



# **Volume access group API methods**

Element Software

NetApp  
November 19, 2025

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# Table of Contents

Volume access group API methods .....	1
Find more information .....	1
AddInitiatorsToVolumeAccessGroup .....	1
Parameters .....	1
Return value .....	2
Request example .....	2
Response example .....	3
New since version .....	3
AddVolumesToVolumeAccessGroup .....	4
Parameters .....	4
Return value .....	4
Request example .....	4
Response example .....	4
New since version .....	5
CreateVolumeAccessGroup .....	5
Parameters .....	6
Return values .....	6
Request example .....	7
Response example .....	7
New since version .....	8
Find more information .....	8
DeleteVolumeAccessGroup .....	8
Parameters .....	8
Return values .....	9
Request example .....	9
Response example .....	10
New since version .....	10
ListVolumeAccessGroups .....	10
Parameters .....	10
Return values .....	11
Request example .....	11
Response example .....	12
New since version .....	12
RemoveVolumesFromVolumeAccessGroup .....	12
Parameters .....	12
Return value .....	13
Request example .....	13
Response example .....	13
New since version .....	14
RemoveInitiatorsFromVolumeAccessGroup .....	14
Parameters .....	14
Return value .....	15
Request example .....	16

Response example . . . . .	16
New since version . . . . .	17
ModifyVolumeAccessGroup . . . . .	17
Parameters . . . . .	17
Return value . . . . .	18
Request example . . . . .	18
Response example . . . . .	19
New since version . . . . .	20
Find more information . . . . .	20
GetVolumeAccessGroupEfficiency . . . . .	20
Parameter . . . . .	20
Return value . . . . .	20
Request example . . . . .	21
Response example . . . . .	21
New since version . . . . .	21

# Volume access group API methods

Volume access group methods enable you to add, remove, view, and modify volume access groups, which are collections of volumes that users can access using either iSCSI or Fibre Channel initiators.

- [AddInitiatorsToVolumeAccessGroup](#)
- [AddVolumesToVolumeAccessGroup](#)
- [CreateVolumeAccessGroup](#)
- [DeleteVolumeAccessGroup](#)
- [ListVolumeAccessGroups](#)
- [RemoveVolumesFromVolumeAccessGroup](#)
- [RemoveInitiatorsFromVolumeAccessGroup](#)
- [ModifyVolumeAccessGroup](#)
- [GetVolumeAccessGroupEfficiency](#)

## Find more information

- [SolidFire and Element Software Documentation](#)
- [Documentation for earlier versions of NetApp SolidFire and Element products](#)

## AddInitiatorsToVolumeAccessGroup

You can use the `AddInitiatorsToVolumeAccessGroup` method to add initiators to a specified volume access group.

The accepted format of an initiator IQN is `iqn.yyyy-mm`, where y and m are digits, followed by text which must only contain digits, lower-case alphabetic characters, a period (.), colon (:) or dash (-). See the following example:

```
iqn.2010-01.com.solidfire:17oi.solidfire-0.1
```

The accepted format of a Fibre Channel initiator WWPN is `Aa:bB:CC:dd:11:22:33:44`, or `AabBCCdd11223344`. See the following example:

```
21:00:00:0e:1e:11:f1:81
```

## Parameters

This method has the following input parameters:

Name	Description	Type	Default value	Required
initiators	<p>List of initiator IDs or names (IQNs and WWPNs) to include in the volume access group. If you pass a list of initiator names, the initiators are created if they do not already exist. If you pass a list of initiator IDs, the method returns an error if any of the initiators does not already exist.</p> <p>Passing initiator names is deprecated; you should use initiator IDs whenever possible.</p>	integer array or string array (deprecated)		Yes
volumeAccessGroup ID	The ID of the volume access group to add the initiator.	integer	None	Yes

## Return value

This method has the following return value:

Name	Description	Type
volumeAccessGroup	An object containing information about the newly modified volume access group.	<a href="#">volumeAccessGroup</a>

