NetApp

SnapMirror

REST API reference

NetApp
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SnapMirror

SnapMirror overview

Overview

SnapMirror technology enables customers to copy and backup their production data. The secondary or destination volume in such a backup relationship can reside anywhere, locally or remotely, and can be used to restore access to the protected data. You can restore access to protected data by drawing upon a vault of backups or, in the event that a primary is unusable, by using a disaster recovery copy that can be activated for clients and applications. SnapMirror periodically updates a replica to create new backups and/or to keep a replica up-to-date with changes that have been written to the primary. The SnapMirror subsystems are designed to keep many pairs of source (primary) and destination (secondary) copies up-to-date in an efficient and scalable manner.

The SnapMirror APIs can be used to create and manage SnapMirror relationships of type "async", and "sync". These APIs can also be used to manage restore-relationships. These APIs allow you to manage the following endpoints:

- SnapMirror policies - When applied to a SnapMirror relationship, the SnapMirror policy controls the behavior of the relationship and specifies the configuration attributes for that relationship.

- SnapMirror relationships - You can create and manage SnapMirror relationships, and you can change the state of the SnapMirror relationship using a PATCH request.

- SnapMirror transfers - You can manage data transfers on the specified SnapMirror relationship.

Manage SnapMirror policies

SnapMirror policies endpoint overview

Managing SnapMirror policies

This API is used to manage SnapMirror policies of type "mirror-vault", "sync-mirror" and "strict-sync-mirror". When applied to a SnapMirror relationship, the SnapMirror policy controls the behavior of the relationship and specifies the configuration attributes for that relationship.

Mapping of SnapMirror policies from CLI to REST

CLI	REST
mirror-vault	async

CLI	REST	sync_type
sync-mirror	sync	sync
strict-sync-mirror	sync	strict_sync

Retrieve SnapMirror async and sync policy types

GET `/snapmirror/policies`

Retrieves SnapMirror policies of type "mirror-vault", "sync-mirror" and "strict-sync-mirror".

Related ONTAP commands

- `snapmirror policy show`

Example

The following example shows how to retrieve a collection of SnapMirror policies.

```
GET "/api/storage/snapmirror/policies"
```

Learn more

- DOC /snapmirror/policies

Parameters

Name	Type	In	Required	Description
uuid	string	query	False	Filter by uuid
comment	string	query	False	Filter by comment
transfer_schedule.uuid	string	query	False	Filter by transfer_schedule.uuid
transfer_schedule.name	string	query	False	Filter by transfer_schedule.name
network_compression_enabled	boolean	query	False	Filter by network_compression_enabled
sync_type	string	query	False	Filter by sync_type
sync_common_snapshot_schedule.uuid	string	query	False	Filter by sync_common_snapshot_schedule.uuid
sync_common_snapshot_schedule.name	string	query	False	Filter by sync_common_snapshot_schedule.name
retention.prefix	string	query	False	Filter by retention.prefix

Name	Type	In	Required	Description
retention.count	integer	query	False	Filter by retention.count
retention.label	string	query	False	Filter by retention.label
retention.creation_schedule.uuid	string	query	False	Filter by retention.creation_schedule.uuid
retention.creation_schedule.name	string	query	False	Filter by retention.creation_schedule.name
throttle	integer	query	False	Filter by throttle
identity_preservation	string	query	False	Filter by identity_preservation
scope	string	query	False	Filter by scope
svm.uuid	string	query	False	Filter by svm.uuid
svm.name	string	query	False	Filter by svm.name
type	string	query	False	Filter by type
name	string	query	False	Filter by name
fields	array[string]	query	False	Specify the fields to return.
max_records	integer	query	False	Limit the number of records returned.
return_records	boolean	query	False	The default is true for GET calls. When set to false, only the number of records is returned.

Name	Type	In	Required	Description
return_timeout	integer	query	False	The number of seconds to allow the call to execute before returning. When iterating over a collection, the default is 15 seconds. ONTAP returns earlier if either max records or the end of the collection is reached.
order_by	array[string]	query	False	Order results by specified fields and optional [asc

Response

```
Status: 200, Ok
```

Name	Type	Description
_links	_links	
num_records	integer	Number of records
records	array[snapmirror_policy]	

Example response

```json
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "comment": "string",
      "identity_preservation": "string",
      "name": "MirrorAndVault",
      "retention": [
        {
          "count": 7,
          "creation_schedule": {
            "_links": {
              "self": {
                "href": "/api/resourcelink"
              }
            },
            "name": "weekly",
            "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
          },
          "label": "hourly",
          "prefix": "string"
        }
      ],
      "scope": "string",
      "svm": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "svm1",
        "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
```

```
        },
        "sync_common_snapshot_schedule": {
          "_links": {
            "self": {
              "href": "/api/resourcelink"
            }
          },
          "name": "weekly",
          "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
        },
        "sync_type": "string",
        "throttle": 0,
        "transfer_schedule": {
          "_links": {
            "self": {
              "href": "/api/resourcelink"
            }
          },
          "name": "weekly",
          "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
        },
        "type": "string",
        "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
      }
    ]
  }
```

Error

```
Status: Default
```

ONTAP Error Response codes

Error code	Description
13303842	Invalid SnapMirror policy type.

Name	Type	Description
error	error	

Example error

```json
{
  "error": {
    "arguments": [
      {
        "code": "string",
        "message": "string"
      }
    ],
    "code": "4",
    "message": "entry doesn't exist",
    "target": "uuid"
  }
}
```

Definitions

See Definitions

href

Name	Type	Description
href	string	

_links

Name	Type	Description
next	href	
self	href	

_links

Name	Type	Description
self	href	

creation_schedule

Schedule used to create Snapshot copies on the destination for long term retention.

Name	Type	Description
_links	_links	
name	string	Job schedule name
uuid	string	Job schedule UUID

snapmirror_policy_rule

SnapMirror policy rule for retention.

Name	Type	Description
count	integer	Number of Snapshot copies to be kept for retention.
creation_schedule	creation_schedule	Schedule used to create Snapshot copies on the destination for long term retention.
label	string	Snapshot copy label

Name	Type	Description
prefix	string	Specifies the prefix for the Snapshot copy name to be created as per the schedule. If no value is specified, then the label is used as the prefix.

svm

SVM, applies only to SVM-scoped objects.

Name	Type	Description
_links	_links	
name	string	The name of the SVM.
uuid	string	The unique identifier of the SVM.

sync_common_snapshot_schedule

Schedule used to create common Snapshot copies for synchronous relationships.

Name	Type	Description
_links	_links	
name	string	Job schedule name
uuid	string	Job schedule UUID

transfer_schedule

The schedule used to update asynchronous relationships.

Name	Type	Description
_links	_links	
name	string	Job schedule name
uuid	string	Job schedule UUID

snapmirror_policy

SnapMirror policy information

Name	Type	Description
_links	_links	

Name	Type	Description
comment	string	Comment associated with the policy.
identity_preservation	string	Specifies which configuration of the source SVM is replicated to destination. This field is applicable only for SVM data protection and async policies.
name	string	
network_compression_enabled	boolean	Specifies whether network compression is enabled for transfers. This is applicable only to async policies.
retention	array[snapmirror_policy_rule]	Policy on Snapshot copy retention. This is applicable only to async policies.
scope	string	Set to "svm" for policies owned by an SVM, otherwise set to "cluster".
svm	svm	SVM, applies only to SVM-scoped objects.
sync_common_snapshot_schedule	sync_common_snapshot_schedule	Schedule used to create common Snapshot copies for synchronous relationships.
sync_type	string	
throttle	integer	Throttle in KB/s. Default to unlimited.
transfer_schedule	transfer_schedule	The schedule used to update asynchronous relationships.
type	string	
uuid	string	

error_arguments

Name	Type	Description
code	string	Argument code

Name	Type	Description
message	string	Message argument

error

Name	Type	Description
arguments	array[error_arguments]	Message arguments
code	string	Error code
message	string	Error message
target	string	The target parameter that caused the error.

Create a SnapMirror policy

POST `/snapmirror/policies`

Creates a SnapMirror policy. The parameter "identity_preservation" is applicable to only SnapMirror relationships with SVM endpoints and it indicates which configuration of the source SVM is replicated to the destination SVM.

It takes the following values:

- `full` - indicates that the source SVM configuration is replicated to the destination SVM endpoint.

- `exclude_network_config` - indicates that the source SVM configuration other than network configuration is replicated to the destination SVM endpoint.

- `exclude_network_and_protocol_config` - indicates that the source SVM configuration is not replicated to the destination SVM endpoint.

Important note

- The property "identity_preservation" is applicable to only SnapMirror relationships with SVM endpoints and it indicates which configuration of the source SVM is replicated to the destination SVM.

- The properties "identity_preservation", "retention" and "transfer_schedule" are not applicable for "sync" type policies.

- The property "sync_common_snapshot_schedule" is not applicabe for an "async" type policy.

- The property "retention.count" specifies the maximum number of Snapshot copies that are retained on the SnapMirror destination volume.

- When the property "retention.label" is specified, the Snapshot copies that have a SnapMirror label matching this property is transferred to the SnapMirror destination.

- When the property "retention.creation_schedule" is specified, Snapshot copies are directly created on the SnapMirror destination. The Snapshot copies created have the same content as the latest Snapshot copy already present on the SnapMirror destination.

Required properties

- `name` - Name of the new SnapMirror policy.

Recommended optional properties

- `svm.name` or `svm.uuid` - Name or UUID of the SVM that owns the SnapMirror policy.

