Add an NFS volume to an NFS-enabled SVM

System Manager Classic

NetApp
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Adding an NFS volume to an NFS-enabled SVM involves creating and configuring a volume, creating an export policy, and verifying access from a UNIX administration host. You can then configure NFS client access.

Before you begin

NFS must be completely set up on the SVM.

Create and configure a volume

You must create a FlexVol volume to contain your data. You can optionally change the volume's default security style, which is inherited from the security style of the root volume. You can also optionally change the volume's default location in the namespace, which is at the root volume of the storage virtual machine (SVM).

Steps

1. Navigate to the **Volumes** window.
2. Click **Create** > **Create FlexVol**.

   The Create Volume dialog box is displayed.

3. If you want to change the default name, which ends in a date and time stamp, specify a new name, such as `vol1`.
4. Select an aggregate for the volume.
5. Specify the size of the volume.
6. Click **Create**.

   Any new volume created in System Manager is mounted by default at the root volume using the volume name as the junction name. NFS clients use the junction path and the junction name when mounting the volume.

7. If you do not want the volume to be located at the root of the SVM, modify the place of the new volume in the existing namespace:

   a. Navigate to the **Namespace** window.
   b. Select the **SVM** from the drop-down menu.
   c. Click **Mount**.
   d. In the **Mount Volume** dialog box, specify the volume, the name of its junction path, and the junction path on which you want the volume mounted.
   e. Verify the new junction path in the **Namespace** window.

   If you want to organize certain volumes under a main volume named "data", you can move the new volume "vol1" from the root volume to the "data" volume.

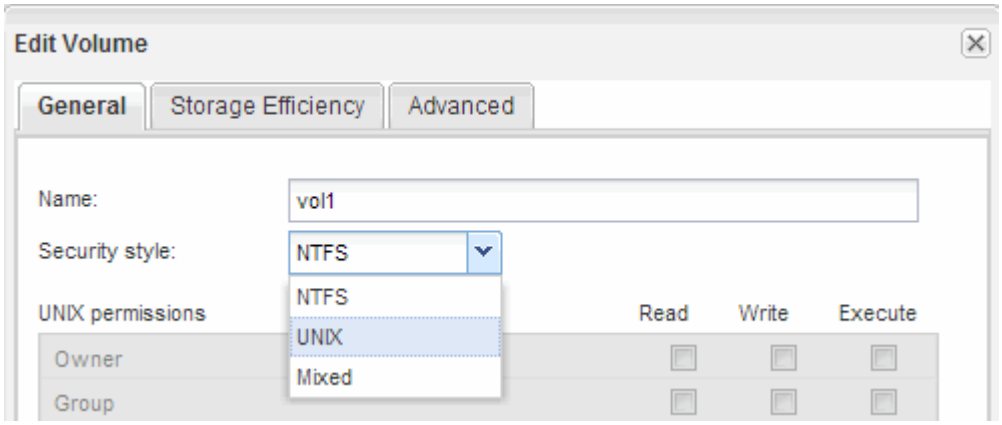
   + image::../media/namespace_1_before_nfs.gif[This graphic is described by the surrounding text.]

8. Review the volume's security style and change it, if necessary:

a. In the **Volume** window, select the volume you just created, and click **Edit**.

   The Edit Volume dialog box is displayed, showing the volume's current security style, which is inherited from the security style of the SVM root volume.

b. Make sure the security style is UNIX.



Create an export policy for the volume

Before any NFS clients can access a volume, you must create an export policy for the volume, add a rule that permits access by an administration host, and apply the new export policy to the volume.

