



# **Set up NVMe**

## System Manager Classic

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# Table of Contents

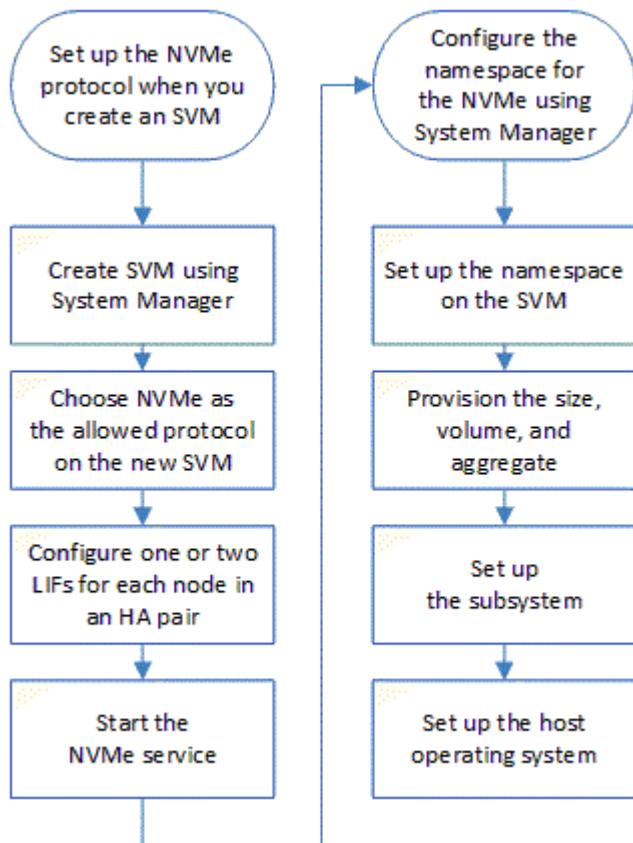
Set up NVMe with System Manager - ONTAP 9.7 and earlier . . . . .	1
Create an NVMe namespace with System Manager - ONTAP 9.7 and earlier . . . . .	1
Edit an NVMe namespace with System Manager - ONTAP 9.7 and earlier . . . . .	2
Clone an NVMe namespace with System Manager - ONTAP 9.7 and earlier . . . . .	3
Start and stop the NVMe service with System Manager - ONTAP 9.7 and earlier . . . . .	3
Manage NVMe subsystems with System Manager - ONTAP 9.7 and earlier . . . . .	4
Create NVMe subsystems . . . . .	4
Edit NVMe subsystems details . . . . .	4
Delete an NVMe subsystem . . . . .	5
NVMe Subsystems window . . . . .	5

# Set up NVMe with System Manager - ONTAP 9.7 and earlier

You can use ONTAP System Manager classic (available in ONTAP 9.7 and earlier) to set up the NVMe protocol for an SVM. When the NVMe protocol is enabled on the SVM, you can then provision a namespace or namespaces and assign them to a host and a subsystem.

Beginning with ONTAP 9.5, you must configure at least one NVMe LIF for each node in an HA pair that uses the NVMe protocol. You can also define a maximum of two NVMe LIFs per node. You configure the NVMe LIFs when you create or edit the SVM settings using System Manager.

The following illustration shows the workflow for setting up NVMe:



## Create an NVMe namespace with System Manager - ONTAP 9.7 and earlier

You can use ONTAP System Manager classic (available in ONTAP 9.7 and earlier) to create one or more NVMe namespaces and connect each to a host or set of hosts in a storage virtual machine (SVM). The NVMe namespace is a quantity of memory that can be formatted into logical blocks. Each namespace can be mapped to an NVMe subsystem.

**Before you begin**

The SVM must already be configured with the NVMe protocol. To map a namespace, at least one LIF with the data protocol NVMe must exist in the node that owns the namespace.

