



Manage SVM migration

ONTAP 9.10.1 REST API Documentation

NetApp
April 02, 2024

Table of Contents

- Manage SVM migration 1
 - SVM migrations endpoint overview 1
 - Overview 1
 - Retrieve SVM migration status 10
 - Create an SVM migration operation 21
 - Retrieve transfer status of volumes in an SVM 31
 - Retrieve volume transfer status for a volume 37
 - Delete SVM migrations 44
 - Retrieve migration status for an SVM 46
 - Update actions performed during an SVM migration 55

Manage SVM migration

SVM migrations endpoint overview

Overview

You can use this API to migrate an SVM from a source cluster to a destination cluster. During the migration, you can pause, resume, or abort the operation, and retrieve the migration status and transfer status of volumes in the SVM. The migrations APIs are only accessible from the destination cluster.

Precondition

The cluster peering relationship should be created between the source and destination clusters prior to using this API.

SVM migration APIs

The following APIs are used to manage SVM migration:

- POST /api/svm/migrations
- PATCH /api/svm/migrations/{uuid}
- GET /api/svm/migrations/
- GET /api/svm/migrations/{uuid}
- GET /api/svm/migrations/{svm_migration.uuid}/volumes
- GET /api/svm/migrations/{svm_migration.uuid}/volumes/{volume.uuid}
- DELETE /api/svm/migrations/{uuid}

Starting a migration

To start a migration operation, issue a POST request to /svm/migrations. Parameters are provided in the body of the POST request to specify the source cluster and the source SVM.

Monitoring the status of the SVM migration

You can use GET /svm/migrations to retrieve the status of the SVM migration and GET /svm/migrations/{svm_migration.uuid}/volumes to retrieve the transfer status of the volumes in the SVM migration.

Possible errors before starting the migration

Configurations in the POST /svm/migrations request are validated before the SVM migration starts. If an invalid configuration is found or the migration pre-checks fail, an HTTP error code in the 4xx range is returned. No SVM migration operation is started.

Polling the migration operation

After a successful POST /svm/migrations request is issued, an HTTP error code of 202 is returned along with a migration UUID and link in the body of the response. The SVM migration continues asynchronously and is monitored using the migration UUID and the GET /svm/migrations/{uuid} API.

Errors during the migration operation

If a failure occurs during the SVM migration, the GET /svm/migrations response provides details of the error along with any error code fields.

Pausing the migration operation

You can use PATCH /svm/migrations/{uuid} with the action "pause" to pause the SVM migration to update the SVM configuration on the source SVM.

Resuming the migration operation

You can use PATCH /svm/migrations/{uuid} with the action "resume" to resume the SVM migration from a paused state.

Aborting the migration operation

You can use DELETE /svm/migrations/{uuid} to delete the SVM on the destination cluster if the SVM migration has failed or is paused. Use the DELETE /svm/migrations/{uuid} request to remove the SVM on the source cluster; this might be used when communication between the source and destination cluster is reduced.

Retrieving the migration status

You can use GET /svm/migrations/{uuid} to retrieve the current status of your migration.

Retrieving the volume transfer status

You can use GET /svm/migrations/{svm_migration.uuid}/volumes to retrieve the current transfer status of all volumes in the migrating SVM.

Retrieving the volume transfer status of a specific volume

You can use GET /svm/migrations/{svm_migrations.uuid}/volumes/{volume.uuid} to retrieve the transfer status of a specific volume in the migrating SVM.

Examples

Starting a Migration

```
# API
/api/svm/migrations
```

POST body included from file

```
svm_migration_post_body.txt:
{
"source": {
  "svm": {
    "name": "vs1"
  },
  "cluster": {
    "name": "siteB"
  }
}
}
curl -X POST https://<mgmt-ip>/api/svm/migrations -H "Content-Type:
application+hal/json" -d "@svm_migration_post_body.txt"
```

Inline POST body

```
curl -X POST https://<mgmt-ip>/api/svm/migrations -H "Content-Type:
application+hal/json" -d '{"source": {"svm": {"name": "vs1"}, "cluster":
{"name": "siteB"}}}'
```

POST Response

```
Date: Wed, 25 Aug 2021 19:04:47 GMT
Server: libzapid-httpd
X-Content-Type-Options: nosniff
Cache-Control: no-cache,no-store,must-revalidate
Location: /api/svm/migrations/517c5e74-05d7-11ec-a40f-005056bba9a5
Content-Length: 189
Content-Type: application/hal+json
Keep-Alive: timeout=5, max=100
Connection: Keep-Alive
{
"job": {
  "uuid": "5184a3e1-05d7-11ec-a40f-005056bba9a5",
  "_links": {
    "self": {
      "href": "/api/cluster/jobs/5184a3e1-05d7-11ec-a40f-005056bba9a5"
    }
  }
}
}
```

