



## **vserver nvme commands**

### **ONTAP 9.12.1 commands**

NetApp  
December 14, 2022

# Table of Contents

- vserver nvme commands . . . . . 1
  - vserver nvme create . . . . . 1
  - vserver nvme delete . . . . . 1
  - vserver nvme modify . . . . . 2
  - vserver nvme show-discovery-controller . . . . . 2
  - vserver nvme show-interface . . . . . 4
  - vserver nvme show . . . . . 5
  - vserver nvme feature show . . . . . 6
  - vserver nvme namespace convert-from-lun . . . . . 7
  - vserver nvme namespace create . . . . . 7
  - vserver nvme namespace delete . . . . . 9
  - vserver nvme namespace modify . . . . . 9
  - vserver nvme namespace show . . . . . 10
  - vserver nvme subsystem create . . . . . 13
  - vserver nvme subsystem delete . . . . . 14
  - vserver nvme subsystem modify . . . . . 14
  - vserver nvme subsystem show . . . . . 15
  - vserver nvme subsystem controller show . . . . . 16
  - vserver nvme subsystem host add . . . . . 19
  - vserver nvme subsystem host remove . . . . . 20
  - vserver nvme subsystem host show . . . . . 20
  - vserver nvme subsystem map add . . . . . 22
  - vserver nvme subsystem map remove . . . . . 22
  - vserver nvme subsystem map show . . . . . 23

# vserver nvme commands

## vserver nvme create

Create NVMe service configuration

**Availability:** This command is available to *cluster* and *Vserver* administrators at the *admin* privilege level.

### Description

The `vserver nvme create` command creates an NVMe service for a Vserver.

When you create the NVMe service on a Vserver, the Vserver must have only *nvme* in the allowed-protocols list.

When you create the NVMe service on a Vserver, the administrative status of the service is *up* by default.

### Parameters

**-vserver <Vserver Name> - Vserver Name**

Specifies the Vserver for the NVMe service.

**[-status-admin {down|up}] - Administrative Status**

Specifies the configured administrative status of a service.

### Examples

```
cluster1::*> vserver nvme create -vserver vs_1
```

Creates an NVMe service on Vserver *vs\_1*.

## vserver nvme delete

Delete NVMe service configuration

**Availability:** This command is available to *cluster* and *Vserver* administrators at the *admin* privilege level.

### Description

The `vserver nvme delete` command deletes an NVMe service of a Vserver. Before you can delete an NVMe service, the administrative status must be *down*. Use the [vserver nvme modify](#) command to change the administrative status.

### Parameters

**-vserver <Vserver Name> - Vserver Name**

Specifies the Vserver for the NVMe service.

## Examples

```
cluster1::*> vserver nvme delete -vserver vs_1
```

Deletes the NVMe service on Vserver *vs\_1*.

## Related Links

- [vserver nvme modify](#)

## vserver nvme modify

Modify NVMe service configuration

**Availability:** This command is available to *cluster* and *Vserver* administrators at the *admin* privilege level.

## Description

The `vserver nvme modify` command modifies an NVMe service configuration on a Vserver.

## Parameters

**-vserver <Vserver Name> - Vserver Name**

Specifies the Vserver for the NVMe service.

**[-status-admin {down|up}] - Administrative Status**

Specifies the configured administrative status of a service. If you set this parameter to *down*, the Vserver will not serve NVMe traffic.

## Examples

```
cluster1::*> vserver nvme modify -vserver vs_1 -status-admin down
```

Sets the administrative status of the NVMe service on Vserver *vs\_1* to *down*.

## vserver nvme show-discovery-controller

Display active NVMe discovery controllers

**Availability:** This command is available to *cluster* and *Vserver* administrators at the *admin* privilege level.

## Description

The `vserver nvme show-discovery-controller` command displays information for established NVMe controllers on the discovery subsystem. An NVMe controller is established upon each host connection to the discovery subsystem.

## Parameters

**{ [-fields <fieldname>,...]**

If you specify the `-fields <fieldname>`, ... parameter, the command output also includes the specified field or fields. You can use `'-fields ?'` to display the fields to specify.

**| [-instance ] }**

If you specify the `-instance` parameter, the command displays detailed information about all fields.

**[-vserver <Vserver Name>] - Vserver Name**

Use this parameter to display the NVMe controllers that match the Vserver that you specify.

**[-controller-id <Hex 16bit Integer>] - Controller ID**

Use this parameter to display the NVMe controllers that match the controller ID that you specify. The controller ID is the identifier assigned by the NVMe subsystem upon host login and controller creation.

**[-discovery-nqn <text>] - Discovery Subsystem NQN**

Use this parameter to display the NVMe controllers that match the discovery subsystem NQN that you specify.

**[-lif <text>] - Logical Interface**

Use this parameter to display the NVMe controllers that match the LIF that you specify.

**[-node <nodename>] - Node**

Use this parameter to display the NVMe controllers that match the cluster node that you specify.

**[-host-nqn <text>] - Host NQN**

Use this parameter to display the NVMe controllers that match the host NQN that you specify. The host NQN is the NVMe identifier assigned to a specific host.

