



Manage iSCSI services

REST API reference

NetApp

February 06, 2026

This PDF was generated from https://docs.netapp.com/us-en/ontap-restapi/protocols_san_iscsi_services_endpoint_overview.html on February 06, 2026. Always check docs.netapp.com for the latest.

Table of Contents

| | |
|---------------------------|----|
| Manage iSCSI services | 1 |
| Manage iSCSI services | 1 |
| Overview | 1 |
| Performance monitoring | 1 |
| Examples | 1 |
| Retrieve iSCSI services | 7 |
| Expensive properties | 7 |
| Related ONTAP commands | 7 |
| Learn more | 7 |
| Parameters | 7 |
| Response | 12 |
| Error | 14 |
| Definitions | 15 |
| Create an iSCSI service | 23 |
| Required properties | 23 |
| Related ONTAP commands | 24 |
| Learn more | 24 |
| Parameters | 24 |
| Request Body | 24 |
| Response | 25 |
| Error | 26 |
| Definitions | 27 |
| Delete an iSCSI service | 34 |
| Related ONTAP commands | 35 |
| Learn more | 35 |
| Parameters | 35 |
| Response | 35 |
| Error | 35 |
| Definitions | 36 |
| Retrieve an iSCSI service | 37 |
| Related ONTAP commands | 37 |
| Learn more | 37 |
| Parameters | 37 |
| Response | 37 |
| Error | 40 |
| Definitions | 41 |
| Update an iSCSI service | 48 |
| Related ONTAP commands | 48 |
| Learn more | 48 |
| Parameters | 48 |
| Request Body | 49 |
| Response | 49 |
| Error | 49 |

| | |
|--|----|
| Definitions | 50 |
| Retrieve historical performance metrics for the iSCSI protocol of an SVM | 57 |
| Parameters | 58 |
| Response | 60 |
| Error | 62 |
| Definitions | 62 |
| Retrieve historical performance metrics for the iSCSI protocol service of an SVM for a specific time | 66 |
| Parameters | 66 |
| Response | 67 |
| Error | 68 |
| Definitions | 69 |

Manage iSCSI services

Manage iSCSI services

Overview

An iSCSI service defines the properties of the iSCSI target for an SVM. There can be at most one iSCSI service for an SVM. An SVM's iSCSI service must be created before iSCSI initiators can log in to the SVM.

The iSCSI service REST API allows you to create, update, delete, and discover iSCSI services for SVMs.

Performance monitoring

Performance of the SVM can be monitored by the `metric.*` and `statistics.*` properties. These show the performance of the SVM in terms of IOPS, latency and throughput. The `metric.*` properties denote an average whereas `statistics.*` properties denote a real-time monotonically increasing value aggregated across all nodes.

Examples

Creating an iSCSI service for an SVM

The simplest way to create an iSCSI service is to specify only the SVM, either by name or UUID. By default, the new iSCSI service is enabled and uses the SVM name as its target alias.

In this example, the `return_records` query parameter is used to retrieve the new iSCSI service object in the REST response.

```

# The API:
POST /api/protocols/san/iscsi/services

# The call:
curl -X POST 'https://<mgmt-
ip>/api/protocols/san/iscsi/services?return_records=true' -H 'Accept:
application/hal+json' -d '{ "svm": { "name": "svm1" } }'

# The response:
{
  "num_records": 1,
  "records": [
    {
      "svm": {
        "uuid": "19d04b8e-94d7-11e8-8370-005056b48fd2",
        "name": "svm1",
        "_links": {
          "self": {
            "href": "/api/svm/svms/19d04b8e-94d7-11e8-8370-005056b48fd2"
          }
        }
      },
      "enabled": true,
      "target": {
        "name": "iqn.1992-
08.com.netapp:sn.19d04b8e94d711e88370005056b48fd2:vs.4",
        "alias": "svm1"
      },
      "_links": {
        "self": {
          "href": "/api/protocols/san/iscsi/services/19d04b8e-94d7-11e8-
8370-005056b48fd2"
        }
      }
    }
  ]
}