Retrieving POST Job status

Use the link provided in the response to the POST request to fetch the status of the start operation

Request

```
curl -X GET https://<mgmt-ip>/api/cluster/jobs/5184a3e1-05d7-11ec-a40f-005056bba9a5
```

Response

```
Date: Wed, 25 Aug 2021 19:05:04 GMT
Server: libzapid-httpd
X-Content-Type-Options: nosniff
Cache-Control: no-cache,no-store,must-revalidate
Content-Type: application/hal+json
Vary: Accept-Encoding
Content-Encoding: gzip
Content-Length: 224
Keep-Alive: timeout=5, max=100
Connection: Keep-Alive
{
  "uuid": "5184a3e1-05d7-11ec-a40f-005056bba9a5",
  "description": "POST /api/svm/migrations/517c5e74-05d7-11ec-a40f-005056bba9a5",
  "state": "success",
  "message": "success",
  "code": 0,
  "start_time": "2021-08-25T15:04:48-04:00",
  "end_time": "2021-08-25T15:04:57-04:00",
  "_links": {
    "self": {
      "href": "/api/cluster/jobs/5184a3e1-05d7-11ec-a40f-005056bba9a5"
    }
  }
}
```

Retrieving all migrations

The location header in the POST operation provides the uuid of the migrate operation that was started using POST. Also, you can list all the migrate operations using the collection GET.

Request

```
curl -X GET https://<mgmt-ip>/api/svm/migrations
```

Response

```
Date: Wed, 25 Aug 2021 19:05:11 GMT
Server: libzapid-httpd
X-Content-Type-Options: nosniff
Cache-Control: no-cache,no-store,must-revalidate
Content-Type: application/hal+json
Vary: Accept-Encoding
Content-Encoding: gzip
Content-Length: 170
Keep-Alive: timeout=5, max=100
Connection: Keep-Alive
{
  "records": [
    {
      "uuid": "517c5e74-05d7-11ec-a40f-005056bba9a5",
      "_links": {
        "self": {
          "href": "/api/svm/migrations/517c5e74-05d7-11ec-a40f-005056bba9a5"
        }
      }
    }
  ],
  "num_records": 1,
  "_links": {
    "self": {
      "href": "/api/svm/migrations/"
    }
  }
}
```

Retrieving a specific migration

Request

```
curl -X GET https://<mgmt-ip>/api/svm/migrations/517c5e74-05d7-11ec-a40f-005056bba9a5
```

Response

```
Date: Wed, 25 Aug 2021 19:05:33 GMT
Server: libzapid-httpd
X-Content-Type-Options: nosniff
Cache-Control: no-cache,no-store,must-revalidate
```

```
Content-Type: application/hal+json
Vary: Accept-Encoding
Content-Encoding: gzip
Content-Length: 379
Keep-Alive: timeout=5, max=100
Connection: Keep-Alive
{
  "uuid": "517c5e74-05d7-11ec-a40f-005056bba9a5",
  "state": "setup_configuration",
  "start_time": "2021-08-25T15:04:49-04:00",
  "current_operation": "start",
  "source": {
    "svm": {
      "uuid": "424b6002-fb1a-11eb-9383-005056bbcf32",
      "name": "vs1",
      "_links": {
        "self": {
          "href": "/api/svm/svms/424b6002-fb1a-11eb-9383-005056bbcf32"
        }
      }
    },
    "cluster": {
      "uuid": "b54babec-fb14-11eb-9383-005056bbcf32",
      "name": "siteB",
      "_links": {
        "self": {
          "href": "/api/cluster/peers/b54babec-fb14-11eb-9383-005056bbcf32"
        }
      }
    }
  },
  "destination": {
    "ipspace": {
      "uuid": "f305cf0b-fb14-11eb-829d-005056bba9a5",
      "name": "Default"
    }
  },
  "auto_cutover": false,
  "auto_source_cleanup": false,
  "_links": {
    "self": {
      "href": "/api/svm/migrations/517c5e74-05d7-11ec-a40f-005056bba9a5"
    }
  }
}
```


Pausing a migration

To pause the migration use the PATCH request on the migration UUID.

