



# **Configure storage systems**

## **ONTAP tools for VMware vSphere 9.11**

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# Configure storage systems

## Overview of storage systems for ONTAP tools

You should add storage systems to ONTAP tools and set default credentials, if required, by using the VSC interface.

ONTAP tools for VMware vSphere provides a single mechanism to discover storage systems and to set the storage credentials. The credentials provide the ONTAP permissions that are required to enable Virtual Storage Console (VSC) users to perform tasks by using the storage systems.

Before VSC can display and manage the storage resources, VSC must discover the storage systems. As part of the discovery process, you must supply the ONTAP credentials for your storage systems. These are the privileges (or roles) that are associated with the user name and password pair that is assigned to each storage system. These user name and password pairs use ONTAP role-based access control (RBAC) and must be set up from within ONTAP. You cannot change these credentials from within VSC. You can define ONTAP RBAC roles by using ONTAP System Manager.



If you log in as an administrator, you automatically have all of the privileges for that storage system.

When you add a storage system to VSC, you must supply an IP address for the storage system and the user name and password pair that is associated with that system. You can set up default credentials that VSC will use during the storage system discovery process, or you can manually enter credentials when the storage system is discovered. The details of the storage system that is added to VSC are automatically pushed to the extensions that you enable in your deployment. You do not have to manually add storage to VASA Provider and Storage Replication Adapter (SRA). Both VSC and SRA support the addition of credentials at the cluster level and storage virtual machine (SVM) level. VASA Provider supports only cluster-level credentials for adding storage systems.

If your environment includes multiple vCenter Server instances, when you add a storage system to VSC from the Storage Systems page, the Add Storage System dialog box displays a vCenter Server box where you can specify to which vCenter Server instance the storage system is to be added. If you add a storage system by right-clicking a datacenter name, you do not have the option to specify a vCenter Server instance because the server is already associated with that datacenter.

Discovery happens in one of the following ways. In each case, you must supply credentials for any newly discovered storage system.

- When the VSC service starts, VSC begins its automatic background discovery process.
- You can click the REDISCOVER All button in the **Storage Systems** page, or on a host or datacenter to select it from the **Actions** menu ( **Actions** > **Netapp ONTAP tools** > **Update Host and Storage Data** ). You can also click **DISCOVER** on the **Getting Started** tab of the 'Overview' section.

All of the VSC features require specific permissions to perform tasks. You can limit what users can do based on the credentials that are associated with the ONTAP role. All of the users that have the same storage system user name and password pair share the same set of storage system credentials and can perform the same operations.

# Set default credentials for storage systems

You can use ONTAP tools for VMware vSphere to set default credentials for a storage system in your vCenter Server.

## What you will need

You must have selected the vCenter Server that you want to use for creating default credentials.

## About this task

If you set up default credentials for storage systems, Virtual Storage Console (VSC) uses these credentials to log in to a storage system that VSC has just discovered. If the default credentials do not work, you must manually log in to the storage system. VSC and SRA support addition of storage system credentials at the cluster level or the SVM level. But VASA Provider will only work with cluster level credentials.

## Steps

1. On the ONTAP tools Home page, click **Settings > Administrative Settings > Configure Default Credentials for Storage System**.
2. In the Storage System Default Credentials dialog box, enter the user name and password for the storage system.

Storage controller credentials are assigned in ONTAP based on the user name and password pair. The storage controller credentials can either be the administrator account or a custom account that uses role-based access control (RBAC).

You cannot use VSC to change the roles that are associated with the user name and password pair of the storage controller. To modify or create a new ONTAP user role for use with ONTAP tools, you can use System Manager.

See the “Configuring user roles and privileges” section.

3. Click **OK** to save the default credentials.

If you updated the storage system credentials because a storage system reported “Authentication Failure” status, you should click the **REDISCOVER ALL** option available on the Storage Systems page. When you do this, VSC tries to connect to the storage system by using the new credentials.

# Add storage systems to VSC

You can manually add storage system to Virtual Storage Console (VSC).

## About this task

Each time you start Virtual Storage Console (VSC) or select the **REDISCOVER All** option, VSC automatically discovers the available storage systems.

