Back up and restore Virtual Machines data

Cloud Backup

NetApp
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Protect your virtual machines data

You can protect data on your virtual machines by integrating the SnapCenter Plug-in for VMware vSphere with Cloud Manager. You can back up datastores to the cloud and restore virtual machines back to the on-premises SnapCenter Plug-in for VMware vSphere with ease.

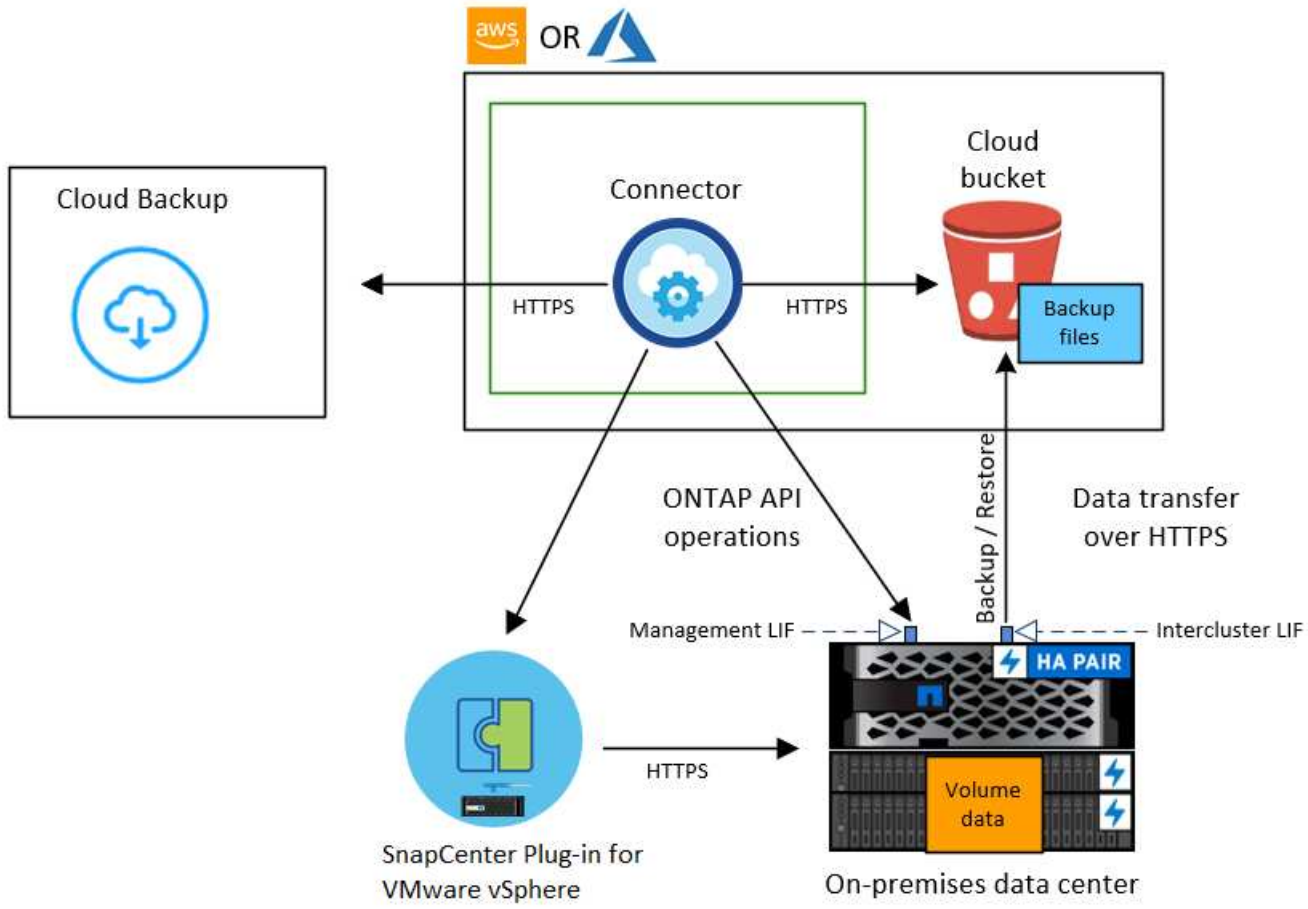
You can back up datastores to Amazon Web Services S3 or Microsoft Azure Blob.

Requirements

Read the following requirements to make sure that you have a supported configuration before you start backing up datastores and virtual machines to cloud services.