Request

```
curl -X PATCH https://<mgmt-ip>/api/svm/migrations/517c5e74-05d7-11ec-a40f-005056bba9a5?action=pase
```

Response

```
Date: Wed, 25 Aug 2021 19:06:11 GMT
Server: libzapid-httpd
X-Content-Type-Options: nosniff
Cache-Control: no-cache,no-store,must-revalidate
Content-Length: 189
Content-Type: application/hal+json
Keep-Alive: timeout=5, max=100
Connection: Keep-Alive
{
  "job": {
    "uuid": "82dea7c7-05d7-11ec-a40f-005056bba9a5",
    "_links": {
      "self": {
        "href": "/api/cluster/jobs/82dea7c7-05d7-11ec-a40f-005056bba9a5"
      }
    }
  }
}
```

Monitoring PATCH job status

Use the link provided in the response of the PATCH request to fetch the information of the patch job.

Request

```
curl -X GET https://<mgmt-ip>/api/cluster/jobs/82dea7c7-05d7-11ec-a40f-005056bba9a5
```

Response

```
Date: Wed, 25 Aug 2021 21:40:06 GMT
Server: libzapid-httpd
X-Content-Type-Options: nosniff
Cache-Control: no-cache,no-store,must-revalidate
Content-Type: application/hal+json
Vary: Accept-Encoding
Content-Encoding: gzip
Content-Length: 222
Keep-Alive: timeout=5, max=100
Connection: Keep-Alive
{
  "uuid": "82dea7c7-05d7-11ec-a40f-005056bba9a5",
  "description": "PATCH /api/svm/migrations/517c5e74-05d7-11ec-a40f-005056bba9a5",
  "state": "success",
  "message": "success",
  "code": 0,
  "start_time": "2021-08-25T15:06:11-04:00",
  "end_time": "2021-08-25T15:06:11-04:00",
  "_links": {
    "self": {
      "href": "/api/cluster/jobs/82dea7c7-05d7-11ec-a40f-005056bba9a5"
    }
  }
}
```

Aborting a migration

To abort the migration use the DELETE request on the migration UUID.

Request

```
curl -X DELETE https://<mgmt-ip>/api/svm/migrations/517c5e74-05d7-11ec-a40f-005056bba9a5
```

Response

```
Date: Wed, 25 Aug 2021 22:57:23 GMT
Server: libzapid-httpd
X-Content-Type-Options: nosniff
Cache-Control: no-cache,no-store,must-revalidate
Content-Length: 189
Content-Type: application/hal+json
Keep-Alive: timeout=5, max=100
Connection: Keep-Alive
{
  "job": {
    "uuid": "cf870f19-05f7-11ec-a40f-005056bba9a5",
    "_links": {
      "self": {
        "href": "/api/cluster/jobs/cf870f19-05f7-11ec-a40f-005056bba9a5"
      }
    }
  }
}
```

Monitoring DELETE job status

Use the link provided in the response of the PATCH request to fetch the information of the patch job.

Request

```
curl -X GET https://<mgmt-ip>/api/cluster/jobs/cf870f19-05f7-11ec-a40f-005056bba9a5
```

Response

```
Date: Wed, 25 Aug 2021 23:05:47 GMT
Server: libzapid-httpd
X-Content-Type-Options: nosniff
Cache-Control: no-cache,no-store,must-revalidate
Content-Type: application/hal+json
Vary: Accept-Encoding
Content-Encoding: gzip
Content-Length: 228
Keep-Alive: timeout=5, max=100
Connection: Keep-Alive
{
  "uuid": "cf870f19-05f7-11ec-a40f-005056bba9a5",
  "description": "DELETE /api/svm/migrations/517c5e74-05d7-11ec-a40f-005056bba9a5",
  "state": "success",
  "message": "success",
  "code": 0,
  "start_time": "2021-08-25T18:57:23-04:00",
  "end_time": "2021-08-25T18:57:24-04:00",
  "_links": {
    "self": {
      "href": "/api/cluster/jobs/cf870f19-05f7-11ec-a40f-005056bba9a5"
    }
  }
}
```

Retrieve SVM migration status

GET /svm/migrations

Introduced In: 9.10

Retrieves the SVM migration status.

Related ONTAP commands

- vserver migrate show

Parameters

Name	Type	In	Required	Description
uuid	string	query	False	Filter by uuid

Name	Type	In	Required	Description
current_operation	string	query	False	Filter by current_operation
time_metrics.cutover_trigger_time	string	query	False	Filter by time_metrics.cutover_trigger_time
time_metrics.cutover_complete_time	string	query	False	Filter by time_metrics.cutover_complete_time
time_metrics.start_time	string	query	False	Filter by time_metrics.start_time
time_metrics.cutover_start_time	string	query	False	Filter by time_metrics.cutover_start_time
time_metrics.last_resume_time	string	query	False	Filter by time_metrics.last_resume_time
time_metrics.last_pause_time	string	query	False	Filter by time_metrics.last_pause_time
time_metrics.end_time	string	query	False	Filter by time_metrics.end_time
messages.message	string	query	False	Filter by messages.message
messages.code	integer	query	False	Filter by messages.code
state	string	query	False	Filter by state
restart_count	integer	query	False	Filter by restart_count
last_operation	string	query	False	Filter by last_operation