Default property values

If not specified in POST, the following default property values are assigned:

- `type` - *async*
- `sync_type` - *sync* (when `type` is *sync*)
- `network_compression_enabled` - *false*
- `throttle` - *0*
- `identity_preservation` - *exclude_network_and_protocol_config*

Related ONTAP commands

- `snapmirror policy create`

Examples

Creating a SnapMirror policy of type "sync"

```
POST "/api/snapmirror/policies/" '{"name": "policy1", "svm.name": "VS0",
"type": "sync", "sync_type": "sync"}'
```

Creating a SnapMirror policy of type "async" with retention values

```
POST "/api/snapmirror/policies" '{"name": "policy_ret", "svm": {"name":
"vs1"}, "retention": {"label": ["smcreate"], "count": ["2"],
"creation_schedule": ["weekly"]}}'
```

Creating a SnapMirror policy of type "async"

```
POST "/api/snapmirror/policies" '{"name": "newPolicy", "svm":{"name" :
"vs1"}, "type": "async"}'
```

Learn more

- DOC /snapmirror/policies

Parameters

Name	Type	In	Required	Description
return_timeout	integer	query	False	The number of seconds to allow the call to execute before returning. When doing a POST, PATCH, or DELETE operation on a single record, the default is 0 seconds. This means that if an asynchronous operation is started, the server immediately returns HTTP code 202 (Accepted) along with a link to the job. If a non-zero value is specified for POST, PATCH, or DELETE operations, ONTAP waits that length of time to see if the job completes so it can return something other than 202.

Request Body

Name	Type	Description
_links	_links	
comment	string	Comment associated with the policy.
identity_preservation	string	Specifies which configuration of the source SVM is replicated to destination. This field is applicable only for SVM data protection and async policies.
name	string	

Name	Type	Description
network_compression_enabled	boolean	Specifies whether network compression is enabled for transfers. This is applicable only to async policies.
retention	array[snapmirror_policy_rule]	Policy on Snapshot copy retention. This is applicable only to async policies.
scope	string	Set to "svm" for policies owned by an SVM, otherwise set to "cluster".
svm	svm	SVM, applies only to SVM-scoped objects.
sync_common_snapshot_schedule	sync_common_snapshot_schedule	Schedule used to create common Snapshot copies for synchronous relationships.
sync_type	string	
throttle	integer	Throttle in KB/s. Default to unlimited.
transfer_schedule	transfer_schedule	The schedule used to update asynchronous relationships.
type	string	
uuid	string	

Example request

```json
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "comment": "string",
  "identity_preservation": "string",
  "name": "MirrorAndVault",
  "retention": [
    {
      "count": 7,
      "creation_schedule": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "weekly",
        "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
      },
      "label": "hourly",
      "prefix": "string"
    }
  ],
  "scope": "string",
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  },
  "sync_common_snapshot_schedule": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "weekly",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  },
```

```
      "sync_type": "string",
      "throttle": 0,
      "transfer_schedule": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "weekly",
        "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
      },
      "type": "string",
      "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
  }
```

Response

```
Status: 202, Accepted
```

Name	Type	Description
job	job_link	

Example response

```
{
  "job": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "uuid": "string"
  }
}
```

Error

```
Status: Default
```

ONTAP Error Response codes

Error code	Description
13303850	Invalid input parameter

Name	Type	Description
error	error	

Example error

```
{
  "error": {
    "arguments": [
      {
        "code": "string",
        "message": "string"
      }
    ],
    "code": "4",
    "message": "entry doesn't exist",
    "target": "uuid"
  }
}
```

Definitions

See Definitions

href

Name	Type	Description
href	string	

_links

Name	Type	Description
self	href	

creation_schedule

Schedule used to create Snapshot copies on the destination for long term retention.

Name	Type	Description
_links	_links	
name	string	Job schedule name
uuid	string	Job schedule UUID

snapmirror_policy_rule

SnapMirror policy rule for retention.

Name	Type	Description
count	integer	Number of Snapshot copies to be kept for retention.
creation_schedule	creation_schedule	Schedule used to create Snapshot copies on the destination for long term retention.
label	string	Snapshot copy label
prefix	string	Specifies the prefix for the Snapshot copy name to be created as per the schedule. If no value is specified, then the label is used as the prefix.

svm

SVM, applies only to SVM-scoped objects.

Name	Type	Description
_links	_links	
name	string	The name of the SVM.
uuid	string	The unique identifier of the SVM.

sync_common_snapshot_schedule

Schedule used to create common Snapshot copies for synchronous relationships.

Name	Type	Description
_links	_links	
name	string	Job schedule name
uuid	string	Job schedule UUID

transfer_schedule

The schedule used to update asynchronous relationships.

Name	Type	Description
_links	_links	
name	string	Job schedule name
uuid	string	Job schedule UUID

snapmirror_policy

SnapMirror policy information

Name	Type	Description
_links	_links	
comment	string	Comment associated with the policy.
identity_preservation	string	Specifies which configuration of the source SVM is replicated to destination. This field is applicable only for SVM data protection and async policies.
name	string	

Name	Type	Description
network_compression_enabled	boolean	Specifies whether network compression is enabled for transfers. This is applicable only to async policies.
retention	array[snapmirror_policy_rule]	Policy on Snapshot copy retention. This is applicable only to async policies.
scope	string	Set to "svm" for policies owned by an SVM, otherwise set to "cluster".
svm	svm	SVM, applies only to SVM-scoped objects.
sync_common_snapshot_schedule	sync_common_snapshot_schedule	Schedule used to create common Snapshot copies for synchronous relationships.
sync_type	string	
throttle	integer	Throttle in KB/s. Default to unlimited.
transfer_schedule	transfer_schedule	The schedule used to update asynchronous relationships.
type	string	
uuid	string	

job_link

Name	Type	Description
_links	_links	
uuid	string	The UUID of the asynchronous job that is triggered by a POST, PATCH, or DELETE operation.

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

error

Name	Type	Description
arguments	array[error_arguments]	Message arguments
code	string	Error code
message	string	Error message
target	string	The target parameter that caused the error.

Delete a SnapMirror policy

DELETE /snapmirror/policies/{uuid}

Deletes a SnapMirror policy.

Related ONTAP commands

* snapmirror policy delete

Example

```
DELETE "/api/snapmirror/policies/510c15d4-f9e6-11e8-bdb5-0050568e12c2"
```

Learn more

* DOC /snapmirror/policies

Parameters

Name	Type	In	Required	Description
uuid	string	path	True	Policy UUID

Name	Type	In	Required	Description
return_timeout	integer	query	False	The number of seconds to allow the call to execute before returning. When doing a POST, PATCH, or DELETE operation on a single record, the default is 0 seconds. This means that if an asynchronous operation is started, the server immediately returns HTTP code 202 (Accepted) along with a link to the job. If a non-zero value is specified for POST, PATCH, or DELETE operations, ONTAP waits that length of time to see if the job completes so it can return something other than 202.

Response

```
Status: 202, Accepted
```

Name	Type	Description
job	job_link	

Example response

```
{
  "job": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "uuid": "string"
  }
}
```

Error

```
Status: Default, Error
```

Name	Type	Description
error	error	

Example error

```
{
  "error": {
    "arguments": [
      {
        "code": "string",
        "message": "string"
      }
    ],
    "code": "4",
    "message": "entry doesn't exist",
    "target": "uuid"
  }
}
```

Definitions

href

Name	Type	Description
href	string	

_links

Name	Type	Description
self	href	

job_link

Name	Type	Description
_links	_links	
uuid	string	The UUID of the asynchronous job that is triggered by a POST, PATCH, or DELETE operation.

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

error

Name	Type	Description
arguments	array[error_arguments]	Message arguments
code	string	Error code
message	string	Error message
target	string	The target parameter that caused the error.

Retrieve a specific SnapMirror policy

GET /snapmirror/policies/{uuid}

Retrieves a specific SnapMirror policy.

Example

```
GET "/api/snapmirror/policies/567aaac0-f863-11e8-a666-0050568e12c2"
```

Learn more

- DOC /snapmirror/policies

Parameters

Name	Type	In	Required	Description
uuid	string	path	True	Policy UUID
fields	array[string]	query	False	Specify the fields to return.

Response

```
Status: 200, Ok
```

Name	Type	Description
_links	_links	
comment	string	Comment associated with the policy.
identity_preservation	string	Specifies which configuration of the source SVM is replicated to destination. This field is applicable only for SVM data protection and async policies.
name	string	
network_compression_enabled	boolean	Specifies whether network compression is enabled for transfers. This is applicable only to async policies.
retention	array[snapmirror_policy_rule]	Policy on Snapshot copy retention. This is applicable only to async policies.

Name	Type	Description
scope	string	Set to "svm" for policies owned by an SVM, otherwise set to "cluster".
svm	svm	SVM, applies only to SVM-scoped objects.
sync_common_snapshot_schedule	sync_common_snapshot_schedule	Schedule used to create common Snapshot copies for synchronous relationships.
sync_type	string	
throttle	integer	Throttle in KB/s. Default to unlimited.
transfer_schedule	transfer_schedule	The schedule used to update asynchronous relationships.
type	string	
uuid	string	

Example response

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "comment": "string",
  "identity_preservation": "string",
  "name": "MirrorAndVault",
  "retention": [
    {
      "count": 7,
      "creation_schedule": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "weekly",
        "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
      },
      "label": "hourly",
      "prefix": "string"
    }
  ],
  "scope": "string",
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  },
  "sync_common_snapshot_schedule": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "weekly",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  },
```

```
    "sync_type": "string",
    "throttle": 0,
    "transfer_schedule": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "weekly",
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    },
    "type": "string",
    "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
}
```

Error

```
Status: Default
```

ONTAP Error Response codes

Error code	Description
13303842	Invalid SnapMirror policy type.

Name	Type	Description
error	error	

Example error

