



# **Decide where to provision the volume**

## **System Manager Classic**

NetApp  
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# Decide where to provision the volume

Before you provision a volume to contain your LUNs, you need to decide whether to add the volume to an existing storage virtual machine (SVM) or to create a new SVM for the volume. You might also need to configure iSCSI on an existing SVM.

## About this task

If an existing SVM is already configured with the needed protocols and has LIFs that can be accessed from the host, it is easier to use the existing SVM.

You can create a new SVM to separate data or administration from other users of the storage cluster. There is no advantage to using separate SVMs just to separate different protocols.

## Procedure

- If you want to provision volumes on an SVM that is already configured for iSCSI, you must verify that the iSCSI service is running and then create a LUN on the SVM.

[Verifying that the iSCSI service is running on an existing SVM](#)

[Creating a LUN](#)

- If you want to provision volumes on an existing SVM that has iSCSI enabled but not configured, configure iSCSI on the existing SVM.

[Configuring iSCSI on an existing SVM](#)

This is the case when you did not follow this procedure to create the SVM while configuring a different protocol.

- If you want to provision volumes on a new SVM, create the SVM.

[Creating a new SVM](#)

## Verify that the iSCSI service is running on an existing SVM

If you choose to use an existing storage virtual machine (SVM), you must verify that the iSCSI service is running on the SVM.

### Before you begin

You must have selected an existing SVM on which you plan to create a new LUN.

### Steps

1. Navigate to the **SVMs** window.
2. Click the **SVM Settings** tab.
3. In the **Protocols** pane, click **iSCSI**.
4. Verify that the iSCSI service is running.



5. Record the iSCSI interfaces listed for the SVM.

## What to do next

If the iSCSI service is not running, start the iSCSI service or create a new SVM.

If there are fewer than two iSCSI interfaces per node, update the iSCSI configuration on the SVM or create a new SVM for iSCSI.

## Create a LUN

You use the Create LUN wizard to create a LUN. The wizard also creates the igroup and maps the LUN to the igroup, which enables the specified host to access the LUN.

### Before you begin

- There must be an aggregate with enough free space to contain the LUN.
- There must be a storage virtual machine (SVM) with the iSCSI protocol enabled and the appropriate logical interfaces (LIFs) created.
- You must have recorded the iSCSI initiator node name of the host.

LUNs are mapped to a subset of the initiators in the igroup to limit the number of paths from the host to the LUN.

- By default, ONTAP uses Selective LUN Map (SLM) to make the LUN accessible only through paths on the node owning the LUN and its high-availability (HA) partner.
- You still must configure all of the iSCSI LIFs on every node for LUN mobility in case the LUN is moved to another node in the cluster.
- When moving a volume or a LUN, you must modify the SLM reporting-nodes list before moving.

### About this task

If your organization has a naming convention, you should use names for the LUN, volume, and so on that fit your convention. Otherwise, you should accept the default names.

### Steps

1. Navigate to the **LUNs** window.
2. Click **Create**.

3. Browse and select an SVM in which you want to create the LUNs.

The Create LUN Wizard is displayed.

4. On the **General Properties** page, select the LUN type **Windows 2008 or later** for LUNs used directly by the Windows host, or select **Hyper-V** for LUNs containing virtual hard disks (VHDs) for Hyper-V virtual machines.

Leave the **Thin Provisioned** check box unselected.



You can specify the size of the LUN. Storage will be optimized according to the type selected.

Type:

Size:

Thin Provisioned

5. On the **LUN Container** page, select an existing FlexVol volume.

You must ensure that there is enough space in the volume. If sufficient space is not available in the existing volumes, you can create a new volume.

6. On the **Initiators Mapping** page, click **Add Initiator Group**, enter the required information on the **General** tab, and then on the **Initiators** tab, enter the iSCSI initiator node name of the host that you recorded.
7. Confirm the details, and then click **Finish** to complete the wizard.

## Related information

[System administration](#)

# Configure iSCSI on an existing SVM

You can configure iSCSI on an existing storage virtual machine (SVM) and create a LUN and its containing volume with a single wizard. The iSCSI protocol must already be enabled but not configured on the SVM. This information is intended for SVMs for which you are configuring multiple protocols, but have not yet configured iSCSI.

## Before you begin

You must have enough network addresses available to create two LIFs for each node.

## About this task

LUNs are mapped to a subset of the initiators in the igroup to limit the number of paths from the host to the LUN.

- ONTAP uses Selective LUN Map (SLM) to make the LUN accessible only through paths on the node owning the LUN and its HA partner.
- You still must configure all of the iSCSI LIFs on every node for LUN mobility in case the LUN is moved to another node in the cluster.
- You must modify the SLM reporting-nodes list before moving a volume or a LUN.