Name	Type	In	Required	Description
auto_cutover	boolean	query	False	Filter by auto_cutover
auto_source_cleanup	boolean	query	False	Filter by auto_source_cleanup
source.cluster.name	string	query	False	Filter by source.cluster.name
source.cluster.uuid	string	query	False	Filter by source.cluster.uuid
source.svm.uuid	string	query	False	Filter by source.svm.uuid
source.svm.name	string	query	False	Filter by source.svm.name
last_failed_state	string	query	False	Filter by last_failed_state
destination.volume_placement.aggregates.uuid	string	query	False	Filter by destination.volume_placement.aggregates.uuid
destination.volume_placement.aggregates.name	string	query	False	Filter by destination.volume_placement.aggregates.name
destination.ipspace.uuid	string	query	False	Filter by destination.ipspace.uuid
destination.ipspace.name	string	query	False	Filter by destination.ipspace.name
point_of_no_return	boolean	query	False	Filter by point_of_no_return
fields	array[string]	query	False	Specify the fields to return.

Name	Type	In	Required	Description
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. <ul style="list-style-type: none"> • Default value: 1
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. <ul style="list-style-type: none"> • Default value: 1 • Max value: 120 • Min value: 0
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[svm_migration]	

Example response

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": {
    "current_operation": "none",
    "destination": {
      "ipspace": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "exchange",
        "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
      },
      "volume_placement": {
        "aggregates": {
          "_links": {
            "self": {
              "href": "/api/resourcelink"
            }
          },
          "name": "aggr1",
          "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
        }
      },
      "last_failed_state": "precheck_started",
      "last_operation": "none",
      "messages": {
      },
      "restart_count": 0,
      "source": {
        "cluster": {
          "_links": {
            "self": {
              "href": "/api/resourcelink"
            }
          }
        }
      }
    }
  }
}
```