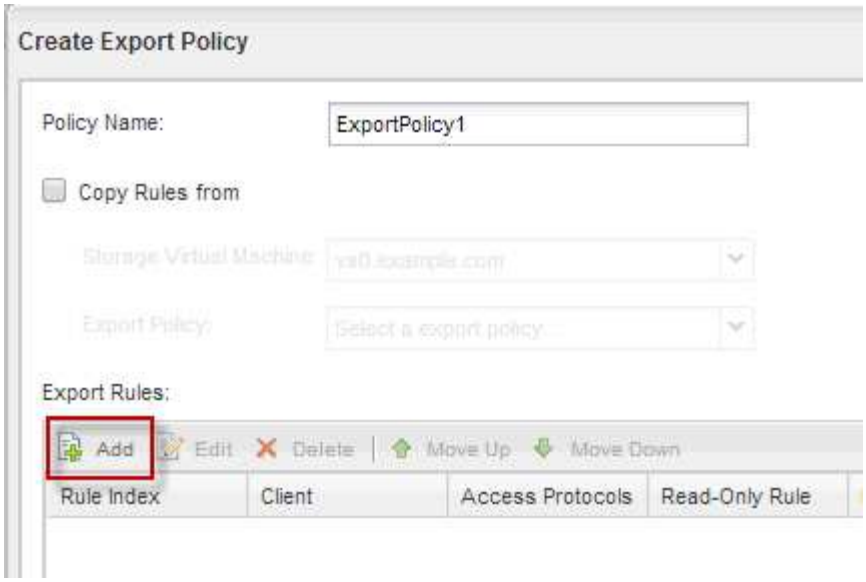
Steps

1. Navigate to the **SVMs** window.
2. Click the **SVM Settings** tab.
3. Create a new export policy:

   a. In the **Policies** pane, click **Export Policies** and then click **Create**.

   b. In the **Create Export Policy** window, specify a policy name.

   c. Under **Export Rules**, click **Add** to add a rule to the new policy.

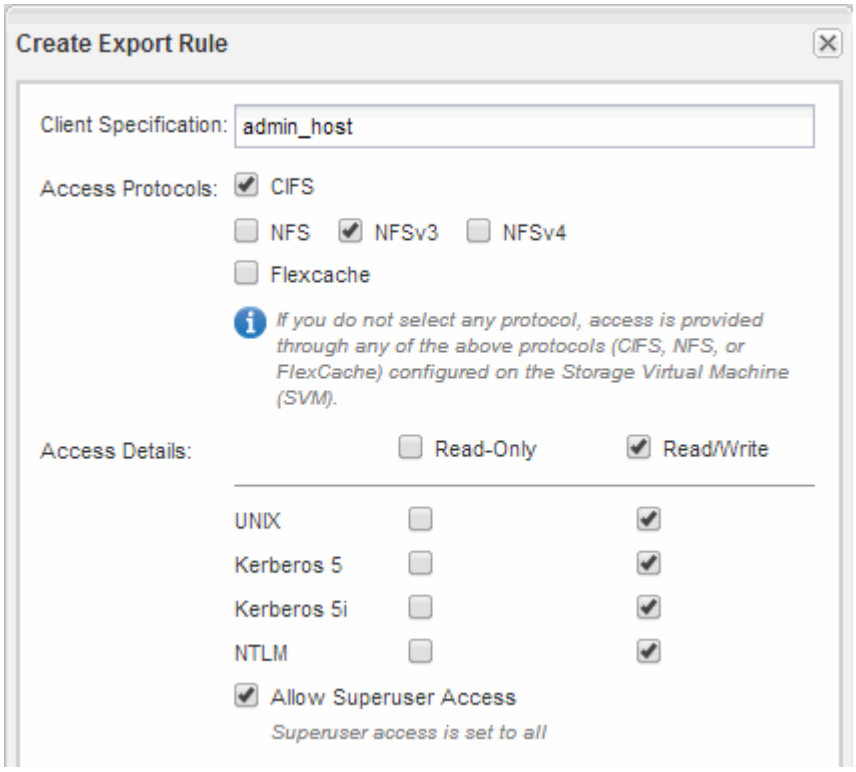


4. In the **Create Export Rule** dialog box, create a rule that allows an administrator full access to the export through all protocols:

   a. Specify the IP address or client name, such as admin_host, from which the exported volume will be administered.

   b. Select **NFSv3**.

   c. Ensure that all **Read/Write** access details are selected, as well as **Allow Superuser Access**.



   d. Click **OK** and then click **Create**.

   The new export policy is created, along with its new rule.

5. Apply the new export policy to the new volume so that the administrator host can access the volume:

a. Navigate to the **Namespace** window.
b. Select the volume and click **Change Export Policy**.
c. Select the new policy and click **Change**.

Related information

Verifying NFS access from a UNIX administration host

Verify NFS access from a UNIX administration host

After you configure NFS access to storage virtual machine (SVM), you should verify the configuration by logging in to an NFS administration host and reading data from and writing data to the SVM.

Before you begin

- The client system must have an IP address that is allowed by the export rule you specified earlier.
- You must have the login information for the root user.

Steps

1. Log in as the root user to the client system.
2. Enter `cd /mnt/` to change the directory to the mount folder.
3. Create and mount a new folder using the IP address of the SVM:
   a. Enter `mkdir /mnt/folder` to create a new folder.
   b. Enter `mount -t nfs -o nfsvers=3,hard IPAddress:/volume_name /mnt/folder` to mount the volume at this new directory.
   c. Enter `cd folder` to change the directory to the new folder.