## Steps

1. Navigate to the **SVMs** window.
2. Select the SVM that you want to configure.
3. In the **SVMDetails** pane, verify that **iSCSI** is displayed with a gray background, which indicates that the protocol is enabled but not fully configured.

If **iSCSI** is displayed with a green background, the SVM is already configured.



4. Click the **iSCSI** protocol link with the gray background.

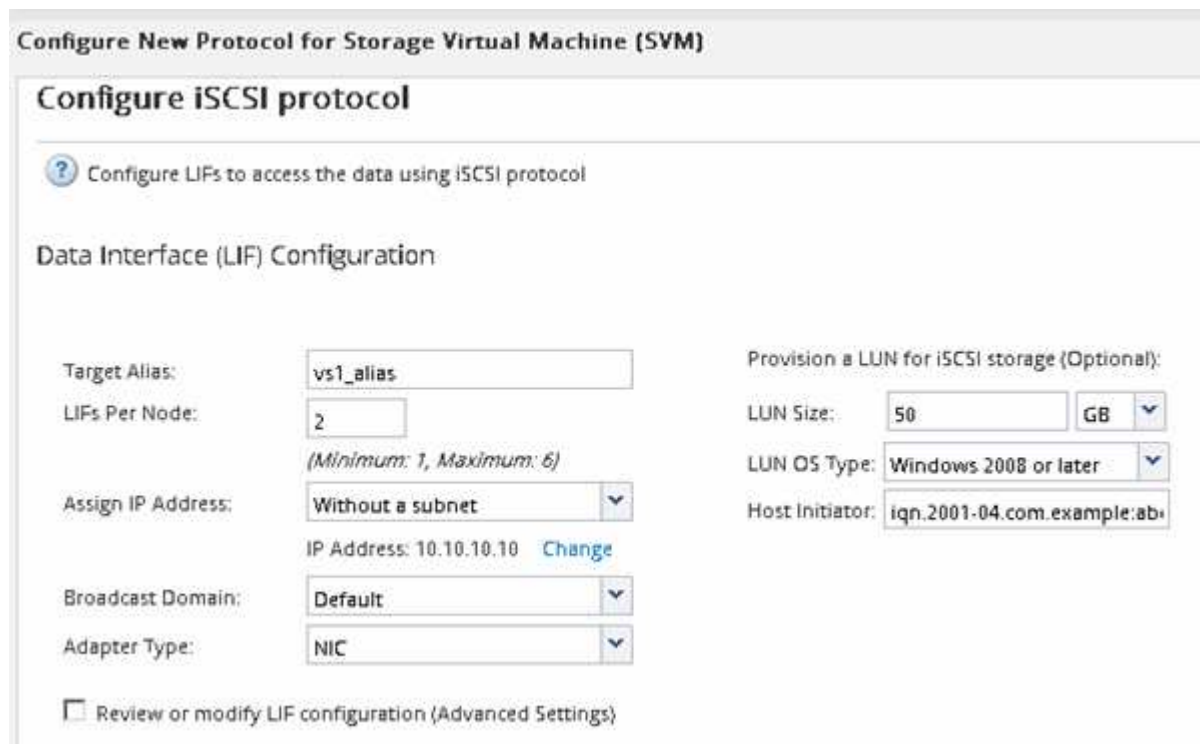
The Configure iSCSI Protocol window is displayed.

5. Configure the iSCSI service and LIFs from the **Configure iSCSI protocol** page:

- a. Enter a target alias name.
- b. Enter **2** in the **LIFs per node** field.

Two LIFs are required for each node to ensure availability and data mobility.

- c. Assign IP addresses for the LIFs either with a subnet or without a subnet.
- d. In the **Provision a LUN for iSCSI storage** area, enter the desired LUN size, host type, and iSCSI initiator name of the host.
- e. Click **Submit & Close**.



The screenshot shows the 'Configure iSCSI protocol' window. It has a title bar 'Configure New Protocol for Storage Virtual Machine (SVM)' and a sub-header 'Configure iSCSI protocol'. Below the sub-header is a help icon and the text 'Configure LIFs to access the data using iSCSI protocol'. The main section is 'Data Interface (LIF) Configuration'. It contains several fields: 'Target Alias' (vs1\_alias), 'LIFs Per Node' (2, with a note '(Minimum: 1, Maximum: 6)'), 'Assign IP Address' (Without a subnet, with a dropdown arrow), 'Broadcast Domain' (Default, with a dropdown arrow), 'Adapter Type' (NIC, with a dropdown arrow), and 'Provision a LUN for iSCSI storage (Optional)'. This section includes 'LUN Size' (50 GB), 'LUN OS Type' (Windows 2008 or later), and 'Host Initiator' (iqn.2001-04.com.example:ab). At the bottom, there is a checkbox 'Review or modify LIF configuration (Advanced Settings)' which is currently unchecked.