```

    },
    "name": "cluster1",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  },
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  }
},
"state": "precheck_started",
"time_metrics": {
  "cutover_complete_time": "2020-12-02T19:30:19-08:00",
  "cutover_start_time": "2020-12-02T18:20:19-08:00",
  "cutover_trigger_time": "2020-12-02T19:15:19-08:00",
  "end_time": "2020-12-02T19:36:19-08:00",
  "last_pause_time": "2020-12-02T18:50:19-08:00",
  "last_resume_time": "2020-12-02T18:54:19-08:00",
  "start_time": "2020-12-02T18:36:19-08:00"
},
"uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
}
}

```

Error

Status: Default

ONTAP Error Response Codes

Error Code	Description
13172783	Migrate RDB lookup 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
next	href	
self	href	

_links

Name	Type	Description
self	href	

ipSPACE

Optional property used to specify which IPspace to use for the SVM. By default, the "default" ipSPACE is used.

Name	Type	Description
_links	_links	
name	string	IPspace name
uuid	string	IPspace UUID

aggregates

Aggregate

Name	Type	Description
_links	_links	
name	string	
uuid	string	

volume_placement

Optional property to specify the source volume placement in the destination.

Name	Type	Description
aggregates	array[aggregates]	Optional property used to specify the list of desired aggregates to use for volume creation in the destination.

destination

Destination cluster details for the SVM migration.

Name	Type	Description
ipspace	ipspace	Optional property used to specify which IPspace to use for the SVM. By default, the "default" ipspace is used.
volume_placement	volume_placement	Optional property to specify the source volume placement in the destination.

messages

Specifies failure codes and messages.

Name	Type	Description
code	integer	Message code
message	string	Detailed message of warning or error.

cluster

Source cluster for the SVM migration.

Name	Type	Description
_links	_links	
name	string	
uuid	string	

svm

Source SVM

Name	Type	Description
_links	_links	

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

source

Source cluster details for the SVM migration.

Name	Type	Description
cluster	cluster	Source cluster for the SVM migration.
svm	svm	Source SVM

time_metrics

Various time metrics details

Name	Type	Description
cutover_complete_time	string	Cutover end time
cutover_start_time	string	Cutover start time
cutover_trigger_time	string	Cutover trigger time
end_time	string	Migration end time
last_pause_time	string	Last migration pause time
last_resume_time	string	Last migration resume time
start_time	string	Migration start time

svm_migration

Provides information on SVM migration, default and user specified configurations, the state of the migration, and volume transfer metrics.

Name	Type	Description
auto_cutover	boolean	Optional property that when set to true automatically performs cutover when the migration state reaches "ready for cutover".

Name	Type	Description
auto_source_cleanup	boolean	Optional property that when set to true automatically cleans up the SVM on the source cluster after the migration cutover.
check_only	boolean	Optional property that when set to true performs only migration pre-checks not the actual migration.
current_operation	string	
destination	destination	Destination cluster details for the SVM migration.
last_failed_state	string	Indicates the state of the migration.
last_operation	string	
messages	array[messages]	Errors and warnings returned/displayed during migration.
point_of_no_return	boolean	Indicates if the migration has progressed beyond the point of no return. When true, the migration cannot be aborted or paused. When false, the migration can be paused or aborted.
restart_count	integer	Number of times SVM migration was restarted since initially started.
source	source	Source cluster details for the SVM migration.
state	string	Indicates the state of the migration.
time_metrics	time_metrics	Various time metrics details
uuid	string	SVM migration 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
target	string	The target parameter that caused the error.

Create an SVM migration operation

POST /svm/migrations

Introduced In: 9.10

Creates an SVM migration operation. This API must be executed on the destination cluster. This API creates an SVM on the destination cluster and preserves the SVM's identity specified in the source cluster. Optionally, you can specify the aggregate list for creating the volumes, and IPspace. You can perform pre-checks to verify if SVM migration is possible, by setting the "check-only" option to "true". By default the values for auto-source-cleanup and auto-cutover is true.

Required properties

- `source.svm.name` or `source.svm.uuid` - Source SVM name or source SVM UUID.
- `source.cluster.name` or `source.cluster.uuid` - Source cluster name or source cluster UUID

Optional properties

- `destination.ipspace.name` or `destination.ipspace.uuid` - Destination IP Space name or UUID where the vserver will be migrated to.
- `destination.volume_placement.aggregates` - List of aggregates where the migrating volumes should go on destination.
- `auto_cutover` - Option to specify whether to perform cutover automatically. Default is true.
- `auto_source_cleanup` - Option to specify whether to perform source cleanup automatically. Default is true.
- `check_only` - Option to perform all the prechecks for migrate without actually starting the migrate. Default

is false.

Related ONTAP commands

- `vserver migrate start`

Parameters

Name	Type	In	Required	Description
return_timeout	integer	query	False	<p>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.</p> <ul style="list-style-type: none">• Default value: 1• Max value: 120• Min value: 0
return_records	boolean	query	False	<p>The default is false. If set to true, the records are returned.</p> <ul style="list-style-type: none">• Default value:

Request Body

Name	Type	Description
auto_cutover	boolean	Optional property that when set to true automatically performs cutover when the migration state reaches "ready for cutover".
auto_source_cleanup	boolean	Optional property that when set to true automatically cleans up the SVM on the source cluster after the migration cutover.
check_only	boolean	Optional property that when set to true performs only migration pre-checks not the actual migration.
current_operation	string	
destination	destination	Destination cluster details for the SVM migration.
last_failed_state	string	Indicates the state of the migration.
last_operation	string	
messages	array[messages]	Errors and warnings returned/displayed during migration.
point_of_no_return	boolean	Indicates if the migration has progressed beyond the point of no return. When true, the migration cannot be aborted or paused. When false, the migration can be paused or aborted.
restart_count	integer	Number of times SVM migration was restarted since initially started.
source	source	Source cluster details for the SVM migration.
state	string	Indicates the state of the migration.
time_metrics	time_metrics	Various time metrics details
uuid	string	SVM migration UUID

Example request

```
{
  "current_operation": "none",
  "destination": {
    "ipSPACE": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "exchange",
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    },
    "volume_placement": {
      "aggregates": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "aggr1",
        "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
      }
    }
  },
  "last_failed_state": "precheck_started",
  "last_operation": "none",
  "messages": {
  },
  "restart_count": 0,
  "source": {
    "cluster": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "cluster1",
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    },
    "svm": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      }
    }
  }
}
```

```

    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  }
},
"state": "precheck_started",
"time_metrics": {
  "cutover_complete_time": "2020-12-02T19:30:19-08:00",
  "cutover_start_time": "2020-12-02T18:20:19-08:00",
  "cutover_trigger_time": "2020-12-02T19:15:19-08:00",
  "end_time": "2020-12-02T19:36:19-08:00",
  "last_pause_time": "2020-12-02T18:50:19-08:00",
  "last_resume_time": "2020-12-02T18:54:19-08:00",
  "start_time": "2020-12-02T18:36:19-08:00"
},
"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
262245	The value provided is invalid.
13172746	SVM migration cannot be started. This is a generic code, see the response message for details.