- SnapCenter Plug-in for VMware vSphere 4.6P1 or later
- ONTAP 9.8 or later
- Cloud Manager 3.9 or later
- At least one backup should have been taken in SnapCenter Plug-in for VMware vSphere 4.6P1.
- At least one daily, weekly, or monthly policy in SnapCenter Plug-in for VMware vSphere with no label or same label as that of the Cloud Backup for Virtual Machines policy in Cloud Manager.
- For a pre-canned policy, the schedule tier should be the same for the datastore in SnapCenter Plug-in for VMware vSphere and in the cloud.
- Ensure that there are no FlexGroup volumes in the datastore because backing up and restoring FlexGroup volumes are not supported.
- Ensure that none of the volumes are encrypted because restoring encrypted volumes are not supported.
- Disable "**_recent**" on the required resource groups. If you have "**_recent**" enabled for the resource group, then the backups of those resource groups cannot be used for data protection to cloud and subsequently cannot be used for the restore operation.
- Ensure that the destination datastore where the virtual machine will be restored has enough space to accommodate a copy of all virtual machine files such as VMDK, VMX, VMSD, and so on.
- Ensure that the destination datastore does not have stale virtual machine files in the format of restore_xxx_xxxxxx_filename from the previous restore operation failures. You should delete the stale files before triggering a restore operation.

The following image shows each component and the connections that you need to prepare between them:



Protection Policies

You should use the one of the policies defined in the Cloud Backup for virtual machines to back up datastores to cloud.

Custom polices are not supported.

You can view the default policies by clicking **Backup & Restore** > **Virtual Machines** > **Policies** in Cloud Manager.

Policy Name	Label	Retention Value
1 Year Daily LTR	Daily	366
5 Years Daily LTR	Daily	1830
7 Year Weekly LTR	Weekly	370
10 Year Monthly LTR	Monthly	120

Back up datastores to the cloud

You can back up datastores to the cloud by integrating the SnapCenter Plug-in for VMware vSphere with Cloud Manager. This will help the VM administrators to easily and quickly back up and archive data for storage efficiency and accelerate cloud transition.

Ensure that you have met all the requirements before backing up datastores to the cloud.

Register SnapCenter Plug-in for VMware vSphere

You should register the SnapCenter Plug-in for VMware vSphere in Cloud Manager for the datastores and virtual machines to be displayed in Cloud Manager. Only a user with administrative access can register the SnapCenter Plug-in for VMware vSphere.

You can register multiple SnapCenter Plug-in for VMware vSphere. However, once registered, you cannot remove the SnapCenter Plug-in for VMware vSphere.

Steps

1. In Cloud Manager UI, click **Backup & Restore** > **Virtual Machines**.
2. From the **Settings** drop-down, click **SnapCenter Plug-in for VMware vSphere**.
3. Click **Register SnapCenter Plug-in for VMware vSphere**.
4. Specify the following details:
   a. In the SnapCenter Plug-in for VMware vSphere field, specify the FQDN or IP address of the SnapCenter Plug-in for VMware vSphere.
   b. In the Port field, specify the port number on which the SnapCenter Plug-in for VMware vSphere is running.

      You should ensure that the port is open for communication to happen between SnapCenter Plug-in for VMware vSphere and Cloud Backup for Applications.

   c. In the Username and Password field, specify the credentials of the user with the administrator role.
5. Click **Register**.

After you finish

Click **Backup & Restore > Virtual Machines** to view all the datastores and virtual machines that are eligible for protection using the registered SnapCenter Plug-in for VMware vSphere.

Back up datastores

You can back up one or more datastores simultaneously to the cloud using a single policy. Only the default policies can be assigned to the datastore.

Steps

1. In Cloud Manager UI, click **Backup & Restore** > **Virtual Machines**.
2. Click ••• corresponding to the datastore that you want to back up and click **Activate Backup**.
3. Add the working environment.

Configure the ONTAP clusters that you want Cloud Manager to discover to back up your datastores. After adding the working environment for one of the datastores, it can be reused for all the other datastores residing on the same ONTAP cluster.

a. Click **Add Working Environment** corresponding to the SVM.
b. In the Add Working Environment wizard:
    i. Specify the IP address of the ONTAP cluster.
    ii. Specify the credentials of the ONTAP cluster user.
c. Click **Add Working Environment**.