## Steps

1. Add a storage system to VSC by using the ONTAP tools home page:
  - Click **Storage Systems > Add**.

- Click **Overview > Getting Started**, and then click **ADD** button under Add Storage System.
2. In the **Add Storage System** dialog box, enter the management IP address and credentials for that storage system.

You can also add storage systems using the IPv6 address of the cluster or SVM. You can also change the defaults for TLS and the port number in this dialog box.

When you add storage from the VSC Storage System page, you must also specify the vCenter Server instance where the storage will be located. The Add Storage System dialog box provides a drop-down list of the available vCenter Server instances. VSC does not display this option if you are adding storage to a datacenter that is already associated with a vCenter Server instance.

3. Click **OK** after you have added all of the required information.

## Discover storage systems and hosts

When you first run Virtual Storage Console (VSC) in a vSphere Client, VSC discovers the ESXi hosts, their LUNs and NFS exports, and the NetApp storage systems that own those LUNs and exports.

### What you will need

- All of the ESXi hosts must be powered on and connected.
- All the storage virtual machines (SVMs) to be discovered must be running, and each cluster node must have at least one data LIF configured for the storage protocol in use (NFS, iSCSI or FC).

### About this task

You can discover new storage systems or update information about existing storage systems to obtain the latest capacity and configuration information at any time. You can also modify the credentials that VSC uses to log in to the storage systems.

While discovering the storage systems, VSC collects information from the ESXi hosts that are managed by the vCenter Server instance.

### Steps

1. From the vSphere Client Home page, select **Hosts and Clusters**.
2. Right-click the required datacenter, and then select **NetApp VSC > Update Host and Storage Data** .  
  
VSC displays a Confirm dialog box that informs you that this operation might take a long time.
3. Click **OK**.
4. Select the discovered storage controllers that have the status “Authentication Failure”, and then click **ACTIONS > Modify**.
5. Fill in the required information in the Modify Storage System dialog box.
6. Repeat steps 4 and 5 for all storage controllers with “Authentication Failure” status.

After the discovery process is complete, perform the following:

- Use VSC to configure ESXi host settings for hosts that display the Alert icon in the Adapter Settings

column, the MPIO Settings column, or the NFS Settings column.

- Provide the storage system credentials.

## Refresh the storage system display

You can use the update feature that is provided by ONTAP® tools for VMware vSphere to refresh the information about storage systems and to force Virtual Storage Console (VSC) to discover storage systems.

### About this task

The “refresh” option is useful if you changed the default credentials for the storage systems after receiving an authentication error. You should always perform an update operation if you changed the storage system credentials after the storage system reported an “Authentication Failure Status”. During the update operation, VSC tries to connect to the storage system by using the new credentials.

Depending on your system setup, this task can take a long time to complete.

### Steps

1. On the VMware vSphere Client Home page, click **Storage Systems**.
2. Start the update:

If this location is...	Click...
Virtual Storage Console	The <b>REDISCOVER ALL</b> icon.
Datacenter	Right-click the datacenter, and then click <b>NetApp VSC &gt; Update Host and Storage Data</b> .

3. In the Update Host and Storage Data dialog box, click **OK**.

The discovery might take few minutes depending on the number of hosts and storage systems in your datacenter. This discovery operation works in the background.

4. Click **OK** in the Success dialog box.

## Configure alarm thresholds

You can use VSC to set alarms to notify you when volume thresholds and aggregate thresholds reach the set limits.

### Steps

1. From the ONTAP tools Home page, click **Settings**.
2. Click **Unified Appliance Settings**.
3. Specify the percent values for the **Nearly full threshold (%)** field and the **Full threshold (%)** field for both the volume alarm thresholds and the aggregate alarm thresholds.

While setting the values, you must keep the following information in mind:

- Clicking **Reset** resets the thresholds to the previous values.

Clicking **Reset** does not reset the thresholds to the default values of 80 percent for “Nearly full” and 90 percent for “Full”.

- There are two ways to set the values:
  - You can use the up and down arrows next to the values to adjust the threshold values.
  - You can slide the arrows on the track bar below the values to adjust the threshold values.
- The lowest value that you can set for the **Full threshold (%)** field for volumes and aggregates is 6 percent.

4. After specifying the required values, click **Apply**.

You must click **Apply** for both volume alarm and aggregate alarm.

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