**[-transport-protocol {fc-nvme|nvme-tcp}] - Transport Protocol**

Use this parameter to display the NVMe controllers that match the transport protocol that you specify.

**[-initiator-transport-address <text>] - Initiator Transport Address**

Use this parameter to display the NVMe controllers that match the initiator transport address that you specify. The initiator transport address format depends on the transport protocol in use.

**[-trsvcid <text>] - Transport Service Identifier**

Use this parameter to display the NVMe controllers that match the transport service identifier that you specify.

**[-host-id <Hex String>] - Host Identifier**

Use this parameter to display the NVMe controllers that match the host identifier that you specify. The host identifier is a 128-bit identifier assigned to a specific host.

**[-admin-queue-depth <integer>] - Admin Queue Depth**

Use this parameter to display the NVMe controllers that match the administrative queue depth that you specify.

### **[-header-digest-enabled {true|false}] - Header Digest Enabled**

Use this parameter to display the NVMe controllers that have header digest enabled.

### **[-data-digest-enabled {true|false}] - Data Digest Enabled**

Use this parameter to display the NVMe controllers that have data digest enabled.

## **Examples**

```
cluster1::*> vserver nvme show-discovery-controller -vserver vs1
Vserver ID      LIF  Host NQN
-----
vs1            0041h node1_e0f
                    nqn.2001-08.example.com:nvme:host1
vs1            0080h node2_e0f
                    nqn.2001-08.example.com:nvme:host2
2 entries were displayed.
```

## **vserver nvme show-interface**

Display the NVMe over Fabrics LIF configuration

**Availability:** This command is available to *cluster* and *Vserver* administrators at the *admin* privilege level.

### **Description**

The `vserver nvme show-interface` command displays the currently available interfaces to the NVMe protocol.

### **Parameters**

**{ [-fields <fieldname>,...]**

If you specify the `-fields <fieldname>`, ... parameter, the command output also includes the specified field or fields. You can use `'-fields ?'` to display the fields to specify.

**| [-instance ] }**

If you specify the `-instance` parameter, the command displays detailed information about all fields.

**[-vserver <Vserver Name>] - Vserver Name**

Use this parameter to display the NVMe interfaces that match the Vserver that you specify.

**[-lif <lif-name>] - Logical Interface**

Use this parameter to display the NVMe interfaces that match the LIF that you specify.

**[-vserver-uuid <UUID>] - Vserver UUID**

Use this parameter to display the NVMe interfaces that match the Vserver UUID that you specify.

**[-home-node <nodename>] - Home Node**

Use this parameter to display the NVMe interfaces that match the home node that you specify.

**[-home-port {<netport>|<ifgrp>}] - Home Port**

Use this parameter to display the NVMe interfaces that match the home port that you specify.

**[-status-admin {up|down}] - Status Admin**

Use this parameter to display the NVMe interfaces that match the administrative status that you specify.

**[-physical-protocol {fibre-channel|ethernet}] - Physical Protocol**

Use this parameter to display the NVMe interfaces that match the physical protocol that you specify.

**[-transport-protocol {fc-nvme|nvme-tcp}] - Transport Protocol**

Use this parameter to display the NVMe interfaces that match the transport protocol that you specify.

**[-transport-address <text>] - Transport Address**

Use this parameter to display the NVMe interfaces that match the transport address that you specify.

**[-comment <text>] - Comment**

Use this parameter to display the NVMe interfaces that match the textual comment that you specify.

**[-fc-wwnn <FC WWN>] - FC WWNN**

Use this parameter to display the NVMe interfaces that match the FC WWNN that you specify.

**[-fc-wwpn <FC WWPN>] - FC WWPNN**

Use this parameter to display the NVMe interfaces that match the FC WWPNN that you specify.

**[-lif-id <integer>] - LIF ID**

Use this parameter to display the NVMe interfaces that match the LIF ID that you specify.

**[-lif-uuid <UUID>] - LIF UUID**

Use this parameter to display the NVMe interfaces that match the LIF UUID that you specify.

## Examples

```

cluster1::*> vserver nvme show-interface
Vserver Logical Interface      Home Node:Port      Transport Protocols
-----
vs_1
      nvme1                node1:1a            fc-nvme
      Transport Address:  nn-0x2000005056b45113:pn-0x2001005056b45113

```

## vserver nvme show

Show NVMe service configuration

**Availability:** This command is available to *cluster* and *Vserver* administrators at the *admin* privilege level.

## Description

The `vserver nvme show` command displays the current status of the NVMe service in a cluster.

## Parameters

**{ [-fields <fieldname>,...]**

If you specify the `-fields <fieldname>, ...` parameter, the command output also includes the specified field or fields. You can use `'-fields ?'` to display the fields to specify.

**| [-instance ] }**

If you specify the `-instance` parameter, the command displays detailed information about all fields.

**[-vserver <Vserver Name>] - Vserver Name**

Use this parameter to display the NVMe services that match the Vserver that you specify.

**[-status-admin {down|up}] - Administrative Status**

Use this parameter to display the NVMe services that match the administrative status that you specify.

**[-discovery-nqn <text>] - Discovery Subsystem NQN**

Use this parameter to display the NVMe services that match the discovery subsystem NQN that you specify.