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	

ipospace

Optional property used to specify which IPspace to use for the SVM. By default, the "default" ipospace is used.

Name	Type	Description
_links	_links	
name	string	IPspace name
uuid	string	IPspace UUID

aggregates

Aggregate

Name	Type	Description
_links	_links	
name	string	
uuid	string	

volume_placement

Optional property to specify the source volume placement in the destination.

Name	Type	Description
aggregates	array[aggregates]	Optional property used to specify the list of desired aggregates to use for volume creation in the destination.

destination

Destination cluster details for the SVM migration.

Name	Type	Description
ipspace	ipspace	Optional property used to specify which IPspace to use for the SVM. By default, the "default" ipspace is used.
volume_placement	volume_placement	Optional property to specify the source volume placement in the destination.

messages

Specifies failure codes and messages.

Name	Type	Description
code	integer	Message code
message	string	Detailed message of warning or error.

cluster

Source cluster for the SVM migration.

Name	Type	Description
_links	_links	
name	string	
uuid	string	

svm

Source SVM

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

source

Source cluster details for the SVM migration.

Name	Type	Description
cluster	cluster	Source cluster for the SVM migration.
svm	svm	Source SVM

time_metrics

Various time metrics details

Name	Type	Description
cutover_complete_time	string	Cutover end time
cutover_start_time	string	Cutover start time
cutover_trigger_time	string	Cutover trigger time
end_time	string	Migration end time
last_pause_time	string	Last migration pause time
last_resume_time	string	Last migration resume time
start_time	string	Migration start time

svm_migration

Provides information on SVM migration, default and user specified configurations, the state of the migration, and volume transfer metrics.

Name	Type	Description
auto_cutover	boolean	Optional property that when set to true automatically performs cutover when the migration state reaches "ready for cutover".
auto_source_cleanup	boolean	Optional property that when set to true automatically cleans up the SVM on the source cluster after the migration cutover.
check_only	boolean	Optional property that when set to true performs only migration pre-checks not the actual migration.
current_operation	string	

Name	Type	Description
destination	destination	Destination cluster details for the SVM migration.
last_failed_state	string	Indicates the state of the migration.
last_operation	string	
messages	array[messages]	Errors and warnings returned/displayed during migration.
point_of_no_return	boolean	Indicates if the migration has progressed beyond the point of no return. When true, the migration cannot be aborted or paused. When false, the migration can be paused or aborted.
restart_count	integer	Number of times SVM migration was restarted since initially started.
source	source	Source cluster details for the SVM migration.
state	string	Indicates the state of the migration.
time_metrics	time_metrics	Various time metrics details
uuid	string	SVM migration UUID

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 transfer status of volumes in an SVM

GET /svm/migrations/{svm_migration.uuid}/volumes

Introduced In: 9.10

Retrieves the transfer status of the volumes in the SVM.

Related ONTAP commands

- `vserver migrate show-volume`

Parameters

Name	Type	In	Required	Description
svm_migration.uuid	string	path	True	Migration UUID
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. <ul style="list-style-type: none"> • Default value: 1
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. <ul style="list-style-type: none"> • Default value: 1 • Max value: 120 • Min value: 0
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[svm_migration_volume]	

Example response

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "errors": {
    },
    "node": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "node1",
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    },
    "svm": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "svm1",
      "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
    },
    "transfer_state": "Idle",
    "volume": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "volume1",
      "uuid": "028baa66-41bd-11e9-81d5-00a0986138f7"
    }
  }
}
```

