vserver nvme commands

ONTAP commands

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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 WWN>] - FC WWPN

Use this parameter to display the NVMe interfaces that match the FC WWPN 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: nvmf, 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 Igroup 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/qtree1/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/qtree1/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)
- PB (KB*TB 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/qtree1/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/qtree1/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)
- PB (KB*TB bytes)

[-comment <text>] - Comment

Contains a textual description of the NVMe namespace.

[-skip-shrink-check <true>] - Skip checking for NS shrink (privilege: advanced)

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 (privilege: advanced)

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 (privilege: advanced)

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 (privilege: advanced)

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 (privilege: advanced)

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

`[-vendor-uuids <UUID>,…]` - Vendor UUIDs (privilege: advanced)

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 (privilege: advanced)

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 IO queue count inherited by hosts added to this subsystem. The actual value used when a connection is established may vary depending on the host and transport protocol used.

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

Specifies the IO queue depth inherited by hosts added to this subsystem. The actual value used when a connection is established may vary depending on the host and transport protocol used.

[-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 (privilege: advanced)

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

[-vendor-uuids <UUID>,…] - Vendor UUIDs (privilege: advanced)

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 maxium 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/qtree1/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/qtree1/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 (privilege: advanced)

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 ubsystem 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.
```

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