   The following commands create a folder named test1, mount the vol1 volume at the 192.0.2.130 IP address on the test1 mount folder, and change to the new test1 directory:

   ```
   host# mkdir /mnt/test1
   host# mount -t nfs -o nfsvers=3,hard 192.0.2.130:/vol1 /mnt/test1
   host# cd /mnt/test1
   ```

4. Create a new file, verify that it exists, and write text to it:
   a. Enter `touch filename` to create a test file.
   b. Enter `ls -l filename` to verify that the file exists.
   c. Enter `cat >filename`, type some text, and then press Ctrl+D to write text to the test file.
   d. Enter `cat filename` to display the content of the test file.
   e. Enter `rm filename` to remove the test file.
   f. Enter `cd ..` to return to the parent directory.

```
host# touch myfile1
host# ls -l myfile1
-rw-r--r-- 1 root root 0 Sep 18 15:58 myfile1
host# cat >myfile1
This text inside the first file
host# cat myfile1
This text inside the first file
host# rm -r myfile1
host# cd ..
```

Results

You have confirmed that you have enabled NFS access to the SVM.

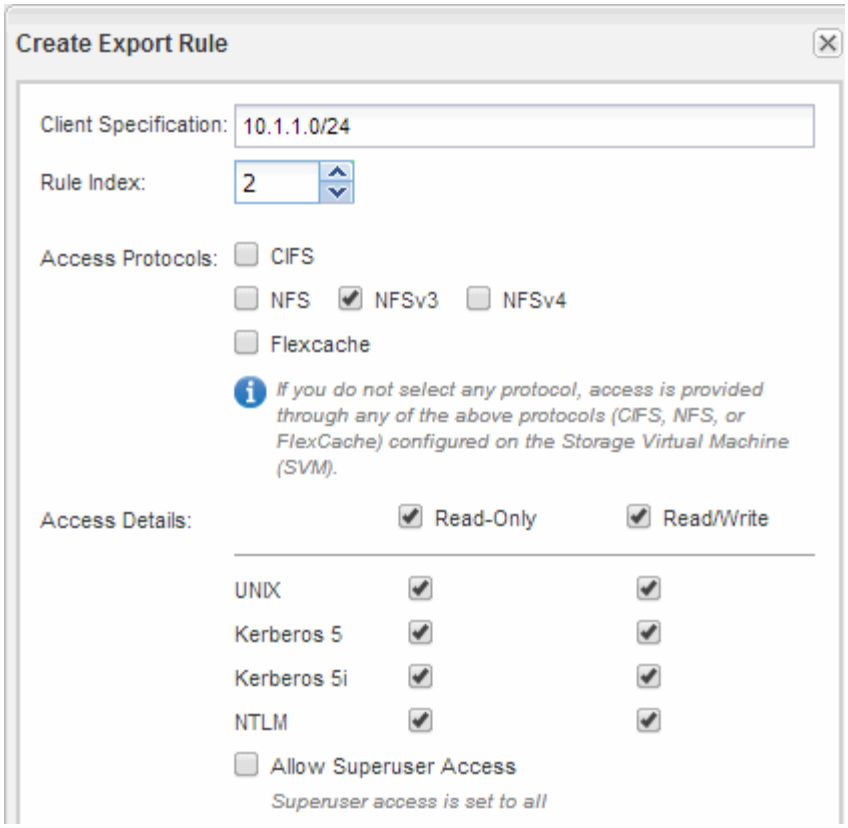
Configure and verify NFS client access (Add an NFS volume to an NFS-enabled SVM)

When you are ready, you can give select clients access to the share by setting UNIX file permissions on a UNIX administration host and adding an export rule in System Manager. Then you should test that the affected users or groups can access the volume.

Steps

1. Decide which clients and users or groups will be given access to the share.
2. On a UNIX administration host, use the root user to set UNIX ownership and permissions on the volume.
3. In System Manager, add rules to the export policy to permit NFS clients to access the share.
   a. Select the storage virtual machine (SVM), and click **SVM Settings**.
   b. In the **Policies** pane, click **Export Policies**.
   c. Select the export policy with the same name as the volume.
   d. In the **Export Rules** tab, click **Add**, and specify a set of clients.
   e. Select **2** for the **Rule Index** so that this rule executes after the rule that allows access to the administration host.
   f. Select **NFSv3**.
   g. Specify the access details that you want, and click **OK.**

      You can give full read/write access to clients by typing the subnet `10.1.1.0/24` as the **Client Specification**, and selecting all the access check boxes except **Allow Superuser Access**.



4. On a UNIX client, log in as one of the users who now has access to the volume, and verify that you can mount the volume and create a file.