```

Retrieving the iSCSI services for all SVMs in the cluster

```

# The API:
GET /api/protocols/san/iscsi/services

```

```
# The call:
curl -X GET 'https://<mgmt-ip>/api/protocols/san/iscsi/services' -H
'Accept: application/hal+json'

# The response:
{
  "records": [
    {
      "svm": {
        "uuid": "19d04b8e-94d7-11e8-8370-005056b48fd2",
        "name": "svm1",
        "_links": {
          "self": {
            "href": "/api/svm/svms/19d04b8e-94d7-11e8-8370-005056b48fd2"
          }
        }
      },
      "_links": {
        "self": {
          "href": "/api/protocols/san/iscsi/services/19d04b8e-94d7-11e8-8370-005056b48fd2"
        }
      }
    },
    {
      "svm": {
        "uuid": "25f617cf-94d7-11e8-8370-005056b48fd2",
        "name": "svm2",
        "_links": {
          "self": {
            "href": "/api/svm/svms/25f617cf-94d7-11e8-8370-005056b48fd2"
          }
        }
      },
      "_links": {
        "self": {
          "href": "/api/protocols/san/iscsi/services/25f617cf-94d7-11e8-8370-005056b48fd2"
        }
      }
    }
  ],
  "num_records": 2,
  "_links": {
    "self": {
      "href": "/api/protocols/san/iscsi/services"
    }
  }
}
```

```
}  
}  
}
```

Retrieving details for a specific iSCSI service

The iSCSI service is identified by the UUID of its SVM.

```
# The API:  
GET /api/protocols/san/iscsi/services/{svm.uuid}  
  
# The call:  
curl -X GET 'https://<mgmt-ip>/api/protocols/san/iscsi/services/19d04b8e-94d7-11e8-8370-005056b48fd2' -H 'Accept: application/hal+json'  
  
# The response:  
{  
  "svm": {  
    "uuid": "19d04b8e-94d7-11e8-8370-005056b48fd2",  
    "name": "svm1",  
    "_links": {  
      "self": {  
        "href": "/api/svm/svms/19d04b8e-94d7-11e8-8370-005056b48fd2"  
      }  
    },  
    "enabled": true,  
    "target": {  
      "name": "iqn.1992-08.com.netapp:sn.19d04b8e94d711e88370005056b48fd2:vs.4",  
      "alias": "svm1"  
    },  
    "_links": {  
      "self": {  
        "href": "/api/protocols/san/iscsi/services/19d04b8e-94d7-11e8-8370-005056b48fd2"  
      }  
    }  
  }  
}
```

Disabling an iSCSI service

Disabling an iSCSI service shuts down all active iSCSI sessions for the SVM and prevents the creation of new iSCSI sessions.

The iSCSI service to update is identified by the UUID of its SVM.

```
# The API:
PATCH /api/protocols/san/iscsi/services/{svm.uuid}

# The call:
curl -X PATCH 'https://<mgmt-
ip>/api/protocols/san/iscsi/services/19d04b8e-94d7-11e8-8370-005056b48fd2'
-H 'Accept: application/hal+json' -d '{ "enabled": "false" }'
```

You can retrieve the iSCSI service to confirm the change.

In this example, the `fields` query parameter is used to limit the response to the `enabled` property and iSCSI service identifiers.

```
# The API:
GET /api/protocols/san/iscsi/services/{svm.uuid}

# The call:
curl -X GET 'https://<mgmt-ip>/api/protocols/san/iscsi/services/19d04b8e-94d7-11e8-8370-005056b48fd2?fields=enabled' -H 'Accept: application/hal+json'

# The response:
{
  "svm": {
    "uuid": "19d04b8e-94d7-11e8-8370-005056b48fd2",
    "name": "svm1",
    "_links": {
      "self": {
        "href": "/api/svm/svms/19d04b8e-94d7-11e8-8370-005056b48fd2"
      }
    }
  },
  "enabled": false,
  "_links": {
    "self": {
      "href": "/api/protocols/san/iscsi/services/19d04b8e-94d7-11e8-8370-005056b48fd2"
    }
  }
}
```

Deleting an iSCSI service

The iSCSI service must be disabled before it can be deleted.