## Request example

Requests for this method are similar to the following example:

```
{  
  "id": 13171,  
  "method": "AddInitiatorsToVolumeAccessGroup",  
  "params": {  
    "initiators": [116,117],  
    "volumeAccessGroupID": 96  
  }  
}
```

## Response example

This method returns a response similar to the following example:

```
{  
  "id": 13171,  
  "result": {  
    "volumeAccessGroup": {  
      "attributes": {},  
      "deletedVolumes": [  
        327  
      ],  
      "initiatorIDs": [  
        116,  
        117  
      ],  
      "initiators": [  
        "iqn.1993-08.org.debian:01:181324777",  
        "iqn.1993-08.org.debian:01:181324888"  
      ],  
      "name": "northbanktest",  
      "volumeAccessGroupID": 96,  
      "volumes": [  
        346  
      ]  
    }  
  }  
}
```

## New since version

9.6

# AddVolumesToVolumeAccessGroup

You can use the `AddVolumesToVolumeAccessGroup` method to add volumes to a specified volume access group.

## Parameters

This method has the following input parameters:

Name	Description	Type	Default value	Required
volumes	List of volumeIDs to add to the volume access group.	integer array	None	Yes
volumeAccessGroupID	VolumeAccessGroupID of the volume access group to which volumes are added.	integer	None	Yes

## Return value

This method has the following return value:

Name	Description	Type
volumeAccessGroup	An object containing information about the newly modified volume access group.	<a href="#">volumeAccessGroup</a>

## Request example

Requests for this method are similar to the following example:

```
{
  "method": "AddVolumesToVolumeAccessGroup",
  "params": {
    "volumeAccessGroupID": 96,
    "volumes": [1,2]
  },
  "id": 1
}
```

## Response example

This method returns a response similar to the following example:

```
{
  "id": 1,
  "result": {
    "volumeAccessGroup": {
      "attributes": {},
      "deletedVolumes": [
        346
      ],
      "initiatorIDs": [
        116,
        117
      ],
      "initiators": [
        "iqn.1993-08.org.debian:01:181324777",
        "iqn.1993-08.org.debian:01:181324888"
      ],
      "name": "northbanktest",
      "volumeAccessGroupID": 96,
      "volumes": [
        1,
        2
      ]
    }
  }
}
```

## New since version

9.6

## CreateVolumeAccessGroup

You can use `CreateVolumeAccessGroup` to create a new volume access group. When you create the volume access group, you need to give it a name, and you can optionally enter initiators and volumes.

Any initiator IQN that you add to the volume access group is able to access any volume in the group without CHAP authentication.



Cloned volumes do not inherit volume access group membership from the source volume.

Consider the following when you create volume access groups:

- A volume access group can contain up to 64 initiator IQNs.
- An initiator can only belong to one volume access group.

- A volume access group can contain up to 2000 volumes.
- Each volume access group can belong to a maximum of four volume access groups.

## Parameters

This method has the following input parameters:

Name	Description	Type	Default value	Required
initiators	List of initiator IDs or names (IQNs and WWPNs) to include in the volume access group. If you pass a list of initiator names, the initiators are created if they do not already exist. If you pass a list of initiator IDs, the method returns an error if any of the initiators does not already exist. Passing initiator names is deprecated; you should use initiator IDs whenever possible.	integer array or string array (deprecated)		No
name	Name of the volume access group. Not required to be unique, but recommended. Must be 1 to 64 characters in length.	string	None	Yes
volumes	List of volumeIDs to include in the volume access group.	integer array		No
attributes	List of name-value pairs in JSON object format.	JSON object	{}	No

## Return values

This method has the following return values:

Name	Description	Type
volumeAccessGroup	An object containing information about the newly created volume access group.	<a href="#">volumeAccessGroup</a>
volumeAccessGroupID	The ID of the newly created volume access group.	integer