```
}  
}  
}
```

Error

Status: Default

ONTAP Error Response Codes

Error Code	Description
13172783	Migrate RDB lookup 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
next	href	
self	href	

self_link

Name	Type	Description
self	href	

errors

Specifies failure codes and messages.

Name	Type	Description
code	integer	Message code
message	string	Detailed message of warning or error.

_links

Name	Type	Description
self	href	

node

Node in the destination cluster where the volume is hosted

Name	Type	Description
_links	_links	
name	string	
uuid	string	

svm

SVM information

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

volume

Volume information in the destination cluster

Name	Type	Description
_links	_links	
name	string	The name of the volume.
uuid	string	<p>Unique identifier for the volume. This corresponds to the instance-uuid that is exposed in the CLI and ONTAPI. It does not change due to a volume move.</p> <ul style="list-style-type: none"> • example: 028baa66-41bd-11e9-81d5-00a0986138f7 • Introduced in: 9.6

svm_migration_volume

Volume transfer information

Name	Type	Description
_links	self_link	
errors	array[errors]	List of transfer errors
healthy	boolean	Indicates whether the volume transfer relationship is healthy.
node	node	Node in the destination cluster where the volume is hosted
svm	svm	SVM information
transfer_state	string	Status of the transfer.
volume	volume	Volume information in the destination cluster

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 volume transfer status for a volume

GET /svm/migrations/{svm_migration.uuid}/volumes/{volume.uuid}

Introduced In: 9.10

Retrieves the volume transfer status of the specified volume.uuid.

Related ONTAP commands

- `vserver migrate show-volume`

Parameters

Name	Type	In	Required	Description
svm_migration.uuid	string	path	True	Migration UUID
volume.uuid	string	path	True	Volume UUID
healthy	boolean	query	False	Filter by healthy
errors.message	string	query	False	Filter by errors.message

Name	Type	In	Required	Description
errors.code	integer	query	False	Filter by errors.code
node.uuid	string	query	False	Filter by node.uuid
node.name	string	query	False	Filter by node.name
volume.name	string	query	False	Filter by volume.name
transfer_state	string	query	False	Filter by transfer_state
svm.uuid	string	query	False	Filter by svm.uuid
svm.name	string	query	False	Filter by svm.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. • Default value: 1
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. • Default value: 1 • Max value: 120 • Min value: 0

Name	Type	In	Required	Description
order_by	array[string]	query	False	Order results by specified fields and optional [asc

Response

Status: 200, Ok

Name	Type	Description
_links	self_link	
errors	array[errors]	List of transfer errors
healthy	boolean	Indicates whether the volume transfer relationship is healthy.
node	node	Node in the destination cluster where the volume is hosted
svm	svm	SVM information
transfer_state	string	Status of the transfer.
volume	volume	Volume information in the destination cluster

Example response

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "errors": {
  },
  "node": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "node1",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  },
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  },
  "transfer_state": "Idle",
  "volume": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "volume1",
    "uuid": "028baa66-41bd-11e9-81d5-00a0986138f7"
  }
}
```

Error

Status: Default

ONTAP Error Response Codes

Error Code	Description
13172783	Migrate RDB lookup 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	

self_link

Name	Type	Description
self	href	

errors

Specifies failure codes and messages.

Name	Type	Description
code	integer	Message code
message	string	Detailed message of warning or error.

_links

Name	Type	Description
self	href	

node

Node in the destination cluster where the volume is hosted

Name	Type	Description
_links	_links	
name	string	
uuid	string	

svm

SVM information

Name	Type	Description
_links	_links	
name	string	The name of the SVM.

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

volume

Volume information in the destination cluster

Name	Type	Description
_links	_links	
name	string	The name of the volume.
uuid	string	<p>Unique identifier for the volume. This corresponds to the instance-uuid that is exposed in the CLI and ONTAPI. It does not change due to a volume move.</p> <ul style="list-style-type: none"> • example: 028baa66-41bd-11e9-81d5-00a0986138f7 • Introduced in: 9.6

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 SVM migrations

DELETE /svm/migrations/{uuid}

Introduced In: 9.10

Deletes the SVM migration.

Related ONTAP commands

- `vserver migrate abort`

Parameters

Name	Type	In	Required	Description
uuid	string	path	True	SVM migration UUID.
return_timeout	integer	query	False	<p>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.</p> <ul style="list-style-type: none">• Default value: 1• Max value: 120• Min value: 0

Response

Status: 202, Accepted

Error

Status: Default

ONTAP Error Response Codes

Error Code	Description
13172783	Migrate RDB lookup 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

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 migration status for an SVM

GET /svm/migrations/{uuid}

Introduced In: 9.10

Retrieves the migration status of an individual SVM.

Important notes

- The "migrations" object includes a large set of fields and can be expensive to retrieve.
- REST APIs only expose a data SVM as an SVM.

Example

Retrieving an individual SVM migration status.

```
GET "/api/svm/migrations/a14ae39f-8d85-11e9-b4a7-00505682dc8b/svms/f16f0935-5281-11e8-b94d-005056b46485"
```

Parameters

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

Response

Status: 200, Ok

Name	Type	Description
auto_cutover	boolean	Optional property that when set to true automatically performs cutover when the migration state reaches "ready for cutover".
auto_source_cleanup	boolean	Optional property that when set to true automatically cleans up the SVM on the source cluster after the migration cutover.
check_only	boolean	Optional property that when set to true performs only migration pre-checks not the actual migration.
current_operation	string	
destination	destination	Destination cluster details for the SVM migration.
last_failed_state	string	Indicates the state of the migration.
last_operation	string	
messages	array[messages]	Errors and warnings returned/displayed during migration.
point_of_no_return	boolean	Indicates if the migration has progressed beyond the point of no return. When true, the migration cannot be aborted or paused. When false, the migration can be paused or aborted.

