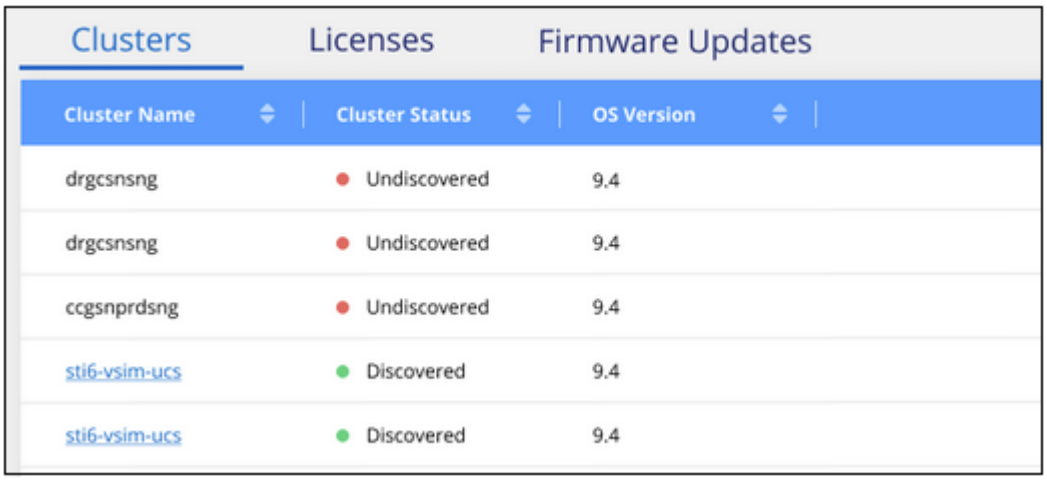
Note: The Active IQ page shows systems with a valid support contract. If contracts expire, a grace period of 90 days is given in which systems continue to be visible. Thereafter, systems are not searchable or visible on the Active IQ page. See how to renew your support contract from Active IQ Digital Advisor. However, if you have already discovered on-prem clusters, you can continue to manage in their working environment using the Cloud Manager UI.

Steps

1. Click the **Active IQ** tab, enter your NetApp Support Site user name and password, and click **Save**.

   The clusters that have a valid support contract are displayed along with a status of whether they have been

discovered in Cloud Manager. Discovered clusters will also appear in their working environment.



Discovering clusters from the Canvas page

You can discover your ONTAP clusters and add them to a working environment from the Canvas page.

Steps

1. On the Canvas page, click **Add Working Environment** and select **On-Premises ONTAP**.
2. If you're prompted, create a Connector.

   Refer to the links above for more details.

3. On the *ONTAP Cluster Details* page, enter the cluster management IP address, the password for the admin user account, and the location of the cluster.

4. On the Details page, enter a name and description for the working environment, and then click **Go**.

Result

Cloud Manager discovers the cluster and adds it to the working environment. You can now create volumes, replicate data to and from the cluster, set up data tiering to the cloud, back up volumes to the cloud, and launch System Manager to perform advanced tasks.

Monitoring ONTAP clusters

The Active IQ page in Cloud Manager can show you any undiscovered ONTAP clusters in your on-premises environment, whether any clusters require new firmware to be installed, and if they are using all the licenses that you have paid for. This information is provided to Cloud Manager from the Active IQ Digital Advisor.

Checking for on-premises clusters that have not been added to Cloud Manager

The Active IQ page shows a list of all the on-prem clusters you are able to manage based on your NetApp Support Site (NSS) credentials. It also lists those clusters that have been discovered within Cloud Manager, and those that have not been discovered.

Steps

1. Click the **Active IQ** tab, enter your NetApp Support Site user name and password, and click **Save**.

   The clusters that have a valid support contract are displayed along with a status of whether they have been discovered in Cloud Manager.

See Discovering clusters.

Checking for new disk and shelf firmware

You can see whether any of your discovered ONTAP clusters need to have their shelf or disk firmware updated.

Steps

1. From the Active IQ page, click the **Firmware Updates** tab.
2. See the following instructions to update your storage system firmware.

Viewing unused Cloud Volumes ONTAP licenses

You can see whether any of your Cloud Volumes ONTAP clusters have licenses that you are not using.

Steps

1. From the Active IQ page, click the **Licenses** tab.

Managing storage for ONTAP clusters

After you discover your ONTAP cluster from Cloud Manager, you can open the working environment to provision and manage storage.

Creating volumes for ONTAP clusters

Cloud Manager enables you to provision NFS, CIFS, and iSCSI volumes on ONTAP clusters.

Before you begin

The data protocols must be set up on the cluster using System Manager or the CLI.

About this task

You can create volumes on existing aggregates. You can't create new aggregates from Cloud Manager.

Steps

1. On the Canvas page, double-click the name of the ONTAP cluster on which you want to provision volumes.
2. Click **Add New Volume**.
3. On the Create New Volume page, enter details for the volume, and then click **Create**.

   Some of the fields in this page are self-explanatory. The following table describes fields for which you might need guidance:

Field	Description
Size	The maximum size that you can enter largely depends on whether you enable thin provisioning, which enables you to create a volume that is bigger than the physical storage currently available to it.
Snapshot Policy	A Snapshot copy policy specifies the frequency and number of automatically created NetApp Snapshot copies. A NetApp Snapshot copy is a point-in-time file system image that has no performance impact and requires minimal storage. You can choose the default policy or none. You might choose none for transient data: for example, tempdb for Microsoft SQL Server.
Access control (for NFS only)	An export policy defines the clients in the subnet that can access the volume. By default, Cloud Manager enters a value that provides access to all instances in the subnet.
Permissions and Users / Groups (for CIFS only)	These fields enable you to control the level of access to a share for users and groups (also called access control lists or ACLs). You can specify local or domain Windows users or groups, or UNIX users or groups. If you specify a domain Windows user name, you must include the user's domain using the format domain\username.
Initiator group and IQN (for iSCSI only)	iSCSI storage targets are called LUNs (logical units) and are presented to hosts as standard block devices. Initiator groups are tables of iSCSI host node names and control which initiators have access to which LUNs. iSCSI targets connect to the network through standard Ethernet network adapters (NICs), TCP offload engine (TOE) cards with software initiators, converged network adapters (CNAs) or dedicated host bust adapters (HBAs) and are identified by iSCSI qualified names (IQNs). When you create an iSCSI volume, Cloud Manager automatically creates a LUN for you. We've made it simple by creating just one LUN per volume, so there's no management involved. After you create the volume, select it, click Target IQN, and then use the IQN to connect to the LUN from your hosts.
Usage Profile	Usage profiles define the NetApp storage efficiency features that are enabled for a volume.

Replicating data

You can replicate data between Cloud Volumes ONTAP systems and ONTAP clusters by choosing a one-time data replication, which can help you move data to and from the cloud, or a recurring schedule, which can help with disaster recovery or long-term retention.

Click here for more details.

Backing up data

You can back up data from your on-premises ONTAP system to low-cost object storage in the cloud by using the Cloud Manager Cloud Backup service. This service provides backup and restore capabilities for protection and long-term archive of your cloud data.

Click here for more details.

Tiering data to the cloud

Extend your data center to the cloud by automatically tiering inactive data from ONTAP clusters to object storage.

Click here for more details.