## Examples

```
cluster1::*> vserver nvme show
Vserver      Status Admin
-----
vs1          up
vs2          up
2 entries were displayed.
```

## vserver nvme feature show

Display NVMe target features

**Availability:** This command is available to *cluster* administrators at the *advanced* privilege level.

## Description

Displays the list of currently enabled NVMe over Fabrics features and limits.

## Examples



```
cluster1::*> vserver nvme feature show
    Enabled Features: nvme, fc-nvme, multi-path, multi-node
Maximum Namespace Size: 15.97TB
    Maximum NSID: 00000200h
    Maximum ANAGRPID: 00000200h
```

## vserver nvme namespace convert-from-lun

Transition an existing LUN into a NVMe namespace

**Availability:** This command is available to *cluster* and *Vserver* administrators at the *admin* privilege level.

### Description

This command transitions an existing LUN in-place into an NVMe namespace within a volume in a Vserver. When performing an in-place transition, the application data remains unchanged and only the metadata gets modified.

When using this command, it is necessary that any existing maps to an lgroup for this LUN be removed first. If any maps exist for the specified LUN, you will receive an error message.

Only LUNs with a zero prefix and suffix size can be transitioned into an NVMe namespace. You will receive an error message if the LUN has a non-zero prefix and/or suffix size.

### Parameters

#### **-vserver <Vserver Name> - Vserver Name**

The name of the Vserver containing the LUN. If only one data Vserver exists, you do not need to specify this parameter.

#### **-lun-path <path> - Path of the LUN**

Specifies the path of the LUN you want to transition into an NVMe namespace. Examples of correct LUN paths are `/vol/vol1/lun1` and `/vol/vol1/qtreen1/lun1`.

### Examples

```
cluster1:::> vserver nvme namespace convert-from-lun -vserver vs1 -lun-path
/vol/vol1/lun1
```

Transitions LUN `lun1` in-place to NVMe namespace within volume `vol1` in Vserver `vs1`.

## vserver nvme namespace create

Create an NVMe namespace

**Availability:** This command is available to *cluster* and *Vserver* administrators at the *admin* privilege level.

## Description

The `vserver nvme namespace create` command creates a new NVMe namespace of a specific size. You must create NVMe namespaces at the root of a volume or qtree.

When you create an NVMe namespace, it is non-space reserved.



This command is not supported for FlexGroups or Vservers with Infinite Volumes.

## Parameters

### **-vserver <Vserver Name> - Vserver Name**

Specifies the Vserver.

### **-path <path> - Namespace Path**

Specifies the path of the NVMe namespace. Examples of correct NVMe namespace paths are `/vol/vol1/ns1` and `/vol/vol1/mtree1/ns1`.

### **-size {<integer>[KB|MB|GB|TB|PB]} - Size**

Specifies the size of the NVMe namespace in bytes. You can specify a multiplier suffix:

- KB (1024 bytes)
- MB (KB\*KB bytes)
- GB (KB\*MB bytes)
- TB (MB\*MB bytes)

### **-ostype {aix|linux|vmware|windows} - OS Type**

Specifies the operating system type of the NVMe namespace. The OS types are:

- aix - the NVMe namespace stores AIX file system data.
- linux - the NVMe namespace stores Linux file system data.
- vmware - the NVMe namespace stores VMware file system data.
- windows - the NVMe namespace stores Windows file system data.

### **[-comment <text>] - Comment**

Contains a textual description of the NVMe namespace.

### **[-block-size {512|4KB}] - Block Size**

Specifies the block size of the NVMe namespace in bytes. Valid block sizes are

- 512 (in Data ONTAP 9.6 and later)
- 4096

## Examples

```
cluster1::*> vserver nvme namespace create -vserver vs_1 -path
/vol/nsvol/namespace1 -size 100g -ostype linux
```

Creates an NVMe namespace at path `/vol/ns/vol/namespace1` on Vserver `vs_1`.

## vserver nvme namespace delete

Delete an NVMe namespace

**Availability:** This command is available to *cluster* and *Vserver* administrators at the *admin* privilege level.

### Description

The `vserver nvme namespace delete` command deletes an NVMe namespace from a specified Vserver and volume.

### Parameters

**-vserver <Vserver Name> - Vserver Name**

Specifies the Vserver.

**-path <path> - Namespace Path**

Specifies the path of the NVMe namespace. Examples of correct NVMe namespace paths are `/vol/vol1/ns1` and `/vol/vol1/qtrees1/ns1`.

**[-skip-mapped-check <true>] - Skip Mapped Check**

This option is required to delete an NVMe namespace that is attached to a subsystem.

### Examples

```
cluster1::*> vserver nvme namespace delete -vserver vs1 -path
/vol/nsvol/ns1
```

Deletes the NVMe namespace at path `/vol/nsvol/ns1` on Vserver `vs1`.

## vserver nvme namespace modify

Modify an NVMe namespace

**Availability:** This command is available to *cluster* and *Vserver* administrators at the *admin* privilege level.

### Description

The `vserver nvme namespace modify` command modifies NVMe namespace attributes.

## Parameters

### **-vserver <Vserver Name> - Vserver Name**

Specifies the Vserver.

