



Manage virtual machines

ONTAP tools for VMware vSphere 105

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Table of Contents

- Manage virtual machines 1
 - Virtual machine migration and cloning considerations for ONTAP tools 1
 - Migrate protected virtual machines 1
 - Clone protected virtual machines 1
 - Virtual machine snapshots 2
 - Migrate virtual machines to vVols datastores in ONTAP tools 2
 - Clean up VASA configurations in ONTAP tools 3
- Attach or detach a data disk from a VM in ONTAP tools 3
 - Attach a data disk to a virtual machine 3
 - Detach a data disk from the virtual machine 3

Manage virtual machines

Virtual machine migration and cloning considerations for ONTAP tools

ONTAP tools for VMware vSphere support all major types of virtual machine migration, including compute-only (vMotion), storage-only (Storage vMotion), and combined compute and storage migration across all datastores. This topic outlines key considerations and best practices to ensure successful migration and cloning of virtual machines, regardless of the underlying datastore type.

Migrate protected virtual machines

You can migrate protected virtual machines to:

- The same datastore on a different ESXi host
- A different compatible datastore on the same ESXi host
- A different compatible datastore on a different ESXi host

If you migrate the virtual machine to a different FlexVol volume, the system updates the metadata file for that volume with the virtual machine information. If a virtual machine is migrated to a different ESXi host but the same storage, the underlying FlexVol volume metadata file will not be modified.

For information on migrating virtual machines, refer to the Broadcom documentation: [vSphere Virtual Machines Migration](#)

Clone protected virtual machines

You can clone protected virtual machines to the following:

- The same container of the same FlexVol volume using a replication group

The same FlexVol volume's metadata file is updated with the cloned virtual machine details.

- The same container of a different FlexVol volume using a replication group

In the FlexVol volume where the cloned virtual machine is placed, the metadata file gets updated with the cloned virtual machine details.

- A different container or vVols datastore

In the FlexVol volume where the cloned virtual machine is placed, the metadata file gets updated with the virtual machine details.

VMware presently does not support virtual machines cloned to a VM template.

A clone of a clone of a protected virtual machine is supported.

Refer to the Broadcom documentation: [Creating a Virtual Machine for Cloning](#) for more details.

Virtual machine snapshots

ONTAP tools supports virtual machine snapshots through standard VMware workflows. Snapshots are short-term rollback points intended for use cases such as testing and patch preparation. They are not a substitute for backup or replication-based data protection. Running a virtual machine on a snapshot for extended periods can cause instability and data loss.

You can take crash-consistent snapshots (snapshots without memory state, which can be used to restart the virtual machine to a consistent state) on all supported datastore types. Quiesced snapshots, which use VMware Tools to flush in-memory data to disk before capturing, are also supported. For an overview of snapshot types and behavior, refer to [Overview of virtual machine snapshots in vSphere](#).



Memory snapshots capture the running memory state and temporarily stun the virtual machine. They are not supported in ONTAP tools workflows. If a virtual machine has a memory snapshot, you must delete it before the virtual machine can be included in a consistency group or host cluster relationship managed by ONTAP tools.

On ASA r2 storage systems, virtual machine snapshot behavior differs from other storage types. Snapshots are read-only. When you power on the virtual machine, VASA Provider creates a LUN from the read-only snapshot and enables IOPS. When you power off the virtual machine, VASA Provider deletes the LUN and disables IOPS.

For information on managing virtual machine snapshots, refer to the Broadcom documentation [Manage Virtual Machines With Snapshots](#).

Migrate virtual machines to vVols datastores in ONTAP tools

You can migrate virtual machines from NFS and VMFS datastores to Virtual Volumes (vVols) datastores to take advantage of policy-based VM management and other vVols capabilities. vVols datastores enable you to meet increased workload requirements.

Before you begin

Ensure that VASA Provider is not running on any of the virtual machines that you plan to migrate. If you migrate a virtual machine that is running VASA Provider to a vVols datastore, you cannot perform any management operations, including powering on the virtual machines that are on vVols datastores.

About this task

When you migrate from a NFS and VMFS datastore to a vVols datastore, the vCenter Server uses vStorage APIs for Array Integration (VAAI) offloads when moving data from VMFS datastores, but not from an NFS VMDK file. VAAI offloads normally reduce the load on the host.

Steps

1. Right-click the virtual machine that you want to migrate and select **Migrate**.
2. Select **Change storage only** and then select **Next**.
3. Select a virtual disk format, a VM Storage Policy, and a vVol datastore that matches the features of the datastore that you're migrating.
4. Review the settings and select **Finish**.

Clean up VASA configurations in ONTAP tools

To complete the VASA cleanup process, follow these steps.



It is recommended to remove any vVols datastores before starting the VASA cleanup.

Steps

1. Unregister the plug-in by going into https://OTV_IP:8143/Register.html
2. Verify that the plug-in is no longer available on the vCenter Server.
3. Shut down ONTAP tools for VMware vSphere VM.
4. Delete ONTAP tools for VMware vSphere VM.

Attach or detach a data disk from a VM in ONTAP tools

Follow these steps to attach or detach data disks from virtual machines in vSphere and manage their storage resources.

Attach a data disk to a virtual machine

Attach a data disk to a virtual machine to add more storage.

Steps

1. Log in to the vSphere client.
2. Right-click on a virtual machine in the inventory and select **Edit Settings**.
3. On the **Virtual Hardware** tab, select **Existing hard disk**.
4. Select the virtual machine where the disk exists.
5. Select the disk you want to attach and select the **OK** button.

Result

The hard disk appears in the Virtual Hardware devices list.

Detach a data disk from the virtual machine

Detach a data disk from a virtual machine when you don't need it anymore. The disk is not deleted; it stays on the ONTAP storage system.

Steps

1. Log in to the vSphere client.
2. Right-click on a virtual machine in the inventory and select **Edit Settings**.
3. Move your pointer over the disk and select **Remove**.



The disk is removed from the virtual machine. If other virtual machines share the disk, the disk files aren't deleted.

Related information

[Add a New Hard Disk to a Virtual Machine](#)

[Add an Existing Hard Disk to a Virtual Machine](#)

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