■ NetApp

Manage ONTAP tools

ONTAP tools for VMware vSphere 10.1

NetApp
June 21, 2024

Table of Contents

Manage ONTAP tools

Manage datastores

Mount NFS and VMFS datastores

Mounting a datastore provides storage access to additional (NFS/VMFS) hosts. You can mount the datastore on the additional hosts after you add the hosts to your VMware environment.

> (i) Some of the right click actions are disabled or unavailable depending on vSphere client versions and the type of datastore selected. If you're using vSphere client 8.0 or later versions, some of the right-click options are hidden. From vSphere 7.0U3 to vSphere 8.0 versions even though the options appear, the action will be disabled.

Steps

1. From the vSphere Client home page, click **Hosts and Clusters**.
2. In the navigation pane, select the datacenter that contains the host.
3. Repeat Step 2 for any additional hosts.
4. To mount NFS/VMFS datastores on host or host cluster, right-click on it, and then select **NetApp ONTAP tools** > **Mount Datastores**.
5. Select the datastores that you want to mount, and then click **Mount**.

You can track the progress in the Recent Task panel.

Mount vVols datastore

You can mount a VMware Virtual Volumes (vVols) datastore to one or more additional hosts to provide storage access to additional hosts. You can unmount vVols datastore only through the APIs.

Steps

1. From the vSphere Client home page, click **Hosts and Clusters**.
2. In the navigation pane, select the datacenter that contains the datastore.
3. Right-click the datastore and select **NetApp ONTAP tools** > **Mount datastore**.
4. In the **Mount datastores on Hosts** dialog box, select the hosts on which you want to mount the datastore, and then click **Mount**.

You can track the progress in the Recent Task panel.

Resize NFS and VMFS datastores

Resizing a datastore enables you to increase the storage for your virtual machine files. You can change the size of a datastore as your infrastructure requirements change.

About this task

You can only increase the size of an NFS and VMFS datastores. A FlexVol volume that is part of a NFS and VMFS datastores cannot shrink below the existing size but can grow by 120% maximum.

Steps

1. From the vSphere Client home page, click **Hosts and Clusters**.
2. In the navigation pane, select the datacenter that contains the datastore.
3. Right-click the NFS or VMFS datastore datastore and select **NetApp ONTAP tools** > **Resize datastore**.
4. In the Resize dialog box, specify a new size for the datastore, and then click **OK**.

Expand vVols Datastores

When you right click on datastore object in the vCenter object view, ONTAP tools for VMware vSphere supported actions are shown under the plug-in section. Specific actions are enabled depending on the type of datastore and the current user privileges.

Steps

1. From the vSphere Client home page, click **Hosts and Clusters**.
2. In the navigation pane, select the datacenter that contains the datastore.
3. Right-click the datastore and select **NetApp ONTAP tools** > **Add storage to datastore**.
4. In the **create or Select Volumes** window, you can either create new volumes or choose from the existing volumes. The UI is self-explanatory. Follow the instructions as per your choice.
5. In the **Summary** window, review the selections and click **Expand**. You can track the progress in the Recent Tasks panel.

Shrink vVols datastores

Delete datastore action deletes the datastore when there are no vVols on the selected datastore.

Steps
1. From the vSphere Client home page, click **Hosts and Clusters**.
2. In the navigation pane, select the datacenter that contains the datastore.
3. Right click on the vVol datastore and select **NetApp ONTAP tools** > **Remove storage from datastore**.
4. Select volumes which do not have vVols and click **Remove**.

> ⓘ The option to select the volume on which the vVols is residing is disabled.

5. In the **Remove storage** pop-up, select **Delete volumes from ONTAP cluster** checkbox to delete the volumes from datastore and from ONTAP storage and click **Delete**.

Delete datastores

Remove storage from datastore action is supported on all ONTAP tools for VMware

vSphere discovered or managed vVols datastores in the vCenter Server. This action allows the removal of volumes from the vVols datastore.

Remove option is disabled when there are vVols residing on a particular volume. In addition to removing volumes from datastore, you can delete the selected volume on ONTAP storage.