The iSCSI service to be deleted is identified by the UUID of its SVM.

```
# The API:
DELETE /api/protocols/san/iscsi/services/{svm.uuid}

# The call:
curl -X DELETE 'https://<mgmt-ip>/api/protocols/san/iscsi/services/19d04b8e-94d7-11e8-8370-005056b48fd2' -H 'Accept: application/hal+json'
```

Retrieve iSCSI services

GET /protocols/san/iscsi/services

Introduced In: 9.6

Retrieves iSCSI services.

Expensive properties

There is an added computational cost to retrieving values for these properties. They are not included by default in GET results and must be explicitly requested using the `fields` query parameter. See [Requesting specific fields](#) to learn more.

- `statistics.*`
- `metric.*`

Related ONTAP commands

- `vserver iscsi show`

Learn more

- [DOC /protocols/san/iscsi/services](#)

Parameters

| Name | Type | In | Required | Description |
|------------------------------|---------|-------|----------|--|
| svm.name | string | query | False | Filter by svm.name |
| svm.uuid | string | query | False | Filter by svm.uuid |
| statistics.latency_raw.other | integer | query | False | Filter by statistics.latency_raw.other <ul style="list-style-type: none">• Introduced in: 9.7 |
| statistics.latency_raw.total | integer | query | False | Filter by statistics.latency_raw.total <ul style="list-style-type: none">• Introduced in: 9.7 |

| Name | Type | In | Required | Description |
|------------------------------|---------|-------|----------|--|
| statistics.latency_raw.write | integer | query | False | Filter by statistics.latency_raw.write • Introduced in: 9.7 |
| statistics.latency_raw.read | integer | query | False | Filter by statistics.latency_raw.read • Introduced in: 9.7 |
| statistics.iops_raw.other | integer | query | False | Filter by statistics.iops_raw.other • Introduced in: 9.7 |
| statistics.iops_raw.total | integer | query | False | Filter by statistics.iops_raw.total • Introduced in: 9.7 |
| statistics.iops_raw.write | integer | query | False | Filter by statistics.iops_raw.write • Introduced in: 9.7 |
| statistics.iops_raw.read | integer | query | False | Filter by statistics.iops_raw.read • Introduced in: 9.7 |
| statistics.status | string | query | False | Filter by statistics.status • Introduced in: 9.7 |

| Name | Type | In | Required | Description |
|---------------------------------|---------|-------|----------|---|
| statistics.throughput_raw.write | integer | query | False | Filter by statistics.throughput_raw.write • Introduced in: 9.7 |
| statistics.throughput_raw.read | integer | query | False | Filter by statistics.throughput_raw.read • Introduced in: 9.7 |
| statistics.throughput_raw.total | integer | query | False | Filter by statistics.throughput_raw.total • Introduced in: 9.7 |
| statistics.timestamp | string | query | False | Filter by statistics.timestamp • Introduced in: 9.7 |
| metric.iops.other | integer | query | False | Filter by metric.iops.other • Introduced in: 9.7 |
| metric.iops.total | integer | query | False | Filter by metric.iops.total • Introduced in: 9.7 |
| metric.iops.write | integer | query | False | Filter by metric.iops.write • Introduced in: 9.7 |

| Name | Type | In | Required | Description |
|-------------------------|---------|-------|----------|---|
| metric.iops.read | integer | query | False | Filter by metric.iops.read • Introduced in: 9.7 |
| metric.latency.other | integer | query | False | Filter by metric.latency.other • Introduced in: 9.7 |
| metric.latency.total | integer | query | False | Filter by metric.latency.total • Introduced in: 9.7 |
| metric.latency.write | integer | query | False | Filter by metric.latency.write • Introduced in: 9.7 |
| metric.latency.read | integer | query | False | Filter by metric.latency.read • Introduced in: 9.7 |
| metric.timestamp | string | query | False | Filter by metric.timestamp • Introduced in: 9.7 |
| metric.throughput.write | integer | query | False | Filter by metric.throughput.write • Introduced in: 9.7 |
| metric.throughput.read | integer | query | False | Filter by metric.throughput.read • Introduced in: 9.7 |

