



Upgrade ONTAP tools for VMware vSphere

ONTAP tools for VMware vSphere 10

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Table of Contents

Upgrade ONTAP tools for VMware vSphere	1
Upgrade from ONTAP tools for VMware vSphere 10.x to 10.4	1
Upgrade error codes	4

Upgrade ONTAP tools for VMware vSphere

Upgrade from ONTAP tools for VMware vSphere 10.x to 10.4

You can upgrade from ONTAP tools for VMware vSphere 10.2 or 10.3 to 10.4. However, direct upgrade from ONTAP tools 10.0 or 10.1 to 10.4 is not supported.

NOTE:

- In ASA r2 systems, you should upgrade to ONTAP tools for VMware vSphere 10.4 with ONTAP 9.16.1 before adding more storage availability zones (SAZs).
- If the upgrade from ONTAP tools for VMware vSphere 10.2 or 10.3 to 10.4 release fails, rollback is not supported. To recover the setup, use RPO for ONTAP tools for VMware vSphere 10.2 and near-zero RPO or snapshot recovery for ONTAP tools for VMware vSphere 10.3.

Before you begin

For a non-HA upgrade, power off the ONTAP tools VM, and for an HA upgrade, power off the ONTAP tools management node before making the following changes to the virtual machine (VM) settings.

If you're upgrading from ONTAP tools for VMware vSphere 10.2 or 10.3, you need to complete the following steps before proceeding with the upgrade task: * Add an additional 100 GB hard disk to each node, because the service data is stored locally on the VM. * Change the CPU and memory for the powered-off VM according to the flavor of your deployment. Enable the hot plugin for CPU and RAM.

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Deployment Type	CPU(Core) per node	Memory(GB) per node	Disk Space(GB) per node	Total CPU(Core)	Memory(GB)	Total Disk Space(GB)
Non-HA Small	9	18	350	9	18	350
Non-HA Medium	13	26	350	13	26	350
HA Small	9	18	350	27	54	1050
HA Medium	13	26	350	39	78	1050
HA Large	17	34	350	51	102	1050

- Power ON the VM after the changes are done and wait for the services to come to a running state.
- In case of HA deployment, make the resource changes, enable the hot plugin for CPU and RAM, and add 100 GB hard disks for the second and the third node as well. There is no need to reboot these nodes.
- If the appliance was deployed as a local path (easy deployment) with ONTAP tools 10.2, you need to take a quiesce snapshot before upgrading.

If you're upgrading from ONTAP tools for VMware vSphere 10.0 to 10.1, you need to complete the following steps before proceeding with the upgrade task: **Enable Diagnostics**

1. From the vCenter Server, open a console to ONTAP tools.
2. Log in as the maintenance user.

3. Enter **4** to select **Support and Diagnostics**.
4. Enter **2** to select **Enable remote diagnostic access**.
5. Enter **y** to set the password of your choice.
6. Log in to the VM IP address from the terminal/putty with the user as 'diag' and the password that was set in the previous step.

Take a backup of MongoDB

Run the following commands to take a backup of MongoDB:

- `kn exec -it ntv-mongodb-0 sh` - `kn` is an alias of `kubectl -n ntv-system`.
- Run `env | grep MONGODB_ROOT_PASSWORD` command inside the pod.
- Run `exit` command to come out of the pod.
- Run `kn exec ntv-mongodb-0 --mongodump -u root -p MONGODB_ROOT_PASSWORD --archive=/tmp/mongodb-backup.gz --gzip` command to replace the `MONGO_ROOT_PASSWORD` set from the above command.
- Run `kn cp ntv-mongodb-0:/tmp/mongodb-backup.gz ./mongodb-backup.gz` command to copy the mongodb backup created using the above command from the pod to the host.

Take the quiesce snapshot of all the volumes

- Run '`kn get pvc`' command and save the command output.
- Take snapshots of all the volumes one by one using one of the following methods:
 - From CLI, run the command `volume snapshot create -vserver <vserver_name> -volume <volume_name> -snapshot <snapshot_name>`
 - From the ONTAP System Manager user interface, search the volume by its name in the search bar, then open that volume by selecting on the name. Go to snapshot and add the snapshot of that volume.