Delete datastore task from ONTAP tools for VMware vSphere in the VCenter Server does the following:

- Unmounts the vVol container.
- Cleans up igroup. If igroup is not in use, removes iqn from igroup.
- Deletes Vvol container.
- Leaves the Flex volumes on the storage array.

Follow the steps below to delete NFS, VMFS, or vVOL datastore from ONTAP tools from the vCenter Server:

Steps

1. Log in to the vSphere client using `https://vcenterip/ui`

2. Right-click a Host System or a Host Cluster or a Datastore, and then select **NetApp ONTAP tools** > **Delete datastore**.

   (i) You cannot delete the datastores if there are virtual machines using that datastore. You need to move the virtual machines to a different datastore before deleting the datastore.

   a. In the case of NFS or VMFS datastore a dialog box appears with the list of VMs that are using the datastore.

   b. In the case of vVols datastore, Delete datastore action deletes the datastore only when there are no vVols associated with it. The Delete datastore dialog box provides an option to delete volumes from ONTAP cluster.

3. To delete the backing volumes on ONTAP storage, select **Delete volumes on ONTAP cluster**.

ONTAP storage views for datastores

ONTAP storage view under configure tab of ONTAP tools for VMware vSphere provides data related to the datastores and their volume. This view provides the storage side view of the datastore.

ONTAP storage views for NFS datastores

Steps

1. From the vSphere Client navigate to the NFS datastore.

2. Click the **Configure** tab in the right side pane.

3. Select **NetApp ONTAP tools** > **ONTAP Storage**. The **Storage details** and **NFS details** appear on the right pane.
   - The storage details page contains information about storage backends, aggregate, and volume.
   - The NFS details page contains data related to the NFS datastore.

ONTAP storage views for VMFS datastores

Steps

1. From the vSphere Client navigate to the VMFS datastore.

2. Click the **Configure** tab in the right side pane.

3. Select **NetApp ONTAP tools** > **ONTAP Storage**. The **Storage details** and **LUN details** appear on the right pane.

   - The storage details page contains information about storage backends, aggregate, and volume.

   - The LUN details page contains data related to the LUN.

ONTAP storage views for vVols datastores

Steps

1. From the vSphere Client navigate to the vVols datastore.

2. Click the **Configure** tab in the right side pane.

3. Select **NetApp ONTAP tools** > **ONTAP Storage**.

4. The ONTAP storage view lists all the volumes. You can expand or remove storage from the ONTAP storage pane.

   Follow the instructions in Expand vVols Datastores section to add vVols datastore and Shrink vVols datastores section to delete the datastore.

Virtual machine storage view

The storage view shows the list of vVols that are created by the virtual machine.

ⓘ   This view is applicable for the VM which has at least one ONTAP tools for VMware vSphere managed vVols datastore related disk mounted on it.

Steps

1. From the vSphere Client navigate to the virtual machine.

2. Click the **Monitor** tab in the right side pane.

3. Select **NetApp ONTAP tools** > **Storage**. The **Storage** details appear on the right pane. You can see the list of vVols that are present on the VM.

   You can use the 'Manage Columns' option to hide or show different columns.

Manage Storage threshold

You can set the threshold to receive notifications in vCenter Server when the volume and the aggregate capacity reaches certain levels.

Steps:

1. Log in to the vSphere client using `https://vcenterip/ui`

2. In the shortcuts page, click on **NetApp ONTAP tools** under the plug-ins section.

3. In the left pane of ONTAP tools, navigate to **Settings** > **Threshold Settings** > **Edit**

4. In the **Edit Threshold** window, provide the desired values in the **Nearly Full** and **Full** fields and click Save. You can reset the numbers to recommended values, which is 80 for Nearly full and 90 for full.

Manage storage backends

Storage backends are systems that the ESXi hosts use for data storage.

Discover storage

You can run the discovery of a storage backend on demand without waiting for scheduled discovery to update the storage details.

Follow the steps below to discover the storage backends.