## Request example

Requests for this method are similar to the following example:

```
{
  "method": "CreateVolumeAccessGroup",
  "params": {
    "name": "myaccessgroup",
    "initiators": ["iqn.1993-08.org.debian: 01: a31b1d799d5c"],
    "volumes": [327],
    "attributes": {}
  }
}
```

## Response example

This method returns a response similar to the following example:

```
{
  "id": null,
  "result": {
    "volumeAccessGroup": {
      "attributes": {},
      "deletedVolumes": [],
      "initiatorIDs": [
        95
      ],
      "initiators": [
        "iqn.1993-08.org.debian: 01: a31b1d799d5c"
      ],
      "name": "myaccessgroup",
      "volumeAccessGroupID": 96,
      "volumes": [
        327
      ]
    },
    "volumeAccessGroupID": 96
  }
}
```

## New since version

9.6

## Find more information

- [GetAsyncResult](#)
- [ListSyncJobs](#)
- [ModifyVolume](#)

## DeleteVolumeAccessGroup

You can use `DeleteVolumeAccessGroup` to delete a volume access group.

### Parameters

This method has the following input parameters:

Name	Description	Type	Default value	Required
volumeAccessGroupID	The ID of the volume access group to be deleted.	integer	None	Yes

Name	Description	Type	Default value	Required
deleteOrphanInitiators	<p>Specifies whether to delete initiator objects or not. Possible values:</p> <ul style="list-style-type: none"> <li>• true: Delete initiator objects after they are removed from a volume access group.</li> <li>• false: Do not delete initiator objects after they are removed from a volume access group. This is the default.</li> </ul>	boolean	false	No
force	<p>Adding this flag will force the volume access group to be deleted even though it has a Virtual Network ID or Tag. Possible values:</p> <ul style="list-style-type: none"> <li>• true: Volume access group will be deleted.</li> <li>• false: Default. Do not delete the volume access group if it has a Virtual Network ID or Tag.</li> </ul>	boolean	false	No

## Return values

This method does not have return values.

## Request example

Requests for this method are similar to the following example:

```
{
  "method": "DeleteVolumeAccessGroup",
  "params": {
    "force": true,
    "volumeAccessGroupID" : 3
  },
  "id" : 1
}
```

## Response example

This method returns a response similar to the following example:

```
{
  "id" : 1,
  "result": {}
}
```

## New since version

9.6

# ListVolumeAccessGroups

You can use the `ListVolumeAccessGroups` method to get information about the volume access groups that are currently in the system.

## Parameters

This method has the following input parameters:

Name	Description	Type	Default value	Required
limit	Maximum number of volumeAccessGroup objects to return. Mutually exclusive with the volumeAccessGroups parameter.	integer	Unlimited	No

Name	Description	Type	Default value	Required
startVolumeAccessGroupID	The volume access group ID at which to begin the listing. Mutually exclusive with the volumeAccessGroups parameter.	integer	0	No
volumeAccessGroups	List of volumeAccessGroup ID values to retrieve. Mutually exclusive with the startVolumeAccessGroupID and limit parameters.	integer array		No

## Return values

This method has the following return values:

Name	Description	Type
volumeAccessGroups	A list of objects describing each volume access group.	<a href="#">volumeAccessGroup</a> array
volumeAccessGroupsNotFound	A list of volume access groups not found by the system. Present if you used the volumeAccessGroups parameter and the system was unable to find one or more volume access groups that you specified.	integer array

## Request example

Requests for this method are similar to the following example:

```
{
  "method": "ListVolumeAccessGroups",
  "params": {
    "startVolumeAccessGroupID": 3,
    "limit"      : 1
  },
  "id" : 1
}
```

## Response example

This method returns a response similar to the following example:

```
{  
  "id": 1,  
  "result": {  
    "volumeAccessGroups": [  
      {  
        "attributes": {},  
        "deletedVolumes": [],  
        "initiatorIDs": [],  
        "initiators": [],  
        "name": "example1",  
        "volumeAccessGroupID": 3,  
        "volumes": []  
      }  
    ]  
  }  
}
```

## New since version

9.6

## RemoveVolumesFromVolumeAccessGroup

You can use the `RemoveVolumesFromVolumeAccessGroup` method to remove volumes from a specified volume access group.