```json
{
  "error": {
    "arguments": [
      {
        "code": "string",
        "message": "string"
      }
    ],
    "code": "4",
    "message": "entry doesn't exist",
    "target": "uuid"
  }
}
```

Definitions

See Definitions

href

Name	Type	Description
href	string	

_links

Name	Type	Description
self	href	

creation_schedule

Schedule used to create Snapshot copies on the destination for long term retention.

Name	Type	Description
_links	_links	
name	string	Job schedule name
uuid	string	Job schedule UUID

snapmirror_policy_rule

SnapMirror policy rule for retention.

Name	Type	Description
count	integer	Number of Snapshot copies to be kept for retention.
creation_schedule	creation_schedule	Schedule used to create Snapshot copies on the destination for long term retention.
label	string	Snapshot copy label
prefix	string	Specifies the prefix for the Snapshot copy name to be created as per the schedule. If no value is specified, then the label is used as the prefix.

svm

SVM, applies only to SVM-scoped objects.

Name	Type	Description
_links	_links	
name	string	The name of the SVM.
uuid	string	The unique identifier of the SVM.

sync_common_snapshot_schedule

Schedule used to create common Snapshot copies for synchronous relationships.

Name	Type	Description
_links	_links	
name	string	Job schedule name
uuid	string	Job schedule UUID

transfer_schedule

The schedule used to update asynchronous relationships.

Name	Type	Description
_links	_links	
name	string	Job schedule name
uuid	string	Job schedule UUID

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

error

Name	Type	Description
arguments	array[error_arguments]	Message arguments
code	string	Error code
message	string	Error message

Name	Type	Description
target	string	The target parameter that caused the error.

Update the SnapMirror policy

PATCH `/snapmirror/policies/{uuid}`

Updates the SnapMirror policy.

Important notes

- The properties "transfer_schedule" and "throttle" can be modified only if all the SnapMirror relationships associated with the specified SnapMirror policy have the same values.
- The properties "retention.label" and "retention.count" are mandatory if "retention" is provided in the input. The provided "retention.label" is the final list and is replaced with the existing values.
- The value of the "identity_preservation" property cannot be changed if the SnapMirror relationships associated with the policy have different identity_preservation configurations.
- If the SnapMirror policy "identity_preservation" value matches the "identity_preservation" value of the associated SnapMirror relationships, then the "identity_preservation" value can be changed from a higher "identity_preservation" threshold value to a lower "identity_preservation" threshold value but not vice-versa. For example, the threshold value of the "identity_preservation" property can be changed from "full" to "exclude_network_config" to "exclude_network_and_protocol_config", but could not be increased from "exclude_network_and_protocol_config" to "exclude_network_config" to "full".

Related ONTAP commands

- `snapmirror policy modify`

Example

Updating the "retention" property

```
 PATCH "/api/snapmirror/policies/fe65686d-00dc-11e9-b5fb-0050568e3f83"
'{"retention" : {"label" : ["sm_created", "lab2"], "count": ["1","2"],
"creation_schedule": {"name": ["weekly"]}}}'
```

Updating "transfer_schedule", "throttle", and "identity_preservation" properties

```
 PATCH "/api/snapmirror/policies/8aef950b-3bef-11e9-80ac-0050568ea591"
'{"transfer_schedule.name" : "weekly", "throttle" : "100",
"identity_preservation":"exclude_network_and_protocol_config"}'
```

Learn more

- DOC /snapmirror/policies

Parameters

Name	Type	In	Required	Description
uuid	string	path	True	Policy UUID

Request Body

Name	Type	Description
_links	_links	
comment	string	Comment associated with the policy.
identity_preservation	string	Specifies which configuration of the source SVM is replicated to destination. This field is applicable only for SVM data protection and async policies.
network_compression_enabled	boolean	Specifies whether network compression is enabled for transfers. This is applicable only to async policies.
retention	array[snapmirror_policy_rule]	Policy on Snapshot copy retention. This is applicable only to async policies.
scope	string	Set to "svm" for policies owned by an SVM, otherwise set to "cluster".
sync_common_snapshot_schedule	sync_common_snapshot_schedule	Schedule used to create common Snapshot copies for synchronous relationships.
throttle	integer	Throttle in KB/s. Default to unlimited.
transfer_schedule	transfer_schedule	The schedule used to update asynchronous relationships.
uuid	string	

Example request

```json
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "comment": "string",
  "identity_preservation": "string",
  "retention": [
    {
      "count": 7,
      "creation_schedule": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "weekly",
        "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
      },
      "label": "hourly",
      "prefix": "string"
    }
  ],
  "scope": "string",
  "sync_common_snapshot_schedule": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "weekly",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  },
  "throttle": 0,
  "transfer_schedule": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "weekly",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  },
```

```
    "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
  }
```

Response

```
Status: 202, Accepted
```

Name	Type	Description
job	job_link	

Example response

```
{
  "job": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "uuid": "string"
  }
}
```

Error

```
Status: Default
```

ONTAP Error Response codes

Error code	Description
13303842	Invalid SnapMirror policy type
13303843	Conflicting values between SnapMirror policy and SnapMirror relationships for either 'transfer_schedule, throttle or identity_preservation' properties
13303850	Invalid input parameter

Name	Type	Description
error	error	

Example error

```json
{
  "error": {
    "arguments": [
      {
        "code": "string",
        "message": "string"
      }
    ],
    "code": "4",
    "message": "entry doesn't exist",
    "target": "uuid"
  }
}
```

Definitions

See Definitions

href

Name	Type	Description
href	string	

_links

Name	Type	Description
self	href	

creation_schedule

Schedule used to create Snapshot copies on the destination for long term retention.

Name	Type	Description
_links	_links	
name	string	Job schedule name
uuid	string	Job schedule UUID

snapmirror_policy_rule

SnapMirror policy rule for retention.

Name	Type	Description
count	integer	Number of Snapshot copies to be kept for retention.
creation_schedule	creation_schedule	Schedule used to create Snapshot copies on the destination for long term retention.
label	string	Snapshot copy label
prefix	string	Specifies the prefix for the Snapshot copy name to be created as per the schedule. If no value is specified, then the label is used as the prefix.

svm

SVM, applies only to SVM-scoped objects.

Name	Type	Description
_links	_links	
name	string	The name of the SVM.
uuid	string	The unique identifier of the SVM.

sync_common_snapshot_schedule

Schedule used to create common Snapshot copies for synchronous relationships.

Name	Type	Description
_links	_links	
name	string	Job schedule name
uuid	string	Job schedule UUID

transfer_schedule

The schedule used to update asynchronous relationships.

Name	Type	Description
_links	_links	
name	string	Job schedule name
uuid	string	Job schedule UUID

snapmirror_policy

SnapMirror policy information

Name	Type	Description
_links	_links	
comment	string	Comment associated with the policy.
identity_preservation	string	Specifies which configuration of the source SVM is replicated to destination. This field is applicable only for SVM data protection and async policies.

Name	Type	Description
network_compression_enabled	boolean	Specifies whether network compression is enabled for transfers. This is applicable only to async policies.
retention	array[snapmirror_policy_rule]	Policy on Snapshot copy retention. This is applicable only to async policies.
scope	string	Set to "svm" for policies owned by an SVM, otherwise set to "cluster".
sync_common_snapshot_schedule	sync_common_snapshot_schedule	Schedule used to create common Snapshot copies for synchronous relationships.
throttle	integer	Throttle in KB/s. Default to unlimited.
transfer_schedule	transfer_schedule	The schedule used to update asynchronous relationships.
uuid	string	

job_link

Name	Type	Description
_links	_links	
uuid	string	The UUID of the asynchronous job that is triggered by a POST, PATCH, or DELETE operation.

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

error

Name	Type	Description
arguments	array[error_arguments]	Message arguments
code	string	Error code
message	string	Error message
target	string	The target parameter that caused the error.

Manage SnapMirror relationships

SnapMirror relationships endpoint overview

Overview

This API manages asynchronous extended data protection (XDP) relationships for FlexVols, FlexGroups, or SVMs. It is also used to create a synchronous relationship between FlexVol volumes, which provides zero RPO data protection. It supports the SnapMirror policy types "mirror-vault", "sync-mirror", and "strict-sync-mirror". You can create a relationship between the source and destination which can be used to transfer APIs to perform SnapMirror "restore" operations.

To create FlexVol or FlexGroup SnapMirror relationships, the source volume must be in the "online" state and be a read-write type; the destination volume must be in the "online" state and be a data protection type. To create SnapMirror relationships between SVMs, the source SVM must be of subtype "default" and the destination SVM of subtype "dp_destination". Additionally, SVMs must be peered before a relationship can be established between them. The SnapMirror functionality is subdivided into relationship APIs and transfer APIs:

- SnapMirror relationship APIs are used to create and manage the SnapMirror relationships.
- SnapMirror transfer APIs are used to manage data transfers.

Retrieve information for SnapMirror relationships

GET /snapmirror/relationships

Retrieves information for SnapMirror relationships whose destination endpoints are in the current SVM or the current cluster, depending on the cluster context.

Related ONTAP commands

- `snapmirror show`
- `snapmirror list-destinations`

Examples

The following examples show how to retrieve the list of SnapMirror relationships and the list of SnapMirror destinations.

1. Retrieving the list of SnapMirror relationships. This API must be run on the cluster containing the destination endpoint.

```
GET "/api/snapmirror/relationships/"
```

1. Retrieving the list of SnapMirror destinations on source. This must be run on the cluster containing the source endpoint.