Steps

1. Log in to the vSphere client using `https://vcenterip/ui`

2. In the shortcuts page, click on **NetApp ONTAP tools** under the plug-ins section.

3. In the left pane of ONTAP tools, navigate to **Storage Backends** and select a storage backend.

4. Click on the vertical ellipses menu and select **Discover storage**

You can track the progress in the Recent Tasks panel.

Modify storage backend

Follow the steps in this section to modify the existing storage backend.

1. Log in to the vSphere client using `https://vcenterip/ui`

2. In the shortcuts page, click on **NetApp ONTAP tools** under the plug-ins section.

3. In the left pane of ONTAP tools, navigate to **Storage Backends** and select a storage backend.

4. Click on the vertical ellipses menu and select **Modify** to modify the credentials or the port name. You can track the progress in the Recent Tasks panel.

You can perform the Modify operation for global ONTAP clusters using ONTAP tools Manager using the following steps

1. Launch ONTAP tools Manager from a web browser: `https://loadBalanceIP:8443/virtualization/ui/`

2. Log in with the ONTAP tools for VMware vSphere administrator credentials you provided during deployment.

3. Select storage backends from the sidebar.

4. Select the Storage Backend you want to modify

5. Click on the vertical ellipses menu and select **Modify**.

6. You can modify the credentials or the port. Enter the **Username** and **Password** to modify the storage backend.

Remove storage backend

You need to delete all the datastores attached to the storage backend before removing the storage backend. Follow the steps below to remove storage backend.

1. Log in to the vSphere client using `https://vcenterip/ui`

2. In the shortcuts page, click on **NetApp ONTAP tools** under the plug-ins section.

3. In the left pane of ONTAP tools, navigate to **Storage Backends** and select a storage backend.

4. Click on the vertical ellipses menu and select **Remove**. Ensure that the storage backend does not contain any datastores. You can track the progress in the Recent Tasks panel.

You can perform the remove operation for global ONTAP clusters using ONTAP tools Manager.

1. Launch ONTAP tools Manager from a web browser:
   `https://loadBalanceIP:8443/virtualization/ui/`

2. Log in with the ONTAP tools for VMware vSphere administrator credentials you provided during deployment.

3. Select **Storage Backends** from the sidebar.

4. Select the storage backend you want to remove

5. Click on the vertical ellipses menu and select **Remove**.

Drill down view of storage backend

The storage backend page lists all the storage backends. You can perform discover storage, modify, and remove operations on the storage backends you added and not the individual child under the cluster.

When you click on either the parent cluster or the child under the storage backend, you can see the overall summary of the component. When you click on the parent cluster you have the actions dropdown from which you can perform the discover storage, modify, and remove operations. This option is missing when you click on the child SVM.

The summary page provides the following details:

- Status of the storage backend

- Capacity information

- Basic information about the VM

- Network information like the IP address and port of the network. For the child SVM, the information will be same as the parent storage backend.

- Privileges allowed and restricted for the storage backend. For the child SVM, the information will be same as the parent storage backend. Privileges are shown only on the cluster-based storage backends. If you add SVM as the storage backend, privileges information will not be shown.

The Interface tab provides detailed information about the interface.

The Local Tiers tab provides detailed information about the aggregate list.

Manage vCenter Server instance

vCenter Servers are central management platforms that allow you to control hosts, virtual machines, and storage backends.

Associate or Dissociate storage backend with vCenter Server instance

The vCenter Server listing page shows the associated number of storage backends. Each vCenter Server instance has the option to Associate or Disassociate a storage backend This task helps you to create mapping between storage backend and onboarded vCenter Server instance globally.

Steps

1. Launch ONTAP tools Manager from a web browser:
   `https://loadBalanceIP:8443/virtualization/ui/`

2. Log in with the ONTAP tools for VMware vSphere administrator credentials you provided during deployment.

3. Select vCenter Server instances from the sidebar.

4. Click on the vertical ellipses against the vCenter Server that you want to associate or dissociate with storage backends.

5. Select **Associate or Dissociate storage backend** depending on what action you want to perform.

Modify vCenter Server instance

Follow the steps below to modify the vCenter Server instances.