Take the snapshot of ONTAP tools for VMware vSphere VMs in vCenter (3VMs in case of HA Deployment, 1 VM in case of non-HA deployment)

- In the vSphere client user interface, select the VM.
- Go to the snapshots tab and select the **Take Snapshot** button. Take a quiesced snapshot of the VM. Refer to [Take a Snapshot of a Virtual Machine](#) for details.

Before performing the upgrade, delete the completed pods from the log bundle with the prefix "generate-support-bundle-job." If support bundle generation is in progress, wait for it to complete and then delete the pod.

For any type of upgrade, you need to add an additional 100 GB hard Disk Drive (HDD). To add an HDD, perform the following task.

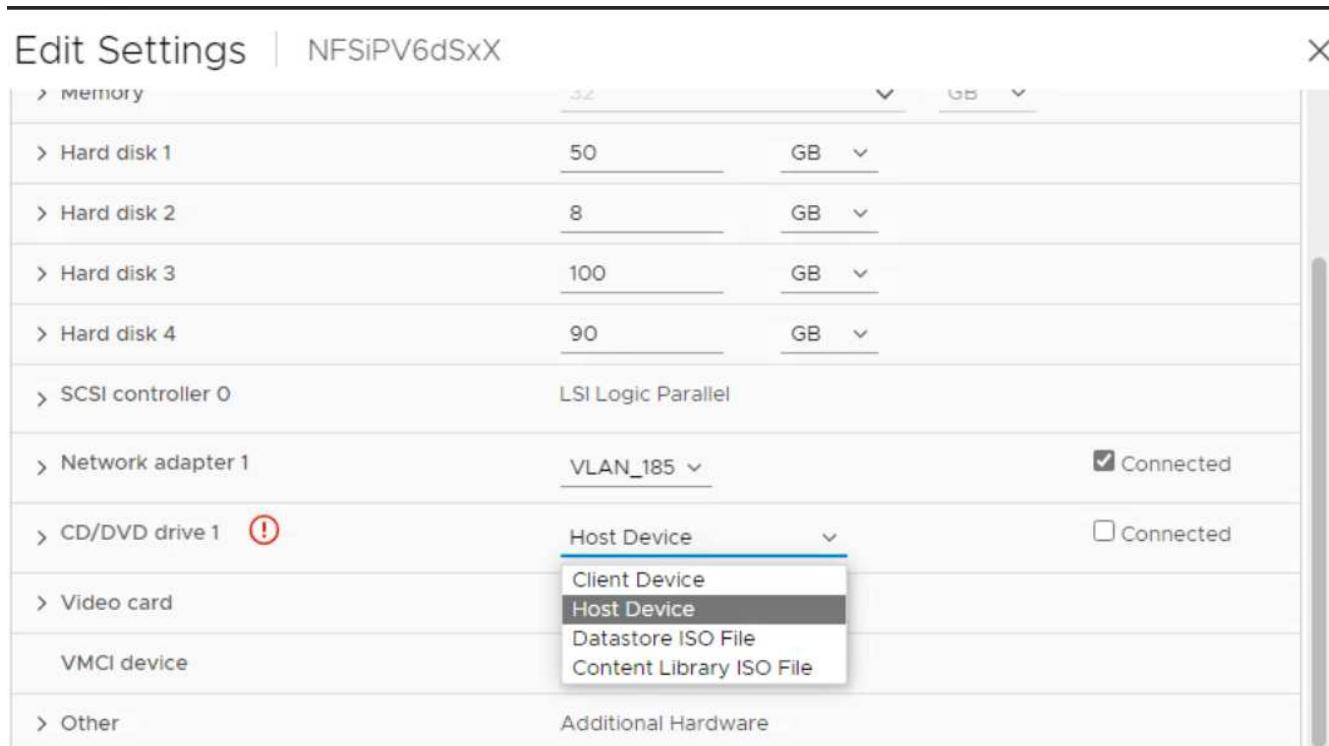
1. Select the VM in single node configuration or all three VMs in HA configuration.
2. Right-click on the VM(s) and select **Add New Device > Hard Disk**
3. Add a 100 GB HDD in the **New Hard disk** field.
4. Select **Apply**

After adding the hard disk, update the VM's resources for the respective configurations and restart the primary VM.