Name	Type	Description
restart_count	integer	Number of times SVM migration was restarted since initially started.
source	source	Source cluster details for the SVM migration.
state	string	Indicates the state of the migration.
time_metrics	time_metrics	Various time metrics details
uuid	string	SVM migration UUID

Example response

```
{
  "current_operation": "none",
  "destination": {
    "ipspace": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "exchange",
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    },
    "volume_placement": {
      "aggregates": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "aggr1",
        "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
      }
    }
  },
  "last_failed_state": "precheck_started",
  "last_operation": "none",
  "messages": {
  },
  "restart_count": 0,
  "source": {
    "cluster": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "cluster1",
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    },
    "svm": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      }
    }
  }
}
```

```

    },
    "name": "svml",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  }
},
"state": "precheck_started",
"time_metrics": {
  "cutover_complete_time": "2020-12-02T19:30:19-08:00",
  "cutover_start_time": "2020-12-02T18:20:19-08:00",
  "cutover_trigger_time": "2020-12-02T19:15:19-08:00",
  "end_time": "2020-12-02T19:36:19-08:00",
  "last_pause_time": "2020-12-02T18:50:19-08:00",
  "last_resume_time": "2020-12-02T18:54:19-08:00",
  "start_time": "2020-12-02T18:36:19-08:00"
},
"uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
}

```

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

See Definitions

href

Name	Type	Description
href	string	

_links

Name	Type	Description
self	href	

ipospace

Optional property used to specify which IPspace to use for the SVM. By default, the "default" ipospace is used.

Name	Type	Description
_links	_links	
name	string	IPspace name
uuid	string	IPspace UUID

aggregates

Aggregate

Name	Type	Description
_links	_links	
name	string	
uuid	string	

volume_placement

Optional property to specify the source volume placement in the destination.

Name	Type	Description
aggregates	array[aggregates]	Optional property used to specify the list of desired aggregates to use for volume creation in the destination.

destination

Destination cluster details for the SVM migration.

Name	Type	Description
ipspace	ipspace	Optional property used to specify which IPspace to use for the SVM. By default, the "default" ipspace is used.
volume_placement	volume_placement	Optional property to specify the source volume placement in the destination.

messages

Specifies failure codes and messages.

Name	Type	Description
code	integer	Message code
message	string	Detailed message of warning or error.

cluster

Source cluster for the SVM migration.

Name	Type	Description
_links	_links	
name	string	
uuid	string	

svm

Source SVM

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

source

Source cluster details for the SVM migration.

Name	Type	Description
cluster	cluster	Source cluster for the SVM migration.
svm	svm	Source SVM

time_metrics

Various time metrics details

Name	Type	Description
cutover_complete_time	string	Cutover end time
cutover_start_time	string	Cutover start time
cutover_trigger_time	string	Cutover trigger time
end_time	string	Migration end time
last_pause_time	string	Last migration pause time
last_resume_time	string	Last migration resume time
start_time	string	Migration start time

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 actions performed during an SVM migration

PATCH /svm/migrations/{uuid}

Introduced In: 9.10

Actions that can be performed during an SVM migration.

Related ONTAP commands

- `vserver migrate pause`
- `vserver migrate resume`
- `vserver migrate cutover`
- `vserver migrate source-cleanup`

Parameters

Name	Type	In	Required	Description
uuid	string	path	True	SVM migration UUID

Name	Type	In	Required	Description
action	string	query	False	<p>The pause action pauses the SVM migration. This action stops data transfer and configuration replication. This operation must be performed on the destination cluster. The resume action resumes an SVM migration from a paused or failed state. This operation must be performed on the destination cluster. The cutover action triggers the cutover of an SVM from the source cluster to the destination cluster. The source_clean up action performs a clean up of the SVM on the source cluster.</p> <ul style="list-style-type: none"> enum: ["pause", "resume", "cutover", "source_cleanup"]
auto_cutover	boolean	query	False	<p>Optional property that when set to true automatically performs cutover when the migration state reaches "ready for cutover".</p> <ul style="list-style-type: none"> Default value: 1

Name	Type	In	Required	Description
auto_source_cleanup	boolean	query	False	<p>Optional property that when set to true automatically cleans up the SVM on the source cluster after the migration cutover.</p> <ul style="list-style-type: none"> • Default value: 1
return_timeout	integer	query	False	<p>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.</p> <ul style="list-style-type: none"> • Default value: 1 • Max value: 120 • Min value: 0

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
13172783	Migrate RDB lookup 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	

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.

Copyright information

Copyright © 2024 NetApp, Inc. All Rights Reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means—graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system—without prior written permission of the copyright owner.

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

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

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

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

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

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

Trademark information

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