1. Launch ONTAP tools Manager from a web browser:
   `https://loadBalanceIP:8443/virtualization/ui/`

2. Log in with the ONTAP tools for VMware vSphere administrator credentials you provided during deployment.

3. Select vCenter Server instances from the sidebar

4. Click on the vertical ellipses against the vCenter Server that you want to modify and select **Modify**.

5. Modify the vCenter Server instance details and select **Modify**.

Remove vCenter Server instance

You need to remove all the storage backends attached to the vCenter Server before removing it.

1. Launch ONTAP tools Manager from a web browser:
   `https://loadBalanceIP:8443/virtualization/ui/`

2. Log in with the ONTAP tools for VMware vSphere administrator credentials you provided during deployment.

3. Select vCenter Server instances from the sidebar

4. Click on the vertical ellipses against the vCenter Server that you want remove and select **Remove**.

   ⓘ   Once you remove the vCenter Server instances, it will no longer be maintained by the application.

Manage certificates

Single instance of ONTAP tools for VMware vSphere can manage multiple vCenter Server instances. ONTAP tools for VMware vSphere is deployed with a self-signed certificate for VASA Provider. With this, only one vCenter Server instance can be managed for vVols datastores. When you're managing multiple vCenter Server instances and you want to enable vVols capability on multiple vCenter Server instances then you need to change the self-signed certificate to custom CA certificate using ONTAP tools Manager interface. You can use the same interface to renew or refresh all certificates.

> ⓘ A different load balancer IP address mapped to different domains is not supported when you upgrade self-signed to custom CA.

Steps

1. Launch ONTAP tools Manager from a web browser:
   `https://loadBalanceIP:8443/virtualization/ui/`

2. Log in with the ONTAP tools for VMware vSphere administrator credentials you provided during deployment.

3. Select **Certificates** > **VASA provider** > **Renew** option to renew the certificates.

   > ⓘ The system will be offline till the certificate is renewed.

4. To upgrade the self-signed certificate to custom CA certificate, select **Certificates** > **VASA provider** > **Upgrade to CA** option.

   a. In the **upgrade certificate to custom CA** pop-up, upload the server certificate, server certificate private key, root CA certificate, and intermediate certificate files. The tool tip provides description of the certificates.

   b. Enter the domain name for which you generated this certificate.

   c. Click **Upgrade**

   > ⓘ The system will be offline till the upgrade is complete.

Manage igroup and export policies

In ONTAP, export polices are used to provide volume data path access to hosts and initiator groups (igroups) are used to provide logical unit number (LUN) data path access to ESXi hosts.

When virtual volume datastores are created or mounted to hosts in vCenter Server, the hosts need to be given access to volumes (NFS) or LUNs (iSCSI) depending on the protocol type of the datastore.

The export policy is dynamic and the new export policy is created in format of trident-uuid. On your ONTAP System Manager, go to **Storage** > **Storage VMs** > **[storage VM name]** > **Settings** > **Export Policies** to see the export policy.

The igroups and export policies in ONTAP tools for VMware vSphere are managed in an efficient manner and

provide the following benefits:

- Supports migrated export policies and igroups.

- No interruption of Virtual Machine input and output operations.

- Supports mounting on additional hosts without manual intervention.

- Minimizes the need for managing the number of igroups and export policies.

- A garbage collector automatically deletes all the unused managed igroups and export Policies periodically.

- If datastore is provisioned at host cluster level, then igroup is created with all host initiators under the host cluster that are added to the igroup.

Access ONTAP tools for VMware vSphere maintenance console

Overview of ONTAP tools for VMware vSphere maintenance console

You can manage your application, system, and network configurations by using the maintenance console of ONTAP tools. You can change your administrator password and maintenance password. You can also generate support bundles, set different log levels, view and manage TLS configurations, and start remote diagnostics.

You should have VMware tools installed after deploying ONTAP tools for VMware vSphere to access the maintenance console. You should use `maint` as the username and the password you configured during deployment to log in to the maintenance console of ONTAP tools. You should use **nano** for editing the files in maintenance or root login console.