### Parameters

This method has the following input parameters:

Name	Description	Type	Default value	Required
volumeAccessGroupID	VolumeAccessGroupID to remove volumes from.	integer	None	Yes
volumes	VolumeIDs of volumes to remove from the volume access group.	integer array	None	Yes

## Return value

This method has the following return value:

Name	Description	Type
volumeAccessGroup	An object containing information about the newly modified volume access group.	<a href="#">volumeAccessGroup</a>

## Request example

Requests for this method are similar to the following example:

```
{  
  "method": "RemoveVolumesFromVolumeAccessGroup",  
  "params": {  
    "volumeAccessGroupID": 96,  
    "volumes": [1,2]  
  },  
  "id": 1  
}
```

## Response example

This method returns a response similar to the following example:

```
{
  "id": 1,
  "result": {
    "volumeAccessGroup": {
      "attributes": {},
      "deletedVolumes": [
        346
      ],
      "initiatorIDs": [
        116,
        117
      ],
      "initiators": [
        "iqn.1993-08.org.debian:01:181324777",
        "iqn.1993-08.org.debian:01:181324888"
      ],
      "name": "northbanktest",
      "volumeAccessGroupID": 96,
      "volumes": []
    }
  }
}
```

## New since version

9.6

## RemoveInitiatorsFromVolumeAccessGroup

You can use the `RemoveInitiatorsFromVolumeAccessGroup` method to remove initiators from a specified volume access group.

### Parameters

This method has the following input parameters:

Name	Description	Type	Default value	Required
volumeAccessGroupID	The ID of the volume access group from which initiators are removed.	integer	None	Yes

Name	Description	Type	Default value	Required
initiators	<p>List of initiator IDs or names (IQNs and WWPNs) to include in the volume access group. If you pass a list of initiator names, the initiators are created if they do not already exist. If you pass a list of initiator IDs, the method returns an error if any of the initiators does not already exist. Passing initiator names is deprecated; you should use initiator IDs whenever possible.</p>	integer array (recommended) or string array (deprecated)	None	No
deleteOrphanInitiators	<p>Specifies whether to delete initiator objects after they are removed from a volume access group or not. Possible values:</p> <ul style="list-style-type: none"> <li>• true: Delete initiator objects after they are removed from a volume access group.</li> <li>• false: Do not delete initiator objects after they are removed from a volume access group. This is the default.</li> </ul>	boolean	false	No

## Return value

This method has the following return value:

Name	Description	Type
volumeAccessGroup	An object containing information about the newly modified volume access group.	<a href="#">volumeAccessGroup</a>

## Request example

Requests for this method are similar to the following example:

```
{
  "id": 13171,
  "method": "RemoveInitiatorsFromVolumeAccessGroup",
  "params": {
    "initiators": [114,115],
    "volumeAccessGroupID": 96
  }
}
```

## Response example

This method returns a response similar to the following example:

```
{
  "id": 13171,
  "result": {
    "volumeAccessGroup": {
      "attributes": {},
      "deletedVolumes": [
        327
      ],
      "initiatorIDs": [],
      "initiators": [],
      "name": "test",
      "volumeAccessGroupID": 96,
      "volumes": [
        346
      ]
    }
  }
}
```

## New since version

9.6

# ModifyVolumeAccessGroup

You can use the `ModifyVolumeAccessGroup` method to update initiators and add or remove volumes from a volume access group.

If a specified initiator or volume is a duplicate of what currently exists, the volume access group is left as-is. If you do not specify a value for volumes or initiators, the current list of initiators and volumes is not changed.