```
GET "/api/snapmirror/relationships/?list_destinations_only=true"
```

Learn more

- DOC /snapmirror/relationships

Parameters

Name	Type	In	Required	Description
list_destinations_only	boolean	query	False	Set to true to show relationships from the source only.
healthy	boolean	query	False	Filter by healthy
source.svm.uuid	string	query	False	Filter by source.svm.uuid
source.svm.name	string	query	False	Filter by source.svm.name
source.path	string	query	False	Filter by source.path
lag_time	string	query	False	Filter by lag_time
exported_snapshot	string	query	False	Filter by exported_snapshot
uuid	string	query	False	Filter by uuid
restore	boolean	query	False	Filter by restore
destination.svm.uuid	string	query	False	Filter by destination.svm.uuid

Name	Type	In	Required	Description
destination.svm.name	string	query	False	Filter by destination.svm.name
destination.path	string	query	False	Filter by destination.path
transfer.bytes_transferred	integer	query	False	Filter by transfer.bytes_transferred
transfer.uuid	string	query	False	Filter by transfer.uuid
transfer.state	string	query	False	Filter by transfer.state
policy.name	string	query	False	Filter by policy.name
policy.type	string	query	False	Filter by policy.type
policy.uuid	string	query	False	Filter by policy.uuid
state	string	query	False	Filter by state
unhealthy_reason.code	integer	query	False	Filter by unhealthy_reason.code
unhealthy_reason.message	string	query	False	Filter by unhealthy_reason.message
unhealthy_reason.parameters	string	query	False	Filter by unhealthy_reason.parameters
fields	array[string]	query	False	Specify the fields to return.
max_records	integer	query	False	Limit the number of records returned.

Name	Type	In	Required	Description
return_records	boolean	query	False	The default is true for GET calls. When set to false, only the number of records is returned.
return_timeout	integer	query	False	The number of seconds to allow the call to execute before returning. When iterating over a collection, the default is 15 seconds. ONTAP returns earlier if either max records or the end of the collection is reached.
order_by	array[string]	query	False	Order results by specified fields and optional [asc

Response

```
Status: 200, Ok
```

Name	Type	Description
_links	_links	
num_records	integer	Number of records
records	array[snapmirror_relationship]	

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "destination": {
        "path": "svm1:volume1",
        "svm": {
          "_links": {
            "self": {
              "href": "/api/resourcelink"
            }
          },
          "name": "svm1",
          "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
        }
      },
      "exported_snapshot": "string",
      "lag_time": "PT8H35M42S",
      "policy": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "MirrorAndVault",
        "type": "string",
        "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
      },
      "restore_to_snapshot": "string",
      "source": {
        "path": "svm1:volume1",
        "svm": {
          "_links": {
            "self": {
              "href": "/api/resourcelink"
            }
          },
```

```
                    "name": "svm1",
                    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
                }
            },
            "state": "string",
            "transfer": {
                "_links": {
                    "self": {
                        "href": "/api/resourcelink"
                    }
                },
                "state": "string",
                "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
            },
            "unhealthy_reason": [
                {
                    "code": "6621444",
                    "message": "Failed to complete update operation on one or
more item relationships.",
                    "parameters": []
                },
                {
                    "code": "6621445",
                    "message": "Group Update failed",
                    "parameters": []
                }
            ],
            "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
        }
    ]
}
```

Error

```
 Status: Default
```

ONTAP Error Response codes

Error code	Description
13303825	Could not retrieve information for the SnapMirror policy type
13303817	Unknown value for the Snapmirror State

Name	Type	Description
error	error	

Example error

```
{
  "error": {
    "arguments": [
      {
        "code": "string",
        "message": "string"
      }
    ],
    "code": "4",
    "message": "entry doesn't exist",
    "target": "uuid"
  }
}
```

Definitions

See Definitions

href

Name	Type	Description
href	string	

_links

Name	Type	Description
next	href	
self	href	

_links

Name	Type	Description
self	href	

svm

Name	Type	Description
_links	_links	
name	string	The name of the SVM.
uuid	string	The unique identifier of the SVM.

snapmirror_endpoint

Endpoint of a SnapMirror relationship.

Name	Type	Description
path	string	ONTAP FlexVol/FlexGroup - svm1:volume1 ONTAP SVM - svm1: • example: svm1:volume1 • readCreate: 1
svm	svm	

policy

Basic policy information of the relationship.

Name	Type	Description
_links	_links	
name	string	
type	string	
uuid	string	

transfer

Basic information on the current transfer.

Name	Type	Description
_links	_links	
bytes_transferred	integer	Bytes transferred.
state	string	
uuid	string	

snapmirror_error

SnapMirror error

Name	Type	Description
code	integer	Error code
message	string	Error message
parameters	array[string]	Parameters for the error message

snapmirror_relationship

SnapMirror relationship information

Name	Type	Description
destination	snapmirror_endpoint	Endpoint of a SnapMirror relationship.
exported_snapshot	string	Snapshot copy exported to clients on destination.
healthy	boolean	Is the relationship healthy?
lag_time	string	Time since the exported Snapshot copy was created.

Name	Type	Description
policy	policy	Basic policy information of the relationship.
preserve	boolean	Set to true on resync to preserve Snapshot copies on the destination that are newer than the latest common Snapshot copy. This field is applicable only for relationships with FlexGroup or FlexVol endpoints and when the PATCH state is "snapmirrored".
quick_resync	boolean	Set to true to reduce resync time by not preserving storage efficiency. This field is applicable only for relationships with FlexVol endpoints and when the PATCH state is "snapmirrored".
recover_after_break	boolean	Set to true to recover from a failed SnapMirror break operation on a FlexGroup relationship. This restores all destination FlexGroup constituents to the latest Snapshot copy, and any writes to the read-write constituents are lost. This field is applicable only for SnapMirror relationships with FlexGroup endpoints and when the PATCH state is "broken_off".
restore	boolean	Set to true to create a relationship for restore. To trigger restore-transfer, use transfers POST on the restore relationship.
restore_to_snapshot	string	Specifies the Snapshot copy to restore to on the destination after a break operation. This field is applicable only for SnapMirror relationships with FlexVol endpoints and when the PATCH state is "broken_off".
source	snapmirror_endpoint	Endpoint of a SnapMirror relationship.

Name	Type	Description
state	string	State of the relationship. To initialize the relationship, PATCH the state to "snapmirrored". To break the relationship, PATCH the state to "broken_off". To resync the broken relationship, PATCH the state to "snapmirrored" for relationships with async policy type or "in_sync" for relationships with sync policy type. To pause the relationship, suspending further transfers, PATCH the state to "paused". To resume transfers for a paused relationship, PATCH the state to "snapmirrored" or "in_sync". The entries "in_sync", "out_of_sync", and "synchronizing" are only applicable to relationships of the sync policy type. A PATCH call on the state change only triggers the transition to the specified state. You must poll on the "state", "healthy" and "unhealthy_reason" fields using GET to determine if the transition is successful.
transfer	transfer	Basic information on the current transfer.
unhealthy_reason	array[snapmirror_error]	Reason the relationship is not healthy. It is a concatenation of up to four levels of error messages.
uuid	string	

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

error

Name	Type	Description
arguments	array[error_arguments]	Message arguments
code	string	Error code
message	string	Error message
target	string	The target parameter that caused the error.

Create a SnapMirror relationship

POST `/snapmirror/relationships`

Creates a SnapMirror relationship. This API must be executed on the cluster containing the destination endpoint.

Required properties

- `source.path` - Path to the source endpoint of the SnapMirror relationship.
- `destination.path` - Path to the destination endpoint of the SnapMirror relationship.

Recommended optional properties

- `policy.name` or `policy.uuid` - Policy governing the SnapMirror relationship.

Default property values

If not specified in POST, the following default property values are assigned:

- `policy.name` - *MirrorAndVault*
- `restore` - *false*

Related ONTAP commands

- `snapmirror create`

Examples

The following examples show how to create FlexVol, FlexGroup and SVM SnapMirror relationships. Note that the source SVM name should be the local name of the peer SVM.

Creating a FlexVol SnapMirror relationship of type XDP.

```
  POST "/api/snapmirror/relationships/" '{"source": {"path":
"test_vserv_src:src_vol_rw"}, "destination": { "path":
"test_vserv_dst:dst_vol_rw"}}'
```

Creating a FlexGroup SnapMirror relationship of type XDP.

```
  POST "/api/snapmirror/relationships/" '{"source": {"path":
"test_vserv_src:source_flexgrp"}, "destination": { "path":
"test_vserv_dst:dest_flexgrp"}}'
```

Creating a SVM SnapMirror relationship of type XDP.

```
  POST "/api/snapmirror/relationships/" '{"source": { "path": "src_svm:"},
"destination": { "path": "dst_svm:"}}'
```

Creating a SnapMirror relationship in order to restore from a destination.

```
  POST "/api/snapmirror/relationships/" '{"source": {"path":
"test_vserv_src:src_vol_rw"}, "destination": { "path":
"test_vserv_dst:dst_vol_rw"}, "restore": "true"}'
```

Learn more

• DOC /snapmirror/relationships

Parameters

Name	Type	In	Required	Description
return_timeout	integer	query	False	The number of seconds to allow the call to execute before returning. When doing a POST, PATCH, or DELETE operation on a single record, the default is 0 seconds. This means that if an asynchronous operation is started, the server immediately returns HTTP code 202 (Accepted) along with a link to the job. If a non-zero value is specified for POST, PATCH, or DELETE operations, ONTAP waits that length of time to see if the job completes so it can return something other than 202.

Request Body

Name	Type	Description
destination	snapmirror_endpoint	Endpoint of a SnapMirror relationship.
exported_snapshot	string	Snapshot copy exported to clients on destination.
healthy	boolean	Is the relationship healthy?
lag_time	string	Time since the exported Snapshot copy was created.
policy	policy	Basic policy information of the relationship.

Name	Type	Description
preserve	boolean	Set to true on resync to preserve Snapshot copies on the destination that are newer than the latest common Snapshot copy. This field is applicable only for relationships with FlexGroup or FlexVol endpoints and when the PATCH state is "snapmirrored".
quick_resync	boolean	Set to true to reduce resync time by not preserving storage efficiency. This field is applicable only for relationships with FlexVol endpoints and when the PATCH state is "snapmirrored".
recover_after_break	boolean	Set to true to recover from a failed SnapMirror break operation on a FlexGroup relationship. This restores all destination FlexGroup constituents to the latest Snapshot copy, and any writes to the read-write constituents are lost. This field is applicable only for SnapMirror relationships with FlexGroup endpoints and when the PATCH state is "broken_off".
restore	boolean	Set to true to create a relationship for restore. To trigger restore-transfer, use transfers POST on the restore relationship.
restore_to_snapshot	string	Specifies the Snapshot copy to restore to on the destination after a break operation. This field is applicable only for SnapMirror relationships with FlexVol endpoints and when the PATCH state is "broken_off".
source	snapmirror_endpoint	Endpoint of a SnapMirror relationship.
transfer	transfer	Basic information on the current transfer.