> ⓘ   You should set a password for the `diag` user while enabling remote diagnostics.

You should use the **Summary** tab of your deployed ONTAP tools for VMware vSphere to access the maintenance console. When you click ▶, the maintenance console starts.

Console Menu	Options
Application Configuration	1. Display server status summary 2. Change LOG level for VASA Provider Services and SRA Services 3. Disable AutoSupport

System Configuration	1. Reboot virtual machine
	2. Shutdown virtual machine
	3. Generate token to reset manager UI password
	4. Change time zone
	5. Add new NTP server
	6. Increase jail disk size (/jail)
	7. Upgrade
	8. Install VMware Tools
Network Configuration	1. Display IP address settings
	2. Display domain name search settings
	3. Change domain name search settings
	4. Display static routes
	5. Change static routes
	6. Commit changes
	7. Ping a host
	8. Restore default settings
Support and Diagnostics	1. Access diagnostic shell
	2. Enable remote diagnostic access

Configure remote diagnostic access

You can configure ONTAP tools for VMware vSphere to enable SSH access for the diag user.

What you will need

The VASA Provider extension should be enabled for your vCenter Server instance.

About this task

Using SSH to access the diag user account has the following limitations:

- You are allowed only one login account per activation of SSH.
- SSH access to the diag user account is disabled when one of the following happens:
  - The time expires.

    The login session remains valid only till midnight the next day.

  - You log in as a diag user again using SSH.

Steps

1. From vCenter Server, open a console to VASA Provider.

2. Log in as the maintenance user.

3. Enter 4 to select Support and Diagnostics.

4. Enter 3 to select Enable remote diagnostics access.

5. Enter y in the Confirmation dialog box to enable remote diagnostic access.

6. Enter a password for remote diagnostic access.

Start the SSH on other nodes

You need to start the SSH on other nodes before you upgrade.

What you will need

The VASA Provider extension should be enabled for your vCenter Server instance.

About this task

Perform this procedure on each of the nodes, before you upgrade.

Steps

1. From vCenter Server, open a console to VASA Provider.

2. Log in as the maintenance user.

3. Enter 4 to select Support and Diagnostics.

4. Enter 1 to select Access diagnostic shell.

5. Enter y to proceed.

6. Run the command *sudo systemctl restart ssh*.

Update the vCenter Server and ONTAP credentials

You can update the vCenter Server instance and ONTAP credentials using the maintenance console.

What you will need

You need to have maintenance user login credentials.

About this task

If you have changed the credentials for vCenter Server, ONTAP, or Data LIF post deployment, then you need to update the credentials using this procedure.

Steps

1. From vCenter Server, open a console to VASA Provider.

2. Log in as the maintenance user.

3. Enter 4 to select Support and Diagnostics.

4. Enter `1` to select Access diagnostic shell.

5. Enter `y` to proceed.

6. Update the credentials as required:

   a. For Updating the ONTAP credentials run the command:

      otv-update --ontapUsername <new username> --ontapPassword <new password>

   b. For Updating the vCenter credentials run the command:

      otv-update --vcenterUsername <new username> --vcenterPassword <new password>

   c. For Updating the data LIF run the command:

      otv-update --dataLif <new Datalif IP>

ONTAP tool reports

ONTAP tools for VMware vSphere plug-in provides reports for virtual machines and datastores. When you select NetApp ONTAP tools for VMware vSphere plug-in icon in the shortcuts section on the vCenter client, the user interface navigates to Overview page. Select the Reports tab to view the virtual machine and the datastores report.

Virtual Machines report shows the list of discovered virtual machines (should have at least one disk from ONTAP storage based datastores) with performance metrics. When you expand the VM record, all the disk related datastore info is displayed.

Datastores report shows the list of discovered or recognized ONTAP tools for VMware vSphere managed Datastores that are provisioned from ONTAP storage backend of all types with performance metrics.

You can use the 'Manage Columns' option to hide or show different columns.

Collect the log files

You can collect log files for ONTAP tools for VMware vSphere from the options available in ONTAP tools Manager user interface. Technical support might ask you to collect the log files to help troubleshoot a problem.