4. Select and configure the cloud provider.

Configure Amazon Web Services

a. Specify the AWS account.
b. In the AWS Access Key field, specify the key for data encryption.
c. In the AWS Secret Key field, specify the password for data encryption.
d. Select the region where you want to create the backups.
e. Specify the IP addresses of the ONTAP clusters that were added as the working environments.

Configure Microsoft Azure

a. Specify the Azure subscription ID.
b. Select the region where you want to create the backups.
c. Create a new resource group or use an existing resource group.
d. Specify the IP addresses of the ONTAP clusters that were added as the working environments.

5. In the Assign Policy page, select the policy and click **Next**.
6. Review the details and click **Activate Backup**.

Manage protection of virtual machines

You can view policies, datastores, and virtual machines before you back up and restore data. Depending upon the change in database, policies, or resource groups, you can refresh the updates from the Cloud Manager UI.

View policies

You can view all the default pre-canned policies. For each of these policies, when you view the details, all the associated Cloud Backup for Virtual Machines policies and all the associated virtual machines are listed.

1. Click **Backup & Restore > Virtual Machines**.
2. From the **Settings** drop-down, click **Policies**.
3. Click **View Details** corresponding to policy whose details you want to view.

The associated Cloud Backup for Virtual Machines policies and all the virtual machines are listed.

View the datastores and virtual machines

The datastores and virtual machines that are protected using the registered SnapCenter Plug-in for VMware vSphere are displayed.

About this task

- Only NFS datastores are displayed.
- Only datastores for which at least one successful backup has been taken in SnapCenter Plug-in for VMware vSphere are displayed.

Steps

1. In Cloud Manager UI, click **Backup & Restore** > **Virtual Machines** > **Settings** > **SnapCenter Plug-in for VMware vSphere**.
2. Click the SnapCenter Plug-in for VMware vSphere for which you want to see the datastores and virtual machines.

Edit the SnapCenter Plug-in for VMware vSphere Instance

You can edit the details of the SnapCenter Plug-in for VMware vSphere in Cloud Manager

Steps

1. In Cloud Manager UI, click **Backup & Restore** > **Virtual Machines** > **Settings** > **SnapCenter Plug-in for VMware vSphere**.
2. Click and select **Edit**
3. Modify the details as required
4. Click **Save**.

Refresh Protection Status

When new volumes are added to the database, or if there is a change to the policy or resource group, you should refresh the protection.

1. Click **Backup & Restore > Virtual Machines**.
2. From the **Settings** drop-down, click **SnapCenter Plug-in for VMware vSphere**.
3. Click ••• corresponding to the SnapCenter Plug-in for VMware vSphere hosting the virtual machine and click **Refresh**.

   The new changes are discovered.

4. Click ••• corresponding to the datastore and click **Refresh Protection** to enable cloud protection for the changes.

Monitor Jobs

Jobs are created for all the Cloud Backup operations. You can monitor all the jobs and all the sub tasks that are performed as part of each task.

1. Click **Backup & Restore > Job Monitoring**.

   When you initiate an operation, a window appears stating that the job is initiated. You can click the link to

monitor the job.

2. Click the primary task to view the sub tasks and status of each of these sub tasks.

Restore virtual machines from the cloud

You can restore virtual machines from the cloud back to the on-premises vCenter. The backup will be restored to the exact same location from where the backup was taken. You cannot restore the backup to any other alternate location. You can restore virtual machines from the datastore or from the VMs view.

You cannot restore virtual machines that are spanned across datastores.

What you'll need

Ensure that you have met all the requirements before restoring virtual machines from the cloud.

Steps

1. In Cloud Manager, click **Backup & Restore** > **Virtual Machines** > **SnapCenter Plug-in for VMware vSphere** and select the SnapCenter Plug-in for VMware vSphere whose virtual machine you want to restore.

   If the source virtual machine is moved to another location (vMotion), and if the user triggers a restore of that virtual machine from Cloud Manager, then the virtual machine will get restored to the original source location from where the backup was taken.

2. To restore from Datastore:
   a. Click ••• corresponding to the datastore that you want to restore and click **View Details**.
   b. Click **Restore** corresponding to the backup you want to restore.
   c. Select the virtual machine that you want to restore from the backup and click **Next**.
   d. Review the details and click **Restore**.
3. To restore from Virtual Machines:
   a. Click ••• corresponding to the virtual machine that you want to restore and click **Restore**.
   b. Select the backup through which you want to restore the virtual machine and click **Next**.
   c. Review the details and click **Restore**.

The VM is restored to the same location from where the backup was taken.