Name	Type	Description
unhealthy_reason	array[snapmirror_error]	Reason the relationship is not healthy. It is a concatenation of up to four levels of error messages.
uuid	string	

Example request

```json
{
  "destination": {
    "path": "svm1:volume1",
    "svm": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "svm1",
      "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
    }
  },
  "exported_snapshot": "string",
  "lag_time": "PT8H35M42S",
  "policy": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "MirrorAndVault",
    "type": "string",
    "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
  },
  "restore_to_snapshot": "string",
  "source": {
    "path": "svm1:volume1",
    "svm": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "svm1",
      "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
    }
  },
  "transfer": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
```

```
      "state": "string",
      "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
    },
    "unhealthy_reason": [
      {
        "code": "6621444",
        "message": "Failed to complete update operation on one or more
item relationships.",
        "parameters": []
      },
      {
        "code": "6621445",
        "message": "Group Update failed",
        "parameters": []
      }
    ],
    "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
  }
```

Response

```
Status: 202, Accepted
```

Name	Type	Description
job	job_link	

Example response

```
{
  "job": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "uuid": "string"
  }
}
```

Error

```
Status: Default
```

ONTAP Error Response codes

Error code	Description
13303841	Cross platform relationships are not allowed
13303821	Invalid SnapMirror policy UUID
13303819	Could not retrieve SnapMirror policy information
13303852	destination.path provided does not contain \":\"
13303853	Restore relationships are not supported for SVM-DR endpoints

Name	Type	Description
error	error	

Example error

```
{
  "error": {
    "arguments": [
      {
        "code": "string",
        "message": "string"
      }
    ],
    "code": "4",
    "message": "entry doesn't exist",
    "target": "uuid"
  }
}
```

Definitions

See Definitions

href

Name	Type	Description
href	string	

_links

Name	Type	Description
self	href	

svm

Name	Type	Description
_links	_links	
name	string	The name of the SVM.
uuid	string	The unique identifier of the SVM.

snapmirror_endpoint

Endpoint of a SnapMirror relationship.

Name	Type	Description
path	string	ONTAP FlexVol/FlexGroup - svm1:volume1 ONTAP SVM - svm1: • example: svm1:volume1 • readCreate: 1
svm	svm	

policy

Basic policy information of the relationship.

Name	Type	Description
_links	_links	
name	string	
type	string	
uuid	string	

transfer

Basic information on the current transfer.

Name	Type	Description
_links	_links	
bytes_transferred	integer	Bytes transferred.
state	string	
uuid	string	

snapmirror_error

SnapMirror error

Name	Type	Description
code	integer	Error code
message	string	Error message
parameters	array[string]	Parameters for the error message

snapmirror_relationship

SnapMirror relationship information

Name	Type	Description
destination	snapmirror_endpoint	Endpoint of a SnapMirror relationship.
exported_snapshot	string	Snapshot copy exported to clients on destination.
healthy	boolean	Is the relationship healthy?
lag_time	string	Time since the exported Snapshot copy was created.
policy	policy	Basic policy information of the relationship.

Name	Type	Description
preserve	boolean	Set to true on resync to preserve Snapshot copies on the destination that are newer than the latest common Snapshot copy. This field is applicable only for relationships with FlexGroup or FlexVol endpoints and when the PATCH state is "snapmirrored".
quick_resync	boolean	Set to true to reduce resync time by not preserving storage efficiency. This field is applicable only for relationships with FlexVol endpoints and when the PATCH state is "snapmirrored".
recover_after_break	boolean	Set to true to recover from a failed SnapMirror break operation on a FlexGroup relationship. This restores all destination FlexGroup constituents to the latest Snapshot copy, and any writes to the read-write constituents are lost. This field is applicable only for SnapMirror relationships with FlexGroup endpoints and when the PATCH state is "broken_off".
restore	boolean	Set to true to create a relationship for restore. To trigger restore-transfer, use transfers POST on the restore relationship.
restore_to_snapshot	string	Specifies the Snapshot copy to restore to on the destination after a break operation. This field is applicable only for SnapMirror relationships with FlexVol endpoints and when the PATCH state is "broken_off".
source	snapmirror_endpoint	Endpoint of a SnapMirror relationship.
transfer	transfer	Basic information on the current transfer.

Name	Type	Description
unhealthy_reason	array[snapmirror_error]	Reason the relationship is not healthy. It is a concatenation of up to four levels of error messages.
uuid	string	

job_link

Name	Type	Description
_links	_links	
uuid	string	The UUID of the asynchronous job that is triggered by a POST, PATCH, or DELETE operation.

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

error

Name	Type	Description
arguments	array[error_arguments]	Message arguments
code	string	Error code
message	string	Error message
target	string	The target parameter that caused the error.

Delete a SnapMirror relationship

DELETE /snapmirror/relationships/{uuid}

Deletes a SnapMirror relationship.

Important notes

- The "destination_only", "source_only", and "source_info_only" flags are mutually exclusive. If no flag is specified, the relationship is deleted from both the source and destination and all common Snapshot copies between the source and destination are also deleted.

- For a restore relationship, the call must be executed on the cluster containing the destination endpoint without specifying the destination_only, source_only, or source_info_only parameters.

- Additionally, ensure that there are no ongoing transfers on a restore relationship before calling this API.

Related ONTAP commands

- `snapmirror delete`

- `snapmirror release`

Examples

The following examples show how to delete the relationship from both the source and destination, the destination only, and the source only.

Deleting the relationship from both the source and destination. This API must be run on the cluster containing the destination endpoint.

```
DELETE "/api/snapmirror/relationships/4512b2d2-fd60-11e8-8929-
005056bbfe52"
```

Deleting the relationship on the destination only. This API must be run on the cluster containing the destination endpoint.

```
DELETE "/api/snapmirror/relationships/fd1e0697-02ba-11e9-acc7-
005056a7697f/?destination_only=true"
```

Deleting the relationship on the source only. This API must be run on the cluster containing the source endpoint.

```
DELETE "/api/snapmirror/relationships/93e828ba-02bc-11e9-acc7-
005056a7697f/?source_only=true"
```

Deleting the source information only. This API must be run on the cluster containing the source endpoint. This does not delete the common Snapshot copies between the source and destination.

```
DELETE "/api/snapmirror/relationships/caf545a2-fc60-11e8-aa13-
005056a707ff/?source_info_only=true"
```

Learn more

- DOC /snapmirror/relationships

Parameters

Name	Type	In	Required	Description
uuid	string	path	True	Relationship UUID
destination_only	boolean	query	False	Deletes a relationship on the destination only. This parameter is applicable only when the call is executed on the cluster that contains the destination endpoint.
source_only	boolean	query	False	Deletes a relationship on the source only. This parameter is applicable only when the call is executed on the cluster that contains the source endpoint.
source_info_only	boolean	query	False	Deletes relationship information on the source only. This parameter is applicable only when the call is executed on the cluster that contains the source endpoint.

Name	Type	In	Required	Description
return_timeout	integer	query	False	The number of seconds to allow the call to execute before returning. When doing a POST, PATCH, or DELETE operation on a single record, the default is 0 seconds. This means that if an asynchronous operation is started, the server immediately returns HTTP code 202 (Accepted) along with a link to the job. If a non-zero value is specified for POST, PATCH, or DELETE operations, ONTAP waits that length of time to see if the job completes so it can return something other than 202.

Response

```
Status: 202, Accepted
```

Name	Type	Description
job	job_link	

Example response

```
{
  "job": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "uuid": "string"
  }
}
```

Error

```
Status: Default
```

ONTAP Error Response codes

Error code	Description
13303825	Could not retrieve information for the SnapMirror policy type
13303814	Could not retrieve the source or destination SVM UUID
13303815	Could not retrieve information for the peer cluster
13303822	SnapMirror release has failed
13303813	SnapMirror release was successful but delete has failed
13303854	Cleanup of restore relationship failed
13303855	DELETE call on a restore relationship does not support the given flags

Name	Type	Description
error	error	

Example error

```json
{
  "error": {
    "arguments": [
      {
        "code": "string",
        "message": "string"
      }
    ],
    "code": "4",
    "message": "entry doesn't exist",
    "target": "uuid"
  }
}
```

Definitions

See Definitions

href

Name	Type	Description
href	string	

_links

Name	Type	Description
self	href	

job_link

Name	Type	Description
_links	_links	
uuid	string	The UUID of the asynchronous job that is triggered by a POST, PATCH, or DELETE operation.

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

error

Name	Type	Description
arguments	array[error_arguments]	Message arguments
code	string	Error code
message	string	Error message
target	string	The target parameter that caused the error.

Retrieve a SnapMirror relationship

GET `/snapmirror/relationships/{uuid}`

Retrieves a SnapMirror relationship.

Related ONTAP commands

- `snapmirror show`
- `snapmirror list-destinations`

Example

```
GET "/api/snapmirror/relationships/caf545a2-fc60-11e8-aa13-005056a707ff/"
```

Learn more

- DOC /snapmirror/relationships

Parameters

Name	Type	In	Required	Description
uuid	string	path	True	Relationship UUID
list_destinations_only	boolean	query	False	Set to true to show relationships from the source only.
fields	array[string]	query	False	Specify the fields to return.

Response

```
Status: 200, Ok
```

Name	Type	Description
destination	snapmirror_endpoint	Endpoint of a SnapMirror relationship.
exported_snapshot	string	Snapshot copy exported to clients on destination.
healthy	boolean	Is the relationship healthy?
lag_time	string	Time since the exported Snapshot copy was created.

Name	Type	Description
policy	policy	Basic policy information of the relationship.
preserve	boolean	Set to true on resync to preserve Snapshot copies on the destination that are newer than the latest common Snapshot copy. This field is applicable only for relationships with FlexGroup or FlexVol endpoints and when the PATCH state is "snapmirrored".
quick_resync	boolean	Set to true to reduce resync time by not preserving storage efficiency. This field is applicable only for relationships with FlexVol endpoints and when the PATCH state is "snapmirrored".
recover_after_break	boolean	Set to true to recover from a failed SnapMirror break operation on a FlexGroup relationship. This restores all destination FlexGroup constituents to the latest Snapshot copy, and any writes to the read-write constituents are lost. This field is applicable only for SnapMirror relationships with FlexGroup endpoints and when the PATCH state is "broken_off".
restore	boolean	Set to true to create a relationship for restore. To trigger restore-transfer, use transfers POST on the restore relationship.
restore_to_snapshot	string	Specifies the Snapshot copy to restore to on the destination after a break operation. This field is applicable only for SnapMirror relationships with FlexVol endpoints and when the PATCH state is "broken_off".
source	snapmirror_endpoint	Endpoint of a SnapMirror relationship.