> ⓘ Generating logs from the ONTAP tools Manager includes all logs for all vCenter Server instances. Generating logs from vCenter client UI are scoped for the selected vCenter Server.

Steps

1. Launch ONTAP tools Manager from a web browser:
   `https://loadBalanceIP:8443/virtualization/ui/`

2. Log in with the ONTAP tools for VMware vSphere administrator credentials you provided during deployment.

3. Select **Log Bundles** from the sidebar.

This operation can take several minutes.

4. Select **Generate** to generate the log files.

5. Enter the label for the Log Bundle and select **Generate**.

   Download the tar.gz file and send it to technical support.

Follow the steps below to generate log bundle using the vCenter client UI:

Steps

1. Log in to the vSphere client using `https://vcenterip/ui`

2. From the vSphere Client home page, go to **Support** > **Log bundle** > **Generate**.

3. Provide the log bundle label and generate the log bundle. You can see the download option when the files are generated. Downloading may take some time.

   > ⓘ The log bundle generated replaces the log bundle that was generated within the last last 3 days or 72 hrs.

Manage virtual machines

Considerations to migrate or clone virtual machines

You should be aware of some of the considerations while migrating existing virtual machines in your datacenter.

Migrate protected virtual machines

You can migrate the protected virtual machines to:

- Same vVols datastore in a different ESXi host

- Different compatible vVols datastore in same ESXi host

- Different compatible vVols datastore in a different ESXi host

If the virtual machine is migrated to a different FlexVol volume, then the respective metadata file also gets updated with the virtual machine information. If a virtual machine is migrated to a different ESXi host but same storage, then underlying FlexVol volume metadata file will not be modified.

Clone protected virtual machines

You can clone protected virtual machines to the following:

- Same container of same FlexVol volume using replication group

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

- Same container of a different FlexVol volume using replication group

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

- Different container or vVols datastore

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

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

Clone-of-Clone of a protected virtual machine is supported.

Virtual Machine Snapshots

Presently only virtual machine Snapshots without memory are supported. If virtual machine has Snapshot with memory, then the virtual machine is not considered for protection.

You also cannot protect unprotected virtual machines that have memory Snapshot. For this release, you are expected to delete memory snapshot before enabling protection for the virtual machine.

Migrate virtual machines with NFS and VMFS datastores to vVols datastores

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.

What you will need

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 then click **Migrate**.
2. Select **Change storage only**, and then click **Next**.
3. Select a virtual disk format, a VM Storage Policy, and a vVol datastore that matches the features of the datastore that you are migrating, and then click **Next**.
4. Review the settings, and then click **Finish**.

VASA cleanup

Use the steps in this section to perform VASA cleanup.

(i) It is recommended that you remove any vVols datastores before performing 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. Shutdown ONTAP tools for VMware vSphere VM

4. Delete ONTAP tools for VMware vSphere VM

Modify ESXi host settings using ONTAP tools

You can use the dashboard of ONTAP tools for VMware vSphere to edit your ESXi host settings.

What you will need

You should have configured an ESXi host system for your vCenter Server instance.

If there is an issue with your ESXi host settings, the issue is displayed in the ESXi host systems portlet of the dashboard. You can click the issue to view the host name or the IP address of the ESXi host that has the issue.

Steps

1. Log in to the vSphere client using `https://vcenterip/ui`

2. In the shortcuts page, click on **NetApp ONTAP tools** under the plug-ins section.

3. Go to **ESXi Host compliance** portlet in the Overview (Dashboard) of the ONTAP tools for VMware vSphere plug-in.

4. Select **Apply Recommended Settings** link.

5. In the **Apply recommended host settings** window, select the hosts that you want to comply with NetApp recommended host settings and click **Next**

   > ℹ️ You can expand the ESXi host to see the current values

6. In the settings page, select the recommended values as required.

7. In the summary pane, check the values and click **Finish** You can track the progress in the Recent task panel.

Manage passwords

Change ONTAP tools Manager password

You can change the administrator password using ONTAP tools Manager.