A new HDD will be created. Dynamic storage provisioner uses this HDD to generate or replicate the volumes.

Steps

1. Upload ONTAP tools for VMware vSphere upgrade ISO to content library.
2. In the primary VM page, select **Actions > Edit Settings**. To identify the primary VM name:
 - a. Enable diag shell on any node
 - b. Run the following command: `grep sourceHost /opt/netapp/meta/ansible_vars.yaml`
3. Select the content library ISO file in the edit settings window under the **CD/DVD drive** field.
4. Select the ISO file and select **OK**. Choose the connected checkbox across the **CD/DVD drive** field.



5. From the vCenter Server, open a console to ONTAP tools.
6. Log in as the maintenance user.
7. Enter **2** to select the System Configuration menu.
8. Enter **7** to select the upgrade option.
9. When you upgrade, the following actions are performed automatically:
 - a. Certificate upgrade
 - b. Remote plug-in upgrade

After upgrading to ONTAP tools for VMware vSphere 10.4, you can:

- Disable the services from the manager user interface
- Move from a non-HA setup to an HA setup
- Scale up a non-HA small configuration a non-HA medium or to a HA medium or large configuration.
- In case of a non-HA upgrade, reboot the ONTAP tools VM to reflect the changes. In case of an HA upgrade, reboot the ONTAP tools management node to reflect the changes on the node.

What's next

After you upgrade from previous releases of ONTAP tools for VMware vSphere to 10.4, rescan the SRA adapters to verify that the details are updated on the VMware Live Site Recovery Storage Replication Adapters page.

After you upgrade successfully, delete the Trident volumes from ONTAP manually using the following procedure:



These steps are not required if the ONTAP tools for VMware vSphere 10.1 or 10.2 was in non-HA small or medium (local path) configurations.

1. From the vCenter Server, open a console to ONTAP tools.
2. Log in as the maintenance user.
3. Enter **4** to select the **Support and Diagnostics** menu.
4. Enter **1** to select the **Access diagnostics shell** option.
5. Run the following command

```
sudo python3 /home/maint/scripts/ontap_cleanup.py
```

6. Enter the ONTAP username and password

This deletes all the Trident volumes in ONTAP used in ONTAP tools for VMware vSphere 10.1/10.2.

Related information

[Migrate from ONTAP tools for VMware vSphere 9.xx to 10.4](#)

Upgrade error codes

You might encounter error codes during ONTAP tools for VMware vSphere upgrade operation. The error codes are five digits long, where the first two digits represent the script that encountered the issue, and the last three digits represent the specific workflow within that script.

All error logs are recorded in the `ansible-perl-errors.log` file to facilitate easy tracking and resolution of issues. This log file contains the error code and the failed Ansible task.



The error codes provided on this page are for reference only. Contact the support team if error persists or if there's no resolution mentioned.

The following table lists the error codes and the corresponding file names.

Error code	Script name
00	firstboot-network-config.pl, mode deploy
01	firstboot-network-config.pl, mode upgrade
02	firstboot-inputs-validation.pl
03	firstboot-deploy-otv-ng.pl, deploy, HA

04	firstboot-deploy-otv-ng.pl, deploy, non-HA
05	firstboot-deploy-otv-ng.pl, reboot
06	firstboot-deploy-otv-ng.pl, upgrade, HA
07	firstboot-deploy-otv-ng.pl, upgrade, non-HA
08	firstboot-otv-recovery.pl
09	post-deploy-upgrade.pl