Name	Type	Description
state	string	State of the relationship. To initialize the relationship, PATCH the state to "snapmirrored". To break the relationship, PATCH the state to "broken_off". To resync the broken relationship, PATCH the state to "snapmirrored" for relationships with async policy type or "in_sync" for relationships with sync policy type. To pause the relationship, suspending further transfers, PATCH the state to "paused". To resume transfers for a paused relationship, PATCH the state to "snapmirrored" or "in_sync". The entries "in_sync", "out_of_sync", and "synchronizing" are only applicable to relationships of the sync policy type. A PATCH call on the state change only triggers the transition to the specified state. You must poll on the "state", "healthy" and "unhealthy_reason" fields using GET to determine if the transition is successful.
transfer	transfer	Basic information on the current transfer.
unhealthy_reason	array[snapmirror_error]	Reason the relationship is not healthy. It is a concatenation of up to four levels of error messages.
uuid	string	

```json
{
  "destination": {
    "path": "svm1:volume1",
    "svm": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "svm1",
      "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
    }
  },
  "exported_snapshot": "string",
  "lag_time": "PT8H35M42S",
  "policy": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "MirrorAndVault",
    "type": "string",
    "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
  },
  "restore_to_snapshot": "string",
  "source": {
    "path": "svm1:volume1",
    "svm": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "svm1",
      "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
    }
  },
  "state": "string",
  "transfer": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
```

```
      },
      "state": "string",
      "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
    },
    "unhealthy_reason": [
      {
        "code": "6621444",
        "message": "Failed to complete update operation on one or more
  item relationships.",
        "parameters": []
      },
      {
        "code": "6621445",
        "message": "Group Update failed",
        "parameters": []
      }
    ],
    "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
  }
```

Error

```
Status: Default
```

ONTAP Error Response codes

Error code	Description
13303825	Could not retrieve information for the SnapMirror policy type
13303817	Unknown value for the Snapmirror State

Name	Type	Description
error	error	

Example error

```
{
  "error": {
    "arguments": [
      {
        "code": "string",
        "message": "string"
      }
    ],
    "code": "4",
    "message": "entry doesn't exist",
    "target": "uuid"
  }
}
```

Definitions

See Definitions

href

Name	Type	Description
href	string	

_links

Name	Type	Description
self	href	

svm

Name	Type	Description
_links	_links	
name	string	The name of the SVM.
uuid	string	The unique identifier of the SVM.

snapmirror_endpoint

Endpoint of a SnapMirror relationship.

Name	Type	Description
path	string	ONTAP FlexVol/FlexGroup - svm1:volume1 ONTAP SVM - svm1: • example: svm1:volume1 • readCreate: 1
svm	svm	

policy

Basic policy information of the relationship.

Name	Type	Description
_links	_links	
name	string	
type	string	
uuid	string	

transfer

Basic information on the current transfer.

Name	Type	Description
_links	_links	
bytes_transferred	integer	Bytes transferred.
state	string	
uuid	string	

snapmirror_error

SnapMirror error

Name	Type	Description
code	integer	Error code
message	string	Error message
parameters	array[string]	Parameters for the error message

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

error

Name	Type	Description
arguments	array[error_arguments]	Message arguments
code	string	Error code
message	string	Error message
target	string	The target parameter that caused the error.

Update a SnapMirror relationship

PATCH /snapmirror/relationships/{uuid}

Updates a SnapMirror relationship. This API is used to initiate SnapMirror operations such as "initialize", "resync", "break", "quiesce", and "resume" by specifying the appropriate value for the "state" field. It is also used to modify the SnapMirror policy associated with the specified relationship.

Related ONTAP commands

- `snapmirror modify`
- `snapmirror initialize`
- `snapmirror resync`
- `snapmirror break`
- `snapmirror quiesce`
- `snapmirror resume`

Examples

The following examples show how to perform the SnapMirror "resync", "initialize", "resume", "quiesce", and "break" operations.

Performing a SnapMirror "resync"

```
PATCH "/api/snapmirror/relationships/98bb2608-fc60-11e8-aa13-
005056a707ff/" '{"state":"snapmirrored"}'
```

Performing a SnapMirror "initialize"

```
PATCH "/api/snapmirror/relationships/98bb2608-fc60-11e8-aa13-
005056a707ff/" '{"state":"snapmirrored"}'
```

Performing a SnapMirror "resume"

```
PATCH "/api/snapmirror/relationships/98bb2608-fc60-11e8-aa13-
005056a707ff/" '{"state":"snapmirrored"}'
```

Performing a SnapMirror "quiesce"

```
PATCH "/api/snapmirror/relationships/98bb2608-fc60-11e8-aa13-
005056a707ff" '{"state":"paused"}'
```

Performing a SnapMirror "break"

```
PATCH "/api/snapmirror/relationships/98bb2608-fc60-11e8-aa13-
005056a707ff" '{"state":"broken_off"}'
```

Updating an associated SnapMirror policy

```
  PATCH "/api/snapmirror/relationships/9e922e65-1818-11e9-8b22-
  005056bbee73/" '{"policy": { "name" : "MirrorAndVaultDiscardNetwork"}}'
```

Learn more

* DOC /snapmirror/relationships

Parameters

Name	Type	In	Required	Description
uuid	string	path	True	Relationship UUID

Request Body

Name	Type	Description
destination	snapmirror_endpoint	Endpoint of a SnapMirror relationship.
exported_snapshot	string	Snapshot copy exported to clients on destination.
healthy	boolean	Is the relationship healthy?
lag_time	string	Time since the exported Snapshot copy was created.
policy	policy	Basic policy information of the relationship.
preserve	boolean	Set to true on resync to preserve Snapshot copies on the destination that are newer than the latest common Snapshot copy. This field is applicable only for relationships with FlexGroup or FlexVol endpoints and when the PATCH state is "snapmirrored".
quick_resync	boolean	Set to true to reduce resync time by not preserving storage efficiency. This field is applicable only for relationships with FlexVol endpoints and when the PATCH state is "snapmirrored".

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Name	Type	Description
recover_after_break	boolean	Set to true to recover from a failed SnapMirror break operation on a FlexGroup relationship. This restores all destination FlexGroup constituents to the latest Snapshot copy, and any writes to the read-write constituents are lost. This field is applicable only for SnapMirror relationships with FlexGroup endpoints and when the PATCH state is "broken_off".
restore_to_snapshot	string	Specifies the Snapshot copy to restore to on the destination after a break operation. This field is applicable only for SnapMirror relationships with FlexVol endpoints and when the PATCH state is "broken_off".
source	snapmirror_endpoint	Endpoint of a SnapMirror relationship.
state	string	State of the relationship. To initialize the relationship, PATCH the state to "snapmirrored". To break the relationship, PATCH the state to "broken_off". To resync the broken relationship, PATCH the state to "snapmirrored" for relationships with async policy type or "in_sync" for relationships with sync policy type. To pause the relationship, suspending further transfers, PATCH the state to "paused". To resume transfers for a paused relationship, PATCH the state to "snapmirrored" or "in_sync". The entries "in_sync", "out_of_sync", and "synchronizing" are only applicable to relationships of the sync policy type. A PATCH call on the state change only triggers the transition to the specified state. You must poll on the "state", "healthy" and "unhealthy_reason" fields using GET to determine if the transition is successful.

Name	Type	Description
transfer	transfer	Basic information on the current transfer.
unhealthy_reason	array[snapmirror_error]	Reason the relationship is not healthy. It is a concatenation of up to four levels of error messages.
uuid	string	

Example request

```json
{
  "destination": {
    "svm": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "svm1",
      "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
    }
  },
  "exported_snapshot": "string",
  "lag_time": "PT8H35M42S",
  "policy": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "MirrorAndVault",
    "type": "string",
    "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
  },
  "restore": null,
  "restore_to_snapshot": "string",
  "source": {
    "svm": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "svm1",
      "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
    }
  },
  "state": "string",
  "transfer": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
```

```
      "state": "string",
      "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
    },
    "unhealthy_reason": [
      {
        "code": "6621444",
        "message": "Failed to complete update operation on one or more
item relationships.",
        "parameters": []
      },
      {
        "code": "6621445",
        "message": "Group Update failed",
        "parameters": []
      }
    ],
    "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
  }
```

Response

```
Status: 202, Accepted
```

Name	Type	Description
job	job_link	

Example response

```
{
  "job": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "uuid": "string"
  }
}
```

Error

```
Status: Default
```

ONTAP Error Response codes

Error code	Description
13303825	Could not retrieve information for the SnapMirror policy type
13303817	Unknown value for the SnapMirror state
13303829	Invalid state
13303830	Transient state
13303831	Invalid state for async SnapMirror relationship
13303834	Given input valid only for FlexGroup SnapMirror relationship
13303835	Given flag is valid only when PATCH state is broken_off
13303836	Given flag is valid only when PATCH state is snapmirrored or in_sync
13303818	Invalid state transition requested
13303828	Given state change is not possible for SVM SnapMirror relationship
13303833	Requested state change is not possible
13303832	SnapMirror relationship is already initialized
13303824	Quiescing the SnapMirror relationship has failed
13303826	Required environment variables are not set
13303827	Internal Error
13303823	Quiesce operation timed out
13303821	Invalid SnapMirror policy name/UUID
13303819	Could not retrieve SnapMirror policy information
13303851	Cannot modify attributes of SnapMirror restore relationship
13303816	Could not retrieve state or status values
13303837	Given flags are valid only if SnapMirror state change is requested
6619546	Destination must be a dp volume
13303808	Transition to broken_off state failed
13303809	Transition to paused state failed

Error code	Description
13303810	Transition to snapmirrored state failed
13303811	Transition from paused state failed
13303820	SnapMirror policy was successfully updated, state transition failed

Name	Type	Description
error	error	

Example error

```
{
  "error": {
    "arguments": [
      {
        "code": "string",
        "message": "string"
      }
    ],
    "code": "4",
    "message": "entry doesn't exist",
    "target": "uuid"
  }
}
```

Definitions

See Definitions

href

Name	Type	Description
href	string	

_links

Name	Type	Description
self	href	

svm

Name	Type	Description
_links	_links	
name	string	The name of the SVM.
uuid	string	The unique identifier of the SVM.

snapmirror_endpoint

Endpoint of a SnapMirror relationship.