Steps

1. Launch ONTAP tools Manager from a web browser:
   `https://loadBalanceIP:8443/virtualization/ui/`

2. Log in with the ONTAP tools for VMware vSphere administrator credentials you provided during deployment.

3. Click on the **administrator** icon on the top right corner of the screen and select **Change password**.

4. In the change password pop-up window, enter the old password and the new password details. The constraint for changing the password is displayed on the UI screen.

5. Click **Change** to implement the changes.

Reset ONTAP tools Manager password

If you've forgotten the ONTAP tools Manager password, you can reset the administrator credentials using the token generated by ONTAP tools for VMware vSphere maintenance console.

Steps

1. Launch ONTAP tools Manager from a web browser:
   `https://loadBalanceIP:8443/virtualization/ui/`

2. On the login screen, select **Reset password** option.

   To reset the Manager password, you need to generate the reset token using the ONTAP tools for VMware vSphere maintenance console. .. From vCenter Server, open the maintenance console .. Enter '2' to select System Configuration option .. Enter '3' to generate the token to reset manager password

3. In the change password pop-up window, enter the password reset token, username, and the new password details.

4. Click **Reset** to implement the changes. On successful password reset, you can use new password to log in.

Reset application user password

The application user password is used for SRA and VASA provider registration with vCenter Server.

Steps

1. Launch ONTAP tools Manager from a web browser:
   `https://loadBalanceIP:8443/virtualization/ui/`

2. Log in with the ONTAP tools for VMware vSphere administrator credentials you provided during deployment.

3. Click on **Settings** from the sidebar.

4. In the **Application user credentials** screen, select **Reset password**.

5. Provide Username, new password and confirm new password inputs.

6. Click **Reset** to implement the changes.

Reset maintenance console user password

During guest OS restart operation, grub menu displays an option to reset maintenance console user password. This option is used to update the maintenance console user password present on the corresponding VM. Once the reset password is complete, the VM restarts to set the new password. In HA deployment scenario, after the VM restart, the password is automatically updated on the other two VMs.