### **-path <path> - Namespace Path**

Specifies the path of the NVMe namespace. Examples of correct NVMe namespace paths are */vol/vol1/ns1* and */vol/vol1/qtrees1/ns1*.

### **[-size {<integer>[KB|MB|GB|TB|PB]}] - Size**

Specifies the size of the NVMe namespace in bytes. You can specify a multiplier suffix:

- KB (1024 bytes)
- MB (KB\*KB bytes)
- GB (KB\*MB bytes)
- TB (MB\*MB bytes)

### **[-comment <text>] - Comment**

Contains a textual description of the NVMe namespace.

### **[-skip-shrink-check <true>] - Skip checking for NS shrink**

Use this parameter to shrink NVMe namespace size.

## Examples

```
cluster1::*> vserver nvme namespace modify -path /vol/nsvol/ns1 -vserver
vs_1 -size 30GB
```

Modifies the size of NVMe namespace at path */vol/nsvol/ns1* on Vserver *vs\_1* to *30GB*.

## vserver nvme namespace show

Display NVMe namespaces

**Availability:** This command is available to *cluster* and *Vserver* administrators at the *admin* privilege level.

### Description

The `vserver nvme namespace show` command displays information for NVMe namespaces.

### Parameters

#### **{ [-fields <fieldname>,...]**

If you specify the `-fields <fieldname>, ...` parameter, the command output also includes the specified field or fields. You can use `'-fields ?'` to display the fields to specify.

**[`-instance` ] }**

If you specify the `-instance` parameter, the command displays detailed information about all fields.

**[`-vserver` <Vserver Name>] - Vserver Name**

Use this parameter to display the NVMe namespaces that match the Vserver that you specify.

**[`-path` <path>] - Namespace Path**

Use this parameter to display the NVMe namespace that matches the path that you specify.

**[`-size` {<integer>[KB|MB|GB|TB|PB]}] - Size**

Use this parameter to display the NVMe namespaces that match the size that you specify.

**[`-size-used` {<integer>[KB|MB|GB|TB|PB]}] - Size Used**

Use this parameter to display the NVMe namespaces that match this parameter value.

**[`-ostype` {aix|linux|vmware|windows}] - OS Type**

Use this parameter to display the NVMe namespaces that match this parameter value.

**[`-comment` <text>] - Comment**

Use this parameter to display the NVMe namespaces that match this parameter value.

**[`-block-size` {512|4KB}] - Block Size**

Use this parameter to display the NVMe namespaces that match this parameter value.

**[`-state` {online|offline|nvfail|space-error}] - State**

Use this parameter to display the NVMe namespaces that match this parameter value.

**[`-is-read-only` {true|false}] - Is Read Only**

Use this parameter to display the NVMe namespaces that match this parameter value.

**[`-creation-timestamp` <MM/DD/YYYY HH:MM:SS>] - Creation Time**

Use this parameter to display the NVMe namespaces that match this parameter value.

**[`-uuid` <UUID>] - Namespace UUID**

Use this parameter to display the NVMe namespaces that match this parameter value.

**[`-restore-inaccessible` {true|false}] - Restore Inaccessible**

Use this parameter to display the NVMe namespaces that match this parameter value.

**[`-node` <nodename>] - Node Hosting the Namespace**

Use this parameter to display the NVMe namespaces that match this parameter value.

**[`-volume` <volume name>] - Volume Name**

Use this parameter to display the NVMe namespaces that match this parameter value.

**[`-qtree` <qtree name>] - Qtree Name**

Use this parameter to display the NVMe namespaces that match this parameter value.

### **[-subsystem <text>] - Mapped Subsystem**

Use this parameter to display the NVMe namespaces that are attached to a Subsystem that matches this parameter value.

### **[-nsid <Hex 32bit Integer>] - Namespace ID**

Use this parameter to display the NVMe namespaces that match this parameter value.

### **[-anagrpid <Hex 32bit Integer>] - ANA Group ID**

Use this parameter to display the NVMe namespaces that match Asymmetric Namespace Access (ANA) group identifier that you specify.

### **[-vserver-id <integer>] - Vserver ID**

Use this parameter to display the NVMe namespaces that match this parameter value.

### **[-container-state {online|aggregate-offline|volume-offline|error}] - Namespace Container State**

Selects the namespaces that match this parameter value. The container states are:

- *online* - The namespace's aggregate and volume are online.
- *aggregate-offline* - The namespace's aggregate is offline.
- *volume-offline* - The namespace's volume is offline.
- *error* - An error occurred accessing the namespace's volume.

### **[-include-offline-containers <>true>] - Include Namespaces on Offline Volumes and Aggregates**

If true, include available information for namespaces in offline aggregates and offline volumes in the output. By default, namespaces in offline aggregates and offline volumes are excluded from the output.

### **[-application <text>] - Application**

Selects the namespace that are part of an application that matches the parameter value.

## **Examples**

```
cluster::*> vserver nvme namespace show -vserver vs1
Vserver   Path                               State   Size Subsystem
NSID
-----
vs1       /vol/test_1_vol/ns1               online  10GB subsys1
00000001h
vs1       /vol/test_1_vol/ns2               online  500MB subsys1
00000002h
vs1       /vol/test_1_vol/ns3               online  1TB  -
-
3 entries were displayed.
```

# vserver nvme subsystem create

Create an NVMe target subsystem

**Availability:** This command is available to *cluster* and *Vserver* administrators at the *admin* privilege level.

## Description

The `vserver nvme subsystem create` command creates a new NVMe target subsystem.