| Name | Type | In | Required | Description |
|-------------------------|---------------|-------|----------|---|
| metric.throughput.total | integer | query | False | Filter by metric.throughput.total • Introduced in: 9.7 |
| metric.status | string | query | False | Filter by metric.status • Introduced in: 9.7 |
| metric.duration | string | query | False | Filter by metric.duration • Introduced in: 9.7 |
| target.name | string | query | False | Filter by target.name • maxLength: 128 • minLength: 1 |
| target.alias | string | query | False | Filter by target.alias • maxLength: 128 • minLength: 1 |
| enabled | boolean | query | False | Filter by enabled |
| 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 |

| Name | Type | In | Required | Description |
|----------------|---------------|-------|----------|---|
| return_timeout | integer | query | False | <p>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.</p> <ul style="list-style-type: none"> • Default value: 15 • 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 | The number of records in the response. |
| records | array[iscsi_service] | |

Example response

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "num_records": 1,
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "metric": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        }
      },
      "duration": "PT15S",
      "iops": {
        "read": 200,
        "total": 1000,
        "write": 100
      },
      "latency": {
        "read": 200,
        "total": 1000,
        "write": 100
      },
      "status": "ok",
      "throughput": {
        "read": 200,
        "total": 1000,
        "write": 100
      },
      "timestamp": "2017-01-25 11:20:13 +0000"
    },
    "statistics": {
      "iops_raw": {
```