Name	Type	Description
svm	svm	

policy

Basic policy information of the relationship.

Name	Type	Description
_links	_links	
name	string	
type	string	
uuid	string	

transfer

Basic information on the current transfer.

Name	Type	Description
_links	_links	

Name	Type	Description
bytes_transferred	integer	Bytes transferred.
state	string	
uuid	string	

snapmirror_error

SnapMirror error

Name	Type	Description
code	integer	Error code
message	string	Error message
parameters	array[string]	Parameters for the error message

snapmirror_relationship

SnapMirror relationship information

Name	Type	Description
destination	snapmirror_endpoint	Endpoint of a SnapMirror relationship.
exported_snapshot	string	Snapshot copy exported to clients on destination.
healthy	boolean	Is the relationship healthy?
lag_time	string	Time since the exported Snapshot copy was created.
policy	policy	Basic policy information of the relationship.
preserve	boolean	Set to true on resync to preserve Snapshot copies on the destination that are newer than the latest common Snapshot copy. This field is applicable only for relationships with FlexGroup or FlexVol endpoints and when the PATCH state is "snapmirrored".

Name	Type	Description
quick_resync	boolean	Set to true to reduce resync time by not preserving storage efficiency. This field is applicable only for relationships with FlexVol endpoints and when the PATCH state is "snapmirrored".
recover_after_break	boolean	Set to true to recover from a failed SnapMirror break operation on a FlexGroup relationship. This restores all destination FlexGroup constituents to the latest Snapshot copy, and any writes to the read-write constituents are lost. This field is applicable only for SnapMirror relationships with FlexGroup endpoints and when the PATCH state is "broken_off".
restore_to_snapshot	string	Specifies the Snapshot copy to restore to on the destination after a break operation. This field is applicable only for SnapMirror relationships with FlexVol endpoints and when the PATCH state is "broken_off".
source	snapmirror_endpoint	Endpoint of a SnapMirror relationship.

Name	Type	Description
state	string	State of the relationship. To initialize the relationship, PATCH the state to "snapmirrored". To break the relationship, PATCH the state to "broken_off". To resync the broken relationship, PATCH the state to "snapmirrored" for relationships with async policy type or "in_sync" for relationships with sync policy type. To pause the relationship, suspending further transfers, PATCH the state to "paused". To resume transfers for a paused relationship, PATCH the state to "snapmirrored" or "in_sync". The entries "in_sync", "out_of_sync", and "synchronizing" are only applicable to relationships of the sync policy type. A PATCH call on the state change only triggers the transition to the specified state. You must poll on the "state", "healthy" and "unhealthy_reason" fields using GET to determine if the transition is successful.
transfer	transfer	Basic information on the current transfer.
unhealthy_reason	array[snapmirror_error]	Reason the relationship is not healthy. It is a concatenation of up to four levels of error messages.
uuid	string	

job_link

Name	Type	Description
_links	_links	
uuid	string	The UUID of the asynchronous job that is triggered by a POST, PATCH, or DELETE operation.

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

error

Name	Type	Description
arguments	array[error_arguments]	Message arguments
code	string	Error code
message	string	Error message
target	string	The target parameter that caused the error.

Manage SnapMirror relationship tranfers

SnapMirror relationships relationship.uuid transfers endpoint overview

Overview

This API is used to manage transfers on an existing SnapMirror relationship.

You can initiate SnapMirror operations such as "initialize", "update", "restore-transfer", and "abort" using this API and it only manages the active transfers on the specified relationship. For the restore relationships, the POST on transfers API triggers "restore-transfer". Successful completion of "restore" also deletes the restore relationship. If the "restore" fails, DELETE on relationships must be called to delete the restore relationship.

Retrieve ongoing SnapMirror transfers for a relationship

GET /snapmirror/relationships/{relationship.uuid}/transfers

Retrieves the list of ongoing SnapMirror transfers for the specified relationship.

Related ONTAP commands

- `snapmirror show`

Example

```
GET "/api/snapmirror/relationships/293baa53-e63d-11e8-bff1-
005056a793dd/transfers"
```

Learn more

* DOC /snapmirror/relationships/{relationship.uuid}/transfers

Parameters

Name	Type	In	Required	Description
relationship.uuid	string	path	True	Relationship UUID
bytes_transferred	integer	query	False	Filter by bytes_transferred
snapshot	string	query	False	Filter by snapshot
uuid	string	query	False	Filter by uuid
checkpoint_size	integer	query	False	Filter by checkpoint_size
relationship.uuid	string	query	False	Filter by relationship.uuid
relationship.restore	boolean	query	False	Filter by relationship.restore
relationship.destination.svm.uuid	string	query	False	Filter by relationship.destination.svm.uuid
relationship.destination.svm.name	string	query	False	Filter by relationship.destination.svm.name
relationship.destination.path	string	query	False	Filter by relationship.destination.path
state	string	query	False	Filter by state
fields	array[string]	query	False	Specify the fields to return.
max_records	integer	query	False	Limit the number of records returned.

Name	Type	In	Required	Description
return_records	boolean	query	False	The default is true for GET calls. When set to false, only the number of records is returned.
return_timeout	integer	query	False	The number of seconds to allow the call to execute before returning. When iterating over a collection, the default is 15 seconds. ONTAP returns earlier if either max records or the end of the collection is reached.
order_by	array[string]	query	False	Order results by specified fields and optional [asc

Response

```
Status: 200, Ok
```

Name	Type	Description
_links	_links	
num_records	integer	Number of records
records	array[snapmirror_transfer]	

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "bytes_transferred": 0,
      "checkpoint_size": 0,
      "relationship": {
        "destination": {
          "path": "svm1:volume1",
          "svm": {
            "_links": {
              "self": {
                "href": "/api/resourcelink"
              }
            },
            "name": "svm1",
            "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
          }
        },
        "uuid": "d2d7ceea-ab52-11e8-855e-00505682a4c7"
      },
      "snapshot": "string",
      "state": "string",
      "storage_efficiency_enabled": null,
      "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
    }
  ]
}
```

Error

```
Status: Default, Error
```

Name	Type	Description
error	error	

Example error

```json
{
  "error": {
    "arguments": [
      {
        "code": "string",
        "message": "string"
      }
    ],
    "code": "4",
    "message": "entry doesn't exist",
    "target": "uuid"
  }
}
```

Definitions

See Definitions

href

Name	Type	Description
href	string	

_links

Name	Type	Description
next	href	
self	href	

_links

Name	Type	Description
self	href	

files

Specifies a file or LUN consisting of a source_path and an optional destination_path. If not specified, the destination_path is the same as the source_path.

Name	Type	Description
destination_path	string	
source_path	string	

svm

Name	Type	Description
_links	_links	
name	string	The name of the SVM.
uuid	string	The unique identifier of the SVM.

snapmirror_endpoint

Endpoint of a SnapMirror relationship.

Name	Type	Description
path	string	ONTAP FlexVol/FlexGroup - svm1:volume1 ONTAP SVM - svm1: • example: svm1:volume1 • readCreate: 1
svm	svm	

relationship

Name	Type	Description
destination	snapmirror_endpoint	Endpoint of a SnapMirror relationship.
restore	boolean	Is the relationship for restore?
uuid	string	

snapmirror_transfer

Snapmirror transfer information

Name	Type	Description
_links	_links	
bytes_transferred	integer	Bytes transferred
checkpoint_size	integer	Amount of data transferred in bytes as recorded in the restart checkpoint.
relationship	relationship	
snapshot	string	Name of Snapshot copy being transferred.
state	string	Status of the transfer. Set PATCH state to "aborted" to abort the transfer. Set PATCH state to "hard_aborted" to abort the transfer and discard the restart checkpoint.
uuid	string	

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

error

Name	Type	Description
arguments	array[error_arguments]	Message arguments
code	string	Error code
message	string	Error message
target	string	The target parameter that caused the error.

Start a SnapMirror transfer operation

POST /snapmirror/relationships/{relationship.uuid}/transfers

Starts a SnapMirror transfer operation. This API initiates a restore operation if the SnapMirror relationship is of type "restore". Otherwise, it intiates a SnapMirror "initialize" operation or "update" operation based on the current SnapMirror state.

Default property values

- storage_efficiency_enabled - *true*

Related ONTAP commands

- snapmirror update
- snapmirror initialize
- snapmirror restore

Examples

The following examples show how to perform SnapMirror "initialize", "update", and "restore" operations.

Performing a SnapMirror initialize or update

```
 POST "/api/snapmirror/relationships/e4e7e130-0279-11e9-b566-
0050568e9909/transfers" '{}'
```

Performing a SnapMirror restore transfer