### Steps

1. Click **Storage > NVMe > NVMe namespaces**.
2. Select the SVM that will contain the namespace.
3. Ensure that at least one NVMe LIF is configured for each node of the HA pair. You can create a maximum of two NVMe LIFs per node.
4. Configure the size of the namespace (between 1MB and 16TB).
5. Enter the block size.

For System Manager 9.5, the block size defaults to 4 KB, and this field is not shown.

For System Manager 9.6, you can specify a block size of 4 KB or 512 Bytes.

6. Select the existing volume or create a new volume by choosing the aggregate.

Click on the + symbol to set up additional namespaces (max 250) within the SVM.

7. Select the NVMe subsystem that will be associated with this namespace.

You can choose from the following options:

- None: No subsystems are mapped.
- Use an existing subsystem: The subsystems listed are based on the selected SVM.
- Create a new subsystem: You can choose to create a new subsystem and map to all the new namespaces.

8. Select the host operating system.

9. Click **Submit**.

### Related information

[NVMe namespaces window](#)

## Edit an NVMe namespace with System Manager - ONTAP 9.7 and earlier

You can use ONTAP System Manager Classic (available in ONTAP 9.7 and earlier) to edit the namespace by changing the subsystem that the namespace is mapped to.

### About this task

You can only modify the NVMe subsystem settings in this window; you cannot edit the other namespace details.

### Steps

1. Click **NVMe > NVMe namespaces**.
2. In the **NVMe namespaces window**, select the namespace you want to edit.
3. Select a subsystem option:

- None: Choosing this option unmaps the existing subsystem mapping for this namespace only. This option is preselected if no subsystem mapping is present for the selected namespace.
- Use an existing subsystem: This option is preselected if subsystem-to-namespace mapping is present. Choosing a different subsystem maps the new subsystem by unmapping the previously mapped subsystem.

## Clone an NVMe namespace with System Manager - ONTAP 9.7 and earlier

You can use ONTAP System Manager classic (available in ONTAP 9.7 and earlier) to quickly create another namespace of the same configuration by choosing to clone a namespace. You can map the newly cloned namespace to another host NQN.

### Before you begin

You must have a FlexClone license to clone a namespace.

### About this task

You can clone a namespace with the selected host mapping and associate it with another subsystem.

### Steps

1. Click **NVMe > NVMe namespaces**.
2. In the **NVMe namespaces window**, select the namespace you want to clone.
3. You can rename the cloned namespace if you need a specific name but it is not required.

The dialog provides a default name of the namespace to-be-cloned.

4. Modify the subsystem mapping for the cloned namespace.
5. Click **OK**.

The online, mapped namespace is cloned inside the same SVM with a different name. Host mapping will not be cloned.

## Start and stop the NVMe service with System Manager - ONTAP 9.7 and earlier

You can use ONTAP System Manager classic (available in ONTAP 9.7 and earlier) to start the NVMe service to bring the adapters online. The NVMe service enables you to manage NVMe adapters for use with namespaces. You can stop the NVMe service to take the NVMe adapters offline and to disable access to the namespaces.

### Before you begin

NVMe capable adapters must be present before you start the NVMe service.

### Steps

1. Click **Storage > SVMs**.
2. Select the SVM, and then click **SVM settings**.

3. In the **Protocols** menu, click **NVMe**.
4. Click **Start** or **Stop** service as required.

## Manage NVMe subsystems with System Manager - ONTAP 9.7 and earlier

You can use ONTAP System Manager classic (available in ONTAP 9.7 and earlier) to create and manage an NVMe subsystem. You can associate the NVMe subsystem with different hosts and namespaces within the vserver. Also, each vserver can support more than one NVMe subsystem. However, you cannot configure a NVMe subsystem to be used on multiple vservers.

### Create NVMe subsystems

You can use System Manager to create an NVMe subsystem.

#### Steps

1. Click **Create** in the **NVMe Subsystems** window.
2. Provide entries in the **NVMe Subsystems: Create** window for the following fields:
  - **SVM**

From the drop-down menu, select the SVM on which you want to create the subsystem.