When you create an NVMe subsystem on a Vserver, the Vserver must meet the following pre-conditions:

- The Vserver must have an NVMe service created.
- The Vserver must not already have an NVMe subsystem by the same name.



The NVMe subsystem identifiers are assigned by the system. The NQN is derived from the Vserver UUID and subsystem name and may not be specified or modified by the user.

## Parameters

**-vserver <Vserver Name> - Vserver Name**

Specifies the Vserver.

**-subsystem <text> - Subsystem**

Specifies the NVMe target subsystem.

**-ostype {aix|linux|vmware|windows} - OS Type**

Specifies the operating system type of the NVMe subsystem. The OS types are:

- `aix` - the initiators belong to an AIX host.
- `linux` - the initiators belong to a Linux host.
- `vmware` - the initiators belong to a VMware ESX host.
- `windows` - the initiators belong to a Windows host.

**[-comment <text>] - Comment**

Contains a textual description of the NVMe subsystem.

**[-delete-on-unmap {true|false}] - Delete on Unmap**

Specifies whether the subsystem should be deleted automatically when it is no longer mapped to a namespace.

**[-vendor-uuids <UUID>,...] - Vendor UUIDs**

Specifies vendor-specific identifiers (UUIDs) optionally assigned to an NVMe subsystem when the subsystem is created. The identifiers are used to enable vendor-specific NVMe protocol features. The identifiers are provided by a host application vendor and shared with NetApp prior to a joint product release. Creating an NVMe subsystem with an unknown or non-specific identifier will have no effect on the NVMe subsystem. Refer to the ONTAP SAN Administration Guide for a list of the supported vendor-specific identifiers. After a subsystem is created, the vendor-specific identifiers cannot be changed or removed.

## Examples

```
cluster1::*> vserver nvme subsystem create -vserver vs_1 -subsystem sub_1
-ostype linux
```

Creates a subsystem named *sub\_1* on Vserver *vs\_1*.

## vserver nvme subsystem delete

Delete the subsystem

**Availability:** This command is available to *cluster* and *Vserver* administrators at the *admin* privilege level.

### Description

The `vserver nvme subsystem delete` command deletes an NVMe subsystem from a specified Vserver.

### Parameters

**-vserver <Vserver Name> - Vserver Name**

Specifies the Vserver.

**-subsystem <text> - Subsystem**

Specifies the NVMe target subsystem.

**[-skip-mapped-check <true>] - Skip Mapped Namespace Check**

Required to delete an NVMe subsystem with attached NVMe namespaces.

**[-skip-host-check <true>] - Skip Host Check**

Required to delete an NVMe subsystem with associated hosts.

## Examples

```
cluster1::*> vserver nvme subsystem delete -vserver vs_1 -subsystem sub_1
```

Deletes the NVMe subsystem *sub\_1* on Vserver *vs\_1*.

## vserver nvme subsystem modify

Modify an NVMe target subsystem

**Availability:** This command is available to *cluster* and *Vserver* administrators at the *admin* privilege level.

### Description

The `vserver nvme subsystem modify` command modifies an existing NVMe target subsystem.



## Parameters

**-vserver <Vserver Name> - Vserver Name**

Specifies the Vserver.

**-subsystem <text> - Subsystem**

Specifies the NVMe target subsystem.

**[-comment <text>] - Comment**

Contains a textual description of the NVMe subsystem.

**[-delete-on-unmap {true|false}] - Delete on Unmap**

Specifies whether the subsystem should be deleted automatically when it is no longer mapped to a namespace.

## Examples

```
cluster1::*> vserver nvme subsystem modify -vserver vs_1 -subsystem sub_1
-comment "Example Comment"
```

Modifies the comment on the subsystem named `sub_1` on Vserver `vs_1`.

## vserver nvme subsystem show

Display NVMe target subsystems

**Availability:** This command is available to *cluster* and *Vserver* administrators at the *admin* privilege level.

### Description

The `vserver nvme subsystem show` command displays information for NVMe subsystems.

### Parameters

**{ [-fields <fieldname>,...]**

If you specify the `-fields <fieldname>, ...` parameter, the command output also includes the specified field or fields. You can use `'-fields ?'` to display the fields to specify.

**| [-instance ] }**

If you specify the `-instance` parameter, the command displays detailed information about all fields.

**[-vserver <Vserver Name>] - Vserver Name**

Use this parameter to display the NVMe subsystems that match the Vserver that you specify.

**[-subsystem <text>] - Subsystem**

Use this parameter to display the NVMe subsystem that matches the name that you specify.

### **[-ostype {aix|linux|vmware|windows}] - OS Type**

Use this parameter to display the NVMe subsystems that match this parameter value.

### **[-comment <text>] - Comment**

Use this parameter to display the NVMe subsystems that match this parameter value.

### **[-target-nqn <text>] - Target NQN**

Use this parameter to display the NVMe subsystems that match this parameter value.