```
  POST "/api/snapmirror/relationships/c8c62a90-0fef-11e9-b09e-
  0050568e7067/transfers" '{"source-snapshot": "src", "files":
  {"source_path": ["/a1.txt.0"], "destination_path": ["/a1-
  renamed.txt.0"]}}'
```

Learn more

* DOC /snapmirror/relationships/{relationship.uuid}/transfers

Parameters

Name	Type	In	Required	Description
return_timeout	integer	query	False	The number of seconds to allow the call to execute before returning. When doing a POST, PATCH, or DELETE operation on a single record, the default is 0 seconds. This means that if an asynchronous operation is started, the server immediately returns HTTP code 202 (Accepted) along with a link to the job. If a non-zero value is specified for POST, PATCH, or DELETE operations, ONTAP waits that length of time to see if the job completes so it can return something other than 202.
relationship.uuid	string	path	True	Relationship UUID

Request Body

Name	Type	Description
_links	_links	

Name	Type	Description
bytes_transferred	integer	Bytes transferred
checkpoint_size	integer	Amount of data transferred in bytes as recorded in the restart checkpoint.
files	array[files]	This is supported for transfer of restore relationship only. This specifies the list of files or LUNs to be restored. Can contain up to eight files or LUNs.
relationship	relationship	
snapshot	string	Name of Snapshot copy being transferred.
source_snapshot	string	Specifies the Snapshot copy on the source to be transferred to the destination.
storage_efficiency_enabled	boolean	This is supported for transfer of restore relationship only. Set this field to 'false' to turn off storage efficiency for data transferred over the wire and written to the destination.
uuid	string	

Example request

```json
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "bytes_transferred": 0,
  "checkpoint_size": 0,
  "files": [
    {
      "destination_path": "/dirb/file2",
      "source_path": "/dira/file1"
    }
  ],
  "relationship": {
    "destination": {
      "path": "svm1:volume1",
      "svm": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "svm1",
        "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
      }
    },
    "uuid": "d2d7ceea-ab52-11e8-855e-00505682a4c7"
  },
  "snapshot": "string",
  "source_snapshot": "string",
  "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
}
```

Response

```
Status: 201, Created
```

Error

```
Status: Default
```

ONTAP Error Response codes

Error code	Description
13303845	Restore operation failed
13303812	Initialize operation failed
13303844	Update operation failed
13303846	Empty source path file list
13303847	Invalid arguments
6620237	SnapMirror relationship database write failed
6620238	SnapMirror relationship database read failed

Name	Type	Description
error	error	

Example error

```
{
  "error": {
    "arguments": [
      {
        "code": "string",
        "message": "string"
      }
    ],
    "code": "4",
    "message": "entry doesn't exist",
    "target": "uuid"
  }
}
```

Definitions

See Definitions

href

Name	Type	Description
href	string	

_links

Name	Type	Description
self	href	

files

Specifies a file or LUN consisting of a source_path and an optional destination_path. If not specified, the destination_path is the same as the source_path.

Name	Type	Description
destination_path	string	
source_path	string	

svm

Name	Type	Description
_links	_links	
name	string	The name of the SVM.
uuid	string	The unique identifier of the SVM.

snapmirror_endpoint

Endpoint of a SnapMirror relationship.

Name	Type	Description
path	string	ONTAP FlexVol/FlexGroup - svm1:volume1 ONTAP SVM - svm1: - example: svm1:volume1 - readCreate: 1
svm	svm	

relationship

Name	Type	Description
destination	snapmirror_endpoint	Endpoint of a SnapMirror relationship.
restore	boolean	Is the relationship for restore?
uuid	string	

snapmirror_transfer

Snapmirror transfer information

Name	Type	Description
_links	_links	
bytes_transferred	integer	Bytes transferred
checkpoint_size	integer	Amount of data transferred in bytes as recorded in the restart checkpoint.
files	array[files]	This is supported for transfer of restore relationship only. This specifies the list of files or LUNs to be restored. Can contain up to eight files or LUNs.
relationship	relationship	
snapshot	string	Name of Snapshot copy being transferred.
source_snapshot	string	Specifies the Snapshot copy on the source to be transferred to the destination.
storage_efficiency_enabled	boolean	This is supported for transfer of restore relationship only. Set this field to 'false' to turn off storage efficiency for data transferred over the wire and written to the destination.
uuid	string	

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

error

Name	Type	Description
arguments	array[error_arguments]	Message arguments
code	string	Error code
message	string	Error message
target	string	The target parameter that caused the error.

Retrieve attributes of an ongoing SnapMirror transfer

GET /snapmirror/relationships/{relationship.uuid}/transfers/{uuid}

Retrieves the attributes of a specific ongoing SnapMirror transfer.

Related ONTAP commands

- snapmirror show

Example

```
GET "/api/snapmirror/relationships/293baa53-e63d-11e8-bff1-
005056a793dd/transfers/293baa53-e63d-11e8-bff1-005056a793dd"
```

Learn more

- DOC /snapmirror/relationships/{relationship.uuid}/transfers

Parameters

Name	Type	In	Required	Description
relationship.uuid	string	path	True	Relationship UUID
uuid	string	path	True	Transfer UUID

Name	Type	In	Required	Description
fields	array[string]	query	False	Specify the fields to return.

Response

```
Status: 200, Ok
```

Name	Type	Description
_links	_links	
bytes_transferred	integer	Bytes transferred
checkpoint_size	integer	Amount of data transferred in bytes as recorded in the restart checkpoint.
relationship	relationship	
snapshot	string	Name of Snapshot copy being transferred.
state	string	Status of the transfer. Set PATCH state to "aborted" to abort the transfer. Set PATCH state to "hard_aborted" to abort the transfer and discard the restart checkpoint.
uuid	string	

Example response

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "bytes_transferred": 0,
  "checkpoint_size": 0,
  "relationship": {
    "destination": {
      "path": "svm1:volume1",
      "svm": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "svm1",
        "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
      }
    },
    "uuid": "d2d7ceea-ab52-11e8-855e-00505682a4c7"
  },
  "snapshot": "string",
  "state": "string",
  "storage_efficiency_enabled": null,
  "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
}
```

Error

Status: Default, Error

Name	Type	Description
error	error	

Example error

```json
{
  "error": {
    "arguments": [
      {
        "code": "string",
        "message": "string"
      }
    ],
    "code": "4",
    "message": "entry doesn't exist",
    "target": "uuid"
  }
}
```

Definitions

See Definitions

href

Name	Type	Description
href	string	

_links

Name	Type	Description
self	href	

files

Specifies a file or LUN consisting of a source_path and an optional destination_path. If not specified, the destination_path is the same as the source_path.

Name	Type	Description
destination_path	string	
source_path	string	

svm

Name	Type	Description
_links	_links	
name	string	The name of the SVM.
uuid	string	The unique identifier of the SVM.

snapmirror_endpoint

Endpoint of a SnapMirror relationship.

Name	Type	Description
path	string	ONTAP FlexVol/FlexGroup - svm1:volume1 ONTAP SVM - svm1: • example: svm1:volume1 • readCreate: 1
svm	svm	

relationship

Name	Type	Description
destination	snapmirror_endpoint	Endpoint of a SnapMirror relationship.
restore	boolean	Is the relationship for restore?
uuid	string	

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

error

Name	Type	Description
arguments	array[error_arguments]	Message arguments
code	string	Error code
message	string	Error message
target	string	The target parameter that caused the error.

Cancel an ongoing SnapMirror transfer

PATCH /snapmirror/relationships/{relationship.uuid}/transfers/{uuid}

Aborts an ongoing SnapMirror transfer.

Related ONTAP commands

* `snapmirror abort`

Example

```
PATCH "/api/snapmirror/relationships/293baa53-e63d-11e8-bff1-
005056a793dd/transfers/293baa53-e63d-11e8-bff1-005056a793dd"
'{"state":"aborted"}'
```

Learn more

Parameters

Name	Type	In	Required	Description
relationship.uuid	string	path	True	Relationship UUID
uuid	string	path	True	Transfer UUID

Request Body

Name	Type	Description
_links	_links	
bytes_transferred	integer	Bytes transferred
checkpoint_size	integer	Amount of data transferred in bytes as recorded in the restart checkpoint.
relationship	relationship	
snapshot	string	Name of Snapshot copy being transferred.
state	string	Status of the transfer. Set PATCH state to "aborted" to abort the transfer. Set PATCH state to "hard_aborted" to abort the transfer and discard the restart checkpoint.
uuid	string	

Example request

```json
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "bytes_transferred": 0,
  "checkpoint_size": 0,
  "relationship": {
    "destination": {
      "svm": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "svm1",
        "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
      }
    },
    "uuid": "d2d7ceea-ab52-11e8-855e-00505682a4c7"
  },
  "snapshot": "string",
  "state": "string",
  "storage_efficiency_enabled": null,
  "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
}
```

Response

```
Status: 200, Ok
```

Error

```
Status: Default
```

ONTAP Error Response codes

Error code	Description
13303848	Abort of sync SnapMirror is not allowed

Error code	Description
13303849	SnapMirror transfer state is invalid

Name	Type	Description
error	error	

Example error

```
{
  "error": {
    "arguments": [
      {
        "code": "string",
        "message": "string"
      }
    ],
    "code": "4",
    "message": "entry doesn't exist",
    "target": "uuid"
  }
}
```

Definitions

See Definitions

href

Name	Type	Description
href	string	

_links

Name	Type	Description
self	href	

files

Specifies a file or LUN consisting of a source_path and an optional destination_path. If not specified, the destination_path is the same as the source_path.

Name	Type	Description
destination_path	string	
source_path	string	

svm

Name	Type	Description
_links	_links	
name	string	The name of the SVM.
uuid	string	The unique identifier of the SVM.

snapmirror_endpoint

Endpoint of a SnapMirror relationship.

Name	Type	Description
svm	svm	

relationship

Name	Type	Description
destination	snapmirror_endpoint	Endpoint of a SnapMirror relationship.
restore	boolean	Is the relationship for restore?
uuid	string	

snapmirror_transfer

Snapmirror transfer information

Name	Type	Description
_links	_links	
bytes_transferred	integer	Bytes transferred
checkpoint_size	integer	Amount of data transferred in bytes as recorded in the restart checkpoint.
relationship	relationship	
snapshot	string	Name of Snapshot copy being transferred.
state	string	Status of the transfer. Set PATCH state to "aborted" to abort the transfer. Set PATCH state to "hard_aborted" to abort the transfer and discard the restart checkpoint.
uuid	string	

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

error

Name	Type	Description
arguments	array[error_arguments]	Message arguments
code	string	Error code
message	string	Error message
target	string	The target parameter that caused the error.