Steps

1. Log in to your vCenter Server

2. Right-click on the VM and select **Power** > **Restart Guest OS** During system restart, you get the following screen:
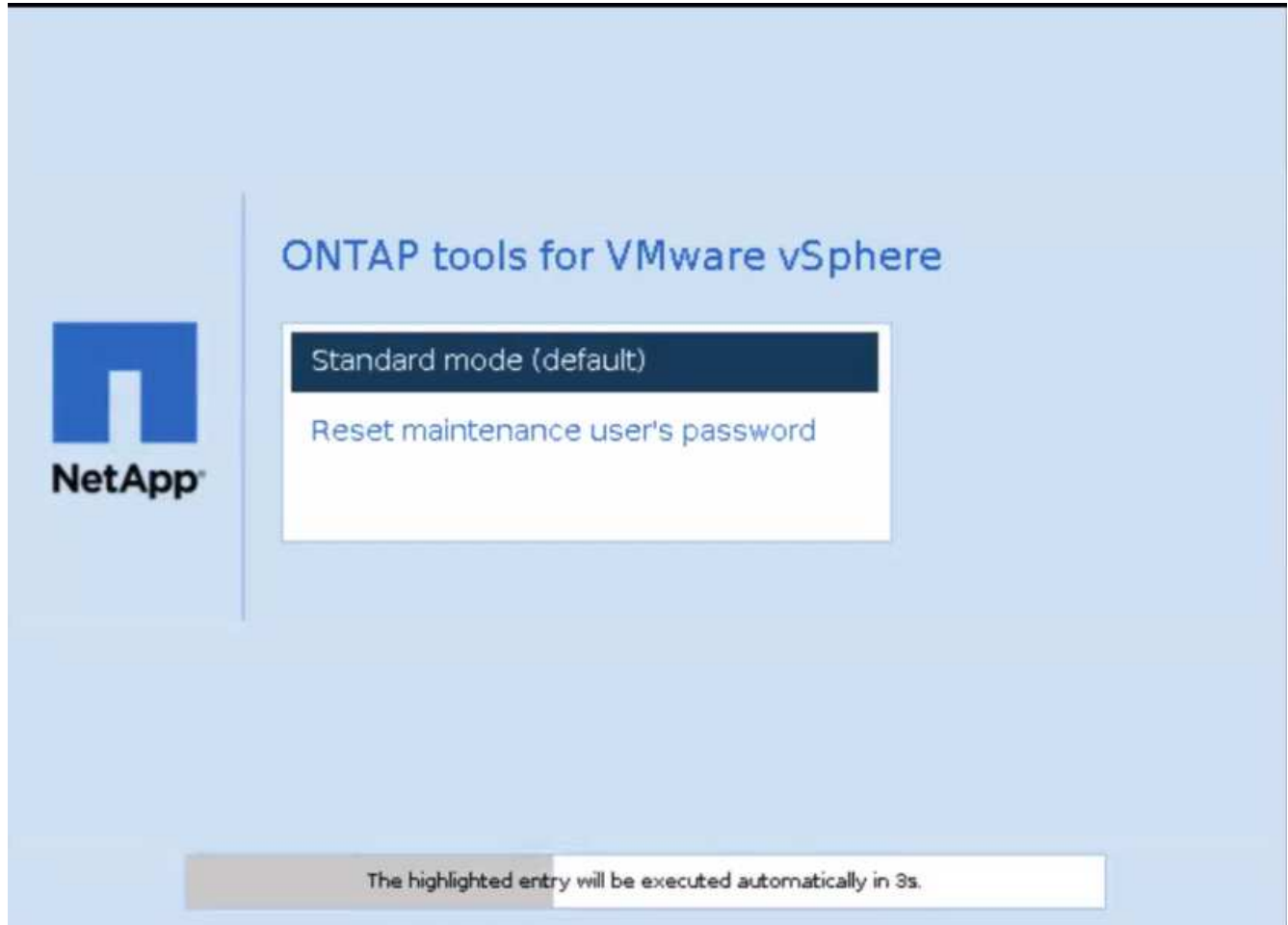
You have 5 seconds to choose your option. Press any key to stop the progress and freeze the grub menu.

3. Select **Reset maintenance user's password** option. The maintenance console opens.

4. In the console, enter the new password details. New password and retype new password details should match to successfully reset the password. You have three chances to enter the correct password. The system restarts after successfully entering the new password.

5. Press Enter to continue. The password is updated on the VM.

> ⓘ The same grub menu comes up during power on of the VM as well. However, you should use the reset password option only with **Restart Guest OS** option.

Clean up volumes

After deleting ONTAP tools for VMware vSphere deployment, you should clean up the FlexVolumes created during the deployment. If you have used a dedicated ONTAP cluster for deployments, you should clean up the FlexVolumes as the deployment creates lot of FlexVolumes which are unused resulting in lowered performance.

Use the following guidelines to clean up the FlexVolumes post removal of ONTAP tools for VMware vSphere deployment.

Steps

1. From the primary node VM of ONTAP tools for VMware vSphere, run the following command to identify the type of deployment.

   cat /opt/netapp/meta/ansible_vars.yaml | grep -i protocol

   If it is an iSCSI deployment, then you need to delete igroups as well.

2. Fetch the list of FlexVolumes created in ONTAP during the deployment using the following command.

   kubectl describe persistentvolumes | grep internalName | awk -F'=' '{print $2}'

3. Delete VMs from vCenter Server, see Remove VMs or VM Templates from vCenter Server or from the Datastore

4. Delete volumes from ONTAP system manager, see Delete a FlexVol volume. Give the exact name of the FlexVolume in the cli command to delete the volume.

5. In case of iSCSI deployment, delete SAN igroups from ONTAP, see View and manage SAN initiators and igroups.

   In HA deployment, four igroups are created and in non-HA deployment two igroups are created. Run the following command to find the first igroup name:

   kubectl -n trident get tbc trident-backend -o yaml| grep igroupName: | awk -F':' '{print $2}'

   The other igroup names start with the hostname of the VM.