### **[-serial-number <text>] - Serial Number**

Use this parameter to display the NVMe subsystems that match this parameter value.

### **[-default-io-queue-count <integer>] - Default Number of Host I/O Queue Pairs**

Specifies the default maximum IO queue count inherited by hosts added to this subsystem.

### **[-default-io-queue-depth <integer>] - Default Host I/O Queue Depth**

Specifies the default maximum IO queue depth inherited by hosts added to this subsystem.

### **[-uuid <UUID>] - UUID**

Use this parameter to display the NVMe subsystems that have UUIDs matching the parameter value.

### **[-delete-on-unmap {true|false}] - Delete on Unmap**

Specifies whether the subsystem should be deleted automatically when it is no longer mapped to a namespace.

### **[-vendor-uuids <UUID>,...] - Vendor UUIDs**

Use this parameter to display the NVMe subsystems that have vendor-specific UUIDs that match the parameter value.

## **Examples**

```
cluster1::*> vserver nvme subsystem show -vserver vs_1
Vserver Subsystem      Target NQN
-----
vs_1
    ss1                nqn.1992-
08.netapp.com:sn.ccb5a7d5d9d311e7924e005056b45113:subsystem.ss1
    ss2                nqn.1992-
08.netapp.com:sn.ccb5a7d5d9d311e7924e005056b45113:subsystem.ss2
2 entries were displayed.
```

## **vserver nvme subsystem controller show**

Display active NVMe controllers

**Availability:** This command is available to *cluster* and *Vserver* administrators at the *admin* privilege level.

## Description

The `vserver nvme subsystem controller show` command displays information for established NVMe controllers. An NVMe controller is established upon each host connection to a subsystem.

## Parameters

**{ [-fields <fieldname>,...]**

If you specify the `-fields <fieldname>`, ... parameter, the command output also includes the specified field or fields. You can use `'-fields ?'` to display the fields to specify.

**| [-instance ] }**

If you specify the `-instance` parameter, the command displays detailed information about all fields.

**[-vserver <Vserver Name>] - Vserver Name**

Use this parameter to display the NVMe controllers that match the Vserver that you specify.

**[-subsystem <text>] - Subsystem**

Use this parameter to display the NVMe controllers that match the subsystem that you specify.

**[-controller-id <Hex 16bit Integer>] - Controller ID**

Use this parameter to display the NVMe controllers that match the controller ID that you specify. The controller ID is the identifier assigned by the NVMe subsystem upon host login and controller creation.

**[-lif <text>] - Logical Interface**

Use this parameter to display the NVMe controllers that match the LIF that you specify.

**[-node <nodename>] - Node**

Use this parameter to display the NVMe controllers that match the cluster node that you specify.

**[-host-nqn <text>] - Host NQN**

Use this parameter to display the NVMe controllers that match the host NQN that you specify. The host NQN is the NVMe identifier assigned to a specific host.

**[-transport-protocol {fc-nvme|nvme-tcp}] - Transport Protocol**

Use this parameter to display the NVMe controllers that match the transport protocol that you specify.

**[-initiator-transport-address <text>] - Initiator Transport Address**

Use this parameter to display the NVMe controllers that match the initiator transport address that you specify. The initiator transport address format depends on the transport protocol in use.

**[-host-id <Hex String>] - Host Identifier**

Use this parameter to display the NVMe controllers that match the host identifier that you specify. The host identifier is a 128-bit identifier assigned to a specific host.

**[-io-queue-count <integer>] - Number of I/O Queues**

Use this parameter to display the NVMe controllers that match the I/O queue count that you specify.

**[-io-queue-depth <integer>,...] - I/O Queue Depths**

Use this parameter to display the NVMe controllers that match the I/O queue depth that you specify.

**[-admin-queue-depth <integer>] - Admin Queue Depth**

Use this parameter to display the NVMe controllers that match the administrative queue depth that you specify.

**[-max-io-size <integer>] - Max IO Size in Bytes**

Use this parameter to display the NVMe controllers that match the maximum IO size (in bytes) that you specify.

**[-kato <integer>] - Keep Alive Time Out(msec)**

Use this parameter to display the NVMe controllers that match the Keep Alive Time Out (in msec) that you specify.

**[-subsystem-uuid <UUID>] - Subsystem UUID**

Use this parameter to display the NVMe controllers that match the Subsystem UUID that you specify.

**[-header-digest-enabled {true|false}] - Header Digest Enabled**

Use this parameter to display the NVMe controllers that have header digest enabled.

**[-data-digest-enabled {true|false}] - Data Digest Enabled**

Use this parameter to display the NVMe controllers that have data digest enabled.

**[-dhchap-hash-function {sha-256|sha-512}] - Authentication Hash Function**

Use this parameter to display the NVMe controllers that connected with the specified hash function using DH-HMAC-CHAP in-band authentication.

**[-dhchap-dh-group {none|2048-bit|3072-bit|4096-bit|6144-bit|8192-bit}] - Authentication Diffie-Hellman Group**

Use this parameter to display the NVMe controllers that connected with the specified Diffie-Hellman group size using DH-HMAC-CHAP in-band authentication.