The last three digits of the error code indicate the specific workflow error within the script:

Upgrade error code	Workflow	Resolution
052	The ISO might be the same as the current version or two releases above the current version.	Use an ISO version compatible to upgrade from your current version.
068	Debian packages rollback has failed	Use zero-RPO or snapshot based recovery and retry upgrade.
069	Failed restoring files	Use zero-RPO or snapshot based recovery and retry upgrade.
070	Failed deleting backup	-
071	Kubernetes cluster was not healthy	-
074	Mount ISO has failed	Check the /var/log/upgrade-run.log and retry upgrade.
075	Upgrade pre-checks has failed	Retry the upgrade.
076	Registry upgrade has failed	Use zero-RPO or snapshot based recovery and retry upgrade.
077	Registry rollback has failed	Use zero-RPO or snapshot based recovery and retry upgrade.
078	Operator upgrade has failed	Use zero-RPO or snapshot based recovery and retry upgrade.
079	Operator rollback has failed	Use zero-RPO or snapshot based recovery and retry upgrade.
080	Services upgrade has failed	Use zero-RPO or snapshot based recovery and retry upgrade.
081	Services rollback has failed	Use zero-RPO or snapshot based recovery and retry upgrade.
082	Deleting old images from container failed	Use zero-RPO or snapshot based recovery and retry upgrade.
083	Deleting backup has failed	Use zero-RPO or snapshot based recovery and retry upgrade.

Upgrade error code	Workflow	Resolution
084	Changing JobManager back to Production failed	<p>Follow the below steps to recover/complete the upgrade.</p> <ol style="list-style-type: none"> 1. Enable Diagnostic Shell 2. Run the command: <code>sudo perl /home/maint/scripts/post-deploy-upgrade.pl --postupgrade</code> 3. Check the logs at <code>/var/log/post-deploy-upgrade.log</code>
087	Post upgrade steps failed.	<p>Perform the following steps to recover/complete the upgrade.</p> <ol style="list-style-type: none"> 1. Enable Diagnostic Shell 2. Run <code>sudo perl /home/maint/scripts/post-deploy-upgrade.pl --postupgrade</code> command 3. Check the logs at <code>/var/log/post-deploy-upgrade.log</code>
088	Configuring log rotate for journald has failed	Check the VM network settings compatible with the host on which VM is hosted. You can try to migrate the VM to another host and restart.
089	Changing ownership of summary log rotate config file has failed	Retry the upgrade.
095	OS upgrade failed	No recovery for OS upgrade. ONTAP tools services are upgraded and new pods will be running.
096	Install dynamic storage provisioner	Check the upgrade logs and retry upgrade.
097	Uninstalling services for upgrade has failed	Use zero RPO or snapshot based recovery and retry upgrade.
098	copying dockercred secret from ntv-system to dynamic storage provisioner namespace has failed	Check the upgrade logs and retry upgrade.
099	Failed to validate the new HDD addition	Add the new HDD to all the nodes in case of HA and to one node in case of non-HA deployment.
108	Seeding script failed	-

Upgrade error code	Workflow	Resolution
109	backing up persistent volume data has failed	Check the upgrade logs and retry upgrade.
110	restoring persistent volume data has failed	Use zero-RPO or snapshot based recovery and retry upgrade.
111	Updating etcd timeout parameters for RKE2 has failed	Check the upgrade logs and retry upgrade.
112	Uninstall dynamic storage provisioner has failed	-
113	Refresh resources on secondary nodes has failed	Check the upgrade logs and retry upgrade.
104	Restarting of secondary node has failed	Restart the nodes manually one by one
100	kernel rollback has failed	-
051	dynamic storage provisioner upgrade has failed	Check upgrade logs and retry upgrade.
056	deleting migration backup has failed	NA



Beginning with ONTAP tools for VMware vSphere 10.3 zero RPO is not supported.

Learn more about [How to restore ONTAP tools for VMware vSphere if upgrade fails from version 10.0 to 10.1](#)

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