Upgrade ONTAP tools for VMware vSphere

ONTAP tools for VMware vSphere 10

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Upgrade ONTAP tools for VMware vSphere

Upgrade from ONTAP tools for VMware vSphere 10.x to 10.5

You can upgrade from ONTAP tools for VMware vSphere 10.3 or 10.4 to 10.5. However, to upgrade from ONTAP tools 10.0, 10.1, or 10.2 to 10.5, you must first upgrade to 10.3 or 10.4 before proceeding to 10.5.

- For ASA r2 systems, make sure you upgrade to ONTAP tools for VMware vSphere to 10.5 and ONTAP to 9.16.1, before setting up more storage availability zones (SAZs).
- If the upgrade from ONTAP tools for VMware vSphere 10.3 or 10.4 to 10.5 fails, you cannot roll back. Use low RPO or snapshot recovery to restore the setup. For ONTAP tools for VMware vSphere 10.2 and earlier, use zero-RPO to restore the setup.

Before you begin

- Ensure that all nodes are active.
- Ensure the ONTAP system certificate and onboarded vCenter certificates are valid for at least 5 days. If the certificates expire sooner, the upgrade fails.
- Ensure you have a fifth disk with a capacity of 100 GB on all nodes.
- Verify that the node configuration matches the specifications in the table below.

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

- Ensure hot plug-in for CPU and RAM is enabled.
- Enable low RPO backup and ensure one backup is visible in vCenter Client interface. Download the backup folder before upgrade.
- Low RPO backup is recommended. However, in non-HA deployment, you can take a quiesced snapshot of the ONTAP tools virtual machine before upgrading.

  Refer to Edit Backup settings and Recover the ONTAP tools setup for more information about backup and recovery.

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, check the **Connected** box for the **CD/DVD drive** field, and click **OK**.
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. Provide the vCenter credentials, when prompted. This is the vCenter instance where the ONTAP tools is hosted.

   If you are using ONTAP tools in a two-vCenter Server topology—where the appliance is hosted in one vCenter instance and manages another, you can assign a restricted role for the vCenter instance hosting the ONTAP tools. You can create a dedicated vCenter user and role with only the permissions required for OVF template deployment. For details, see the roles listed in Roles included with ONTAP tools for VMware vSphere 10.

   For the vCenter instance that will be managed by ONTAP tools, make sure the vCenter user account has administrator privileges.

   During the upgrade, if any onboarded storage backend certificates are missing Subject Alternative Name (SAN) entries, you will receive a prompt indicating the missing SAN. If you choose to proceed without validating the SAN, the upgrade will continue, but this is not recommended because of potential security risks.

10. When you upgrade, the following actions are performed automatically:
    a. The gateway certificate is renewed with a 1-year validity period. When you remove the previous SRA adapter and upload the new 10.5 adapter, the SRA certificate validity changes from 10 years to 1 year.
    b. Remote plug-in is upgraded
    c. ONTAP and vCenter Server certificates are validated and added to ONTAP tools
    d. Backup is enabled

What's next

After upgrading to ONTAP tools for VMware vSphere 10.5:

- Monitor system alerts and plan to renew the gateway certificate before it expires in one year.
- Remove the ONTAP tools 10.4 or 10.3 SRA adapter and upload the 10.5 SRA adapter tar file.
- Run the install command after uploading SRA adapter tar. the Then, rescan the SRA adapters to update the VMware Site Recovery Storage Replication Adapters page.

After upgrading 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 to a non-HA medium, or to an HA medium or large configuration.

Related information

Migrate from ONTAP tools for VMware vSphere 9.xx to 10.5

ONTAP tools 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.

Upgrade error code	Workflow	Resolution
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.
084	Changing JobManager back to Production failed	Follow the below steps to recover/complete the upgrade. 1. Enable Diagnostic Shell 2. Run the command: *sudo perl /home/maint/scripts/post-deploy-upgrade.pl --postupgrade* 3. Check the logs at /var/log/post-deploy-upgrade.log
087	Post upgrade steps failed.	Perform the following steps to recover/complete the upgrade. 1. Enable Diagnostic Shell 2. Run *sudo perl /home/maint/scripts/post-deploy-upgrade.pl --postupgrade* command 3. Check the logs at /var/log/post-deploy-upgrade.log
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.

Upgrade error code	Workflow	Resolution
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.
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
090	certificate validation for storage backends and vCenter failed	Check upgrade logs and log file at /var/log/cert_validation_error.log and retry the upgrade.

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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