## Parameters

This method has the following input parameters:

Name	Description	Type	Default value	Required
volumeAccessGroupID	The ID of the volume access group to modify.	integer	None	Yes
name	The new name for this volume access group.	string	None	No
attributes	List of name-value pairs in JSON object format.	JSON object	None	No
initiators	List of initiator IDs or names (IQNs and WWPNs) to include in the volume access group. If you pass a list of initiator names, the initiators are created if they do not already exist. If you pass a list of initiator IDs, the method returns an error if any of the initiators does not already exist. Passing initiator names is deprecated; you should use initiator IDs whenever possible.	integer array (recommended) or string array (deprecated)	None	No

deleteOrphanInitiators	<p>Specifies whether to delete initiator objects after they are removed from a volume access group or not. Possible values:</p> <ul style="list-style-type: none"> <li>• true: Delete initiator objects after they are removed from a volume access group.</li> <li>• false: Do not delete initiator objects after they are removed from a volume access group. This is the default.</li> </ul>	boolean	false	No
volumes	A list of volume IDs of volumes to modify.	integer array	None	<a href="#">volumeAccessGroup</a>

## Return value

This method has the following return value:

Name	Description	Type
volumeAccessGroup	An object containing information about the newly modified volume access group.	<a href="#">volumeAccessGroup</a>

## Request example

Requests for this method are similar to the following example:

```
{
  "method": "ModifyVolumeAccessGroup",
  "params": {
    "volumeAccessGroupID": 96,
    "name": "accessgrouptest",
    "initiators": [115,114],
    "volumes": [
      346
    ],
    "attributes": { }
  }
}
```

## Response example

This method returns a response similar to the following example:

```
{
  "id": null,
  "result": {
    "volumeAccessGroup": {
      "attributes": { },
      "deletedVolumes": [
        327
      ],
      "initiatorIDs": [
        114,
        115
      ],
      "initiators": [
        "iqn.1998-01.com.vmware:desk1-esx1-577b283a",
        "iqn.1998-01.com.vmware:donesq-esx1-421b281b"
      ],
      "name": "accessgrouptest",
      "volumeAccessGroupID": 96,
      "volumes": [
        346
      ]
    }
  }
}
```

## New since version

9.6

## Find more information

- [AddInitiatorsToVolumeAccessGroup](#)
- [AddVolumesToVolumeAccessGroup](#)
- [RemoveInitiatorsFromVolumeAccessGroup](#)
- [RemoveVolumesFromVolumeAccessGroup](#)

# GetVolumeAccessGroupEfficiency

You can use the `GetVolumeAccessGroupEfficiency` method to get efficiency information about a volume access group. Only the volume access group you provide as the parameter in this API method is used to compute the capacity.

## Parameter

This method has the following input parameter:

Name	Description	Type	Default value	Required
volumeAccessGroupID	Specifies the volume access group for which capacity is computed.	integer	None	Yes

## Return value

This method has the following return value:

Name	Description	Type
compression	The amount of space saved by data compression for all volumes in the volume access group. Stated as a ratio where a value of 1 means data has been stored with no compression.	float
deduplication	The amount of space saved by not duplicating data for all volumes in the volume access group. Stated as a ratio.	float

thinProvisioning	The ratio of space used to the amount of space allocated for storing data. Stated as a ratio.	float
timestamp	The last time efficiency data was collected after garbage collection.	ISO 8601 data string
missingVolumes	The volumes that could not be queried for efficiency data. Missing volumes can be caused by a recent garbage collection, temporary network loss or restarted services since the garbage collection cycle.	integer array

## Request example

Requests for this method are similar to the following example:

```
{
  "method": "GetVolumeAccessGroupEfficiency",
  "params": {
    "volumeAccessGroupID": 1
  },
  "id": 1
}
```

## Response example

This method returns a response similar to the following example:

```
{
  "id": 1,
  "result": {
    "compression": 2.006012925331075,
    "deduplication": 1,
    "missingVolumes": [],
    "thinProvisioning": 1.009861932938856,
    "timestamp": "2014-03-10T17:05:27Z"
  }
}
```

## New since version

9.6

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