6. Review the **Summary** page, record the LIF information, and then click **OK**.

# Create a new SVM

The storage virtual machine (SVM) provides the iSCSI target through which a host accesses LUNs. When you create the SVM, you also create logical interfaces (LIFs) and the LUN and its containing volume. You can create an SVM to separate the data and administration functions of a user from those of the other users in a cluster.

## Before you begin

- You must have enough network addresses available to create two LIFs for each node.

## About this task

LUNs are mapped to a subset of the initiators in the igroup to limit the number of paths from the host to the LUN.

- By default, ONTAP uses Selective LUN Map (SLM) to make the LUN accessible only through paths on the node owning the LUN and its HA partner.
- You still must configure all of the iSCSI LIFs on every node for LUN mobility in case the LUN is moved to another node in the cluster.
- When moving a volume or a LUN, you must modify the SLM-reporting-nodes list before moving.

## Steps

1. Navigate to the **SVMs** window.
2. Click **Create**.
3. In the **Storage Virtual Machine (SVM) Setup** window, create the SVM:

**Storage Virtual Machine (SVM) Setup**

Enter SVM basic details

### SVM Details

? Specify a unique name and the data protocols for the SVM

SVM Name:

? IPspace:

? Data Protocols:  CIFS  NFS  iSCSI  FC/FCoE  NVMe

? Default Language:

The language of the SVM specifies the default language encoding setting for the SVM and its volumes. Using a setting that incorporates UTF-8 character encoding is recommended.

? Security Style:

Root Aggregate:

- a. Specify a unique name for the SVM.

The name must either be a fully qualified domain name (FQDN) or follow another convention that

ensures unique names across a cluster.

- b. Select the IPspace that the SVM will belong to.

If the cluster does not use multiple IPspaces, the “Default” IPspace is used.

- c. Keep the default volume type selection.

Only FlexVol volumes are supported with SAN protocols.

- d. Select all of the protocols that you have licenses for and that you might use on the SVM, even if you do not want to configure all of the protocols immediately.

Selecting both NFS and CIFS when you create the SVM enables these two protocols to share the same LIFs. Adding these protocols later does not allow them to share LIFs.

If CIFS is one of the protocols you selected, then the security style is set to NTFS. Otherwise, the security style is set to UNIX.

- e. Keep the default language setting C.UTF-8.

- f. Select the desired root aggregate to contain the SVM root volume.

The aggregate for the data volume is selected separately in a later step.

- g. Click **Submit & Continue**.

The SVM is created, but protocols are not yet configured.


4. If the **Configure CIFS/NFS protocol** page appears because you enabled CIFS or NFS, click **Skip** and then configure CIFS or NFS later.
5. Configure the iSCSI service and create LIFs, and the LUN and its containing volume from the **Configure iSCSI protocol** page:
  - a. **Optional:** Enter a target alias name.
  - b. Assign IP address for the LIFs either by using a subnet or without a subnet.
  - c. Enter **2** in the **LIFs per node** field.

Two LIFs are required for each node to ensure availability and data mobility.

- d. In the **Provision a LUN for iSCSI storage** area, enter the desired LUN size, host type, and iSCSI initiator name of the host.
- e. Click **Submit & Continue**.



## Configure iSCSI protocol

 Configure LIFs to access the data using iSCSI protocol

### Data Interface (LIF) Configuration

Target Alias:	<input type="text" value="vs1_alias"/>	Provision a LUN for iSCSI storage (Optional):
LIFs Per Node:	<input type="text" value="2"/> <i>(Minimum: 1, Maximum: 6)</i>	LUN Size: <input type="text" value="50"/> <input type="text" value="GB"/> <input type="button" value="v"/>
Assign IP Address:	<input type="text" value="Without a subnet"/> <input type="button" value="v"/> IP Address: 10.10.10.10 <a href="#">Change</a>	LUN OS Type: <input type="text" value="Windows 2008 or later"/> <input type="button" value="v"/>
Broadcast Domain:	<input type="text" value="Default"/> <input type="button" value="v"/>	Host Initiator: <input type="text" value="iqn.2001-04.com.example:ab"/>
Adapter Type:	<input type="text" value="NIC"/> <input type="button" value="v"/>	

Review or modify LIF configuration (Advanced Settings)

6. If the **Configure FC/FCoE protocol** page appears because you enabled FC, click **Skip** and then configure FC later.
7. When the **SVM Administration** appears, configure or defer configuring a separate administrator for this SVM:
  - Click **Skip** and configure an administrator later if desired.
  - Enter the requested information, and then click **Submit & Continue**.
8. Review the **Summary** page, record the LIF information, and then click **OK**.

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