**[-dhchap-mode {none|unidirectional|bidirectional}] - Authentication Mode**

Use this parameter to display the NVMe controllers that connected with the specified mode for DH-HMAC-CHAP in-band authentication.

**[-trsvcid <text>] - Transport Service Identifier**

Use this parameter to display the NVMe controllers that match the transport service identifier that you specify.

## Examples

```

cluster1::*> vserver nvme subsystem controller show -vserver vs_1
-subsystem ss1
Vserver Subsystem      ID LIF      Host NQN
-----
-----
vs_1      ss1
          0003h lif1     nqn.2001-08.example.com:nvme:host1
          0004h lif1     nqn.2001-08.example.com:nvme:host2
          0009h lif2     nqn.2001-08.example.com:nvme:host1
          000Ah lif2     nqn.2001-08.example.com:nvme:host2
4 entries were displayed.

```

## vserver nvme subsystem host add

Add a host to a subsystem

**Availability:** This command is available to *cluster* and *Vserver* administrators at the *admin* privilege level.

### Description

The `vserver nvme subsystem host add` command adds an FC-NVMe host to an NVMe subsystem on a Vserver.

### Parameters

**-vserver <Vserver Name> - Vserver Name**

Specifies the Vserver.

**-subsystem <text> - Subsystem**

Specifies the NVMe target subsystem.

**-host-nqn <text> - Host NQN**

Specifies the NVMe subsystem host NQN.

**[-dhchap-host-secret-key <text>] - Authentication Host Secret**

Specifies the NVMe DH-HMAC-CHAP in-band authentication host secret.

**[-dhchap-controller-secret-key <text>] - Authentication Controller Secret**

Specifies the NVMe DH-HMAC-CHAP in-band authentication controller secret.

**[-dhchap-hash-function {sha-256|sha-512}] - Authentication Hash Function**

Specifies the NVMe DH-HMAC-CHAP in-band authentication hash function.

**[-dhchap-dh-group {none|2048-bit|3072-bit|4096-bit|6144-bit|8192-bit}] - Authentication Diffie-Hellman Group**

Specifies the NVMe DH-HMAC-CHAP in-band authentication Diffie-Hellman group size.

## Examples

```
cluster::*> vserver nvme subsystem host add -vserver vs_1 -subsystem sub_1
-host-nqn nqn.2001-01.com.example:nvme-host1
```

Adds a host with the specified NQN to the NVMe subsystem *sub\_1* on Vserver *vs\_1*.

## vserver nvme subsystem host remove

Remove a host from a subsystem

**Availability:** This command is available to *cluster* and *Vserver* administrators at the *admin* privilege level.

### Description

The `vserver nvme subsystem host remove` command removes an FC-NVMe host from an NVMe subsystem on a Vserver.

### Parameters

**-vserver <Vserver Name> - Vserver Name**

Specifies the Vserver.

**-subsystem <text> - Subsystem**

Specifies the NVMe target subsystem.

**-host-nqn <text> - Host NQN**

Specifies the NVMe subsystem host NQN.

### Examples

```
cluster::*> vserver nvme subsystem host remove -vserver vs_1 -subsystem
sub_1 -host-nqn nqn.2001-01.com.example:host1
```

Removes the host with the specified NQN from NVMe subsystem *sub\_1* on Vserver *vs\_1*.

## vserver nvme subsystem host show

Display NVMe hosts configured to the subsystem

**Availability:** This command is available to *cluster* and *Vserver* administrators at the *admin* privilege level.

### Description

The `vserver nvme subsystem host show` command displays information for the NVMe subsystem hosts.

## Parameters

**{ [-fields <fieldname>,...]**

If you specify the `-fields <fieldname>`, ... parameter, the command output also includes the specified field or fields. You can use `'-fields ?'` to display the fields to specify.

**| [-instance ] }**

If you specify the `-instance` parameter, the command displays detailed information about all fields.

**[-vserver <Vserver Name>] - Vserver Name**

Use this parameter to display the NVMe subsystem hosts that match the Vserver that you specify.

**[-subsystem <text>] - Subsystem**

Use this parameter to display the NVMe subsystem hosts that match the subsystem that you specify.

**[-host-nqn <text>] - Host NQN**

Use this parameter to display the NVMe subsystem host that matches the subsystem host NQN that you specify.

**[-io-queue-count <integer>] - Number of I/O Queue Pairs**

Use this parameter to display the NVMe subsystem hosts that match the maximum IO queue count that you specify.

**[-io-queue-depth <integer>] - I/O Queue Depth**

Use this parameter to display the NVMe subsystem hosts that match the maximum IO queue depth that you specify.

**[-dhchap-hash-function {sha-256|sha-512}] - Authentication Hash Function**

Specifies the NVMe DH-HMAC-CHAP in-band authentication hash function.

**[-dhchap-dh-group {none|2048-bit|3072-bit|4096-bit|6144-bit|8192-bit}] - Authentication Diffie-Hellman Group**

Specifies the NVMe DH-HMAC-CHAP in-band authentication Diffie-Hellman group size.

**[-dhchap-mode {none|unidirectional|bidirectional}] - Authentication Mode**

Reports the NVMe DH-HMAC-CHAP in-band authentication mode.