- **Name**

Enter a name for the subsystem. The subsystem name cannot already exist in the SVM. The name is case-sensitive and is limited to 96 characters. Special characters are allowed.

- **Host OS**

From the drop-down menu, select the type of Host OS of the subsystem.

- **Host NQN**

Enter the Host NQN attached to the controller. You can enter more than one Host NQN by separating them with commas.

3. Click **Save**.

The NVMe subsystem is created, and the NVMe Subsystems window is displayed.

### Edit NVMe subsystems details

You can use System Manager to edit the details of an NVMe subsystem.

#### Steps

1. Find the NVMe subsystem you want to edit in the **NVMe Subsystem** window.
2. Check the box to the left of the name of the subsystem you want to edit.
3. Click **Edit**.

The current details of the NVMe subsystem are displayed in the NVMe Subsystems: Editwindow.

4. You can modify only the information in the **Host NQN** field.

- **Host NQN**

Modify the Host NQN attached to the controller. You can enter more than one Host NQN by separating them with commas.

The **Associated NVMe Namespaces** table displays below the Host NQN field. For each namespace, that table lists the namespace path and namespace ID.

5. Click **Save**.

The NVMe subsystem details are updated, and the NVMe Subsystems window is displayed.

## Delete an NVMe subsystem

You can use System Manager to delete an NVMe subsystem from a cluster.

### About this task

The following actions occur when you delete an NVMe subsystem:

- If the NVMe subsystem has configured hosts, then mapped hosts will be removed.
- If the NVMe subsystem has mapped namespaces, then they will be unmapped.

### Steps

1. Find the NVMe subsystem you want to delete on the **NVMe Subsystem** window.
2. Check the box to the left of the name of the subsystem you want to delete.
3. Click **Delete**.

A Warning message is displayed.

4. Click the **Delete the NVMe Subsystem** check box to confirm the deletion, then click **Yes**.

The NVMe subsystem is deleted from the cluster, and the NVMe Subsystems window is displayed.

## NVMe Subsystems window

The NVMe Subsystems window displays by default an inventory list of NVMe subsystems in a cluster. You can filter the list to display only subsystems that are specific to an SVM. The window also enables you to create, edit, or delete NVMe subsystems. You can access this window by selecting **Storage > NVMe > Subsystems**.

- [NVMe Subsystems table](#)
- [Toolbar](#)

### NVMe Subsystems table

The NVMe Subsystems table lists the inventory of NVMe subsystems in a cluster. You can refine the list by using the drop-down menu in the **SVM** field to select an SVM to display only the NVMe subsystems associated with that SVM. The **Search** field and **Filtering** drop-down menu enable you to further customize the list.

The NVMe Subsystems table contains the following columns:

- **(check box)**

Enables you to specify on which subsystems you want to perform actions.

Click the check box to select the subsystem, then click the action in the toolbar that you want to perform.

- **Name**

Displays the name of the subsystem.

You can search for a subsystem by entering its name in the **Search** field.

- **Host OS**

Displays the name of the host OS associated with the subsystem.

- **Host NQN**

Displays the NVMe Qualified Name (NQN) attached to the controller. If multiple NQNs are displayed, they are separated by commas.

- **Associated NVMe Namespaces**

Displays the number of the NVM namespaces associated with the subsystem. You can hover over the number to display the associated namespaces paths. Click on a path to display the Namespace Details window.

## Toolbar

The toolbar is located above the column header. You can use the fields and buttons in the toolbar to perform various actions.

- **Search**

Enables you to search on values that might be found in the **Name** column.

- **Filtering**

Allows you to select from a drop-down menu that lists various methods of filtering the list.

- **Create**

Opens the Create NVMe Subsystem dialog box, which enables you to create an NVMe subsystem.

- **Edit**

Opens the Edit NVMe Subsystem dialog box, which enables you to edit an existing NVMe subsystem.

- **Delete**

Opens the Delete NVMe Subsystem confirmation dialog box, which enables you to delete an existing NVMe subsystem.

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