## Examples

```
cluster::*> vserver nvme subsystem host show -vserver vs_1 -subsystem
sub_1
Vserver Subsystem Host NQN
-----
vs_1    sub_1    nqn.2001-08.com.example:nvme:host1
                nqn.2001-08.com.example:nvme:host2
                nqn.2001-08.com.example:nvme:host3
3 entries were displayed.
```

# vserver nvme subsystem map add

Add a namespace map

**Availability:** This command is available to *cluster* and *Vserver* administrators at the *admin* privilege level.

## Description

The `vserver nvme subsystem map add` command creates an association on an NVMe namespace to an NVMe subsystem.

When you add an NVMe subsystem map, the following pre-conditions must hold:

- The NVMe namespace must not be already mapped to a different subsystem.
- There must be an FC-NVMe LIF on the NVMe namespace owning node.

## Parameters

**-vserver <Vserver Name> - Vserver Name**

Specifies the Vserver.

**-subsystem <text> - Subsystem**

Specifies the NVMe target subsystem.

**-path <path> - Namespace Path**

Specifies the path of the NVMe namespace. Examples of correct NVMe namespace paths are `/vol/vol1/ns1` and `/vol/vol1/mtree1/ns1`.

## Examples

```
cluster::*> vserver nvme subsystem map add -vserver vs_1 -subsystem sub_1
-path /vol/nsvol/namespace1
```

Adds an association on the NVMe namespace at the specified path to NVMe subsystem `sub_1` on Vserver `vs_1`.

# vserver nvme subsystem map remove

Remove a namespace map

**Availability:** This command is available to *cluster* and *Vserver* administrators at the *admin* privilege level.

## Description

The `vserver nvme subsystem map remove` command deletes an association on an NVMe namespace to an NVMe subsystem.



## Parameters

### **-vserver <Vserver Name> - Vserver Name**

Specifies the Vserver.

### **-subsystem <text> - Subsystem**

Specifies the NVMe target subsystem.

### **-path <path> - Namespace Path**

Specifies the path of the NVMe namespace. Examples of correct NVMe namespace paths are `/vol/vol1/ns1` and `/vol/vol1/mtree1/ns1`.

## Examples

```
cluster::*> vserver nvme subsystem map remove -vserver vs_1 -subsystem
sub_1 -path /vol/nsvol/namespace1
```

Removes the association on the NVMe namespace at the specified path to NVMe subsystem `sub_1` on Vserver `vs_1`.

## vserver nvme subsystem map show

Display namespace maps within the subsystem

**Availability:** This command is available to *cluster* and *Vserver* administrators at the *admin* privilege level.

## Description

The `vserver nvme subsystem map show` command displays information about NVMe subsystem maps.

## Parameters

**{ [-fields <fieldname>,...]**

If you specify the `-fields <fieldname>, ...` parameter, the command output also includes the specified field or fields. You can use `'-fields ?'` to display the fields to specify.

**| [-instance ] }**

If you specify the `-instance` parameter, the command displays detailed information about all fields.

**[-vserver <Vserver Name>] - Vserver Name**

Use this parameter to display the NVMe subsystem maps that match the Vserver that you specify.

**[-subsystem <text>] - Subsystem**

Use this parameter to display the NVMe subsystem maps that match the subsystem that you specify.

**[-nsid <Hex 32bit Integer>] - NSID**

Use this parameter to display the NVMe subsystem maps that match the NVMe namespace NSID that you specify.

### **[-path <path>] - Namespace Path**

Use this parameter to display the NVMe subsystem maps that match the NVMe namespace path that you specify.

### **[-anagrpid <Hex 32bit Integer>] - ANA Group ID**

Use this parameter to display the NVMe namespaces that match the Asymmetric Namespace Access (ANA) group identifier that you specify.

### **[-namespace-uuid <UUID>] - Namespace UUID**

Use this parameter to display the NVMe subsystem maps that match the NVMe namespace UUID that you specify.

## **Examples**

```
cluster-1::*> vserver nvme subsystem map show -vserver vs_1
Vserver      Subsystem      NSID Namespace Path
-----
vs_1         sub_1
              00000001h /vol/nsvol1/ns1
              00000002h /vol/nsvol1/ns2
2 entries were displayed.
```

## Copyright information

Copyright © 2022 NetApp, Inc. All Rights Reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means—graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system—without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP “AS IS” AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

LIMITED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (b)(3) of the Rights in Technical Data -Noncommercial Items at DFARS 252.227-7013 (FEB 2014) and FAR 52.227-19 (DEC 2007).

Data contained herein pertains to a commercial product and/or commercial service (as defined in FAR 2.101) and is proprietary to NetApp, Inc. All NetApp technical data and computer software provided under this Agreement is commercial in nature and developed solely at private expense. The U.S. Government has a non-exclusive, non-transferrable, nonsublicensable, worldwide, limited irrevocable license to use the Data only in connection with and in support of the U.S. Government contract under which the Data was delivered. Except as provided herein, the Data may not be used, disclosed, reproduced, modified, performed, or displayed without the prior written approval of NetApp, Inc. United States Government license rights for the Department of Defense are limited to those rights identified in DFARS clause 252.227-7015(b) (FEB 2014).

## Trademark information

NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.