```

        "read": 200,
        "total": 1000,
        "write": 100
    },
    "latency_raw": {
        "read": 200,
        "total": 1000,
        "write": 100
    },
    "status": "ok",
    "throughput_raw": {
        "read": 200,
        "total": 1000,
        "write": 100
    },
    "timestamp": "2017-01-25 11:20:13 +0000"
},
"svm": {
    "_links": {
        "self": {
            "href": "/api/resourcelink"
        }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
},
"target": {
    "alias": "svm1",
    "name": "iqn.1992-
08.com.netapp:sn.574caf71890911e8a6b7005056b4ea79:vs.2"
}
}
]
}

```

Error

Status: Default, Error

| Name | Type | Description |
|-------|--------------------------------|-------------|
| error | returned_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 | |

iops

The rate of I/O operations observed at the storage object.

| Name | Type | Description |
|-------|---------|--|
| other | integer | Performance metric for other I/O operations. Other I/O operations can be metadata operations, such as directory lookups and so on. |
| read | integer | Performance metric for read I/O operations. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

latency

The round trip latency in microseconds observed at the storage object.

| Name | Type | Description |
|-------|---------|--|
| other | integer | Performance metric for other I/O operations. Other I/O operations can be metadata operations, such as directory lookups and so on. |
| read | integer | Performance metric for read I/O operations. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

throughput

The rate of throughput bytes per second observed at the storage object.

| Name | Type | Description |
|-------|---------|---|
| read | integer | Performance metric for read I/O operations. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

metric

Performance numbers, such as IOPS latency and throughput, for SVM protocols.

| Name | Type | Description |
|----------|------------------------|--|
| _links | _links | |
| duration | string | The duration over which this sample is calculated. The time durations are represented in the ISO-8601 standard format. Samples can be calculated over the following durations: |
| iops | iops | The rate of I/O operations observed at the storage object. |

| Name | Type | Description |
|------------|----------------------------|---|
| latency | latency | The round trip latency in microseconds observed at the storage object. |
| status | string | Any errors associated with the sample. For example, if the aggregation of data over multiple nodes fails then any of the partial errors might be returned, "ok" on success, or "error" on any internal uncategorized failure. Whenever a sample collection is missed but done at a later time, it is back filled to the previous 15 second timestamp and tagged with "backfilled_data". "Inconsistent_delta_time" is encountered when the time between two collections is not the same for all nodes. Therefore, the aggregated value might be over or under inflated. "Negative_delta" is returned when an expected monotonically increasing value has decreased in value. "Inconsistent_old_data" is returned when one or more nodes do not have the latest data. |
| throughput | throughput | The rate of throughput bytes per second observed at the storage object. |
| timestamp | string | The timestamp of the performance data. |

iops_raw

The number of I/O operations observed at the storage object. This should be used along with delta time to calculate the rate of I/O operations per unit of time.

| Name | Type | Description |
|-------|---------|--|
| other | integer | Performance metric for other I/O operations. Other I/O operations can be metadata operations, such as directory lookups and so on. |

| Name | Type | Description |
|-------|---------|---|
| read | integer | Performance metric for read I/O operations. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

latency_raw

The raw latency in microseconds observed at the storage object. This should be divided by the raw IOPS value to calculate the average latency per I/O operation.

| Name | Type | Description |
|-------|---------|--|
| other | integer | Performance metric for other I/O operations. Other I/O operations can be metadata operations, such as directory lookups and so on. |
| read | integer | Performance metric for read I/O operations. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

throughput_raw

Throughput bytes observed at the storage object. This should be used along with delta time to calculate the rate of throughput bytes per unit of time.

| Name | Type | Description |
|-------|---------|---|
| read | integer | Performance metric for read I/O operations. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

statistics

These are raw performance numbers, such as IOPS latency and throughput for SVM protocols. These numbers are aggregated across all nodes in the cluster and increase with the uptime of the cluster.

| Name | Type | Description |
|----------------|--------------------------------|---|
| iops_raw | iops_raw | The number of I/O operations observed at the storage object. This should be used along with delta time to calculate the rate of I/O operations per unit of time. |
| latency_raw | latency_raw | The raw latency in microseconds observed at the storage object. This should be divided by the raw IOPS value to calculate the average latency per I/O operation. |
| status | string | Any errors associated with the sample. For example, if the aggregation of data over multiple nodes fails then any of the partial errors might be returned, "ok" on success, or "error" on any internal uncategorized failure. Whenever a sample collection is missed but done at a later time, it is back filled to the previous 15 second timestamp and tagged with "backfilled_data". "Inconsistent_delta_time" is encountered when the time between two collections is not the same for all nodes. Therefore, the aggregated value might be over or under inflated. "Negative_delta" is returned when an expected monotonically increasing value has decreased in value. "Inconsistent_old_data" is returned when one or more nodes do not have the latest data. |
| throughput_raw | throughput_raw | Throughput bytes observed at the storage object. This should be used along with delta time to calculate the rate of throughput bytes per unit of time. |

| Name | Type | Description |
|-----------|--------|--|
| timestamp | string | The timestamp of the performance data. |

svm

SVM, applies only to SVM-scoped objects.

| Name | Type | Description |
|--------|------------------------|---|
| _links | _links | |
| name | string | The name of the SVM. This field cannot be specified in a PATCH method. |
| uuid | string | The unique identifier of the SVM. This field cannot be specified in a PATCH method. |

target

| Name | Type | Description |
|-------|--------|--|
| alias | string | <p>The iSCSI target alias of the iSCSI service.</p> <p>The target alias can contain one (1) to 128 characters and feature any printable character except space (" "). A PATCH request with an empty alias ("") clears the alias.</p> <p>Optional in POST and PATCH. In POST, this defaults to the name of the SVM.</p> |

| Name | Type | Description |
|------|--------|---|
| name | string | <p>The iSCSI target name of the iSCSI service. This is generated for the SVM during POST.</p> <p>If required, the target name can be modified using the ONTAP command line.</p> <ul style="list-style-type: none"> • example: iqn.1992-08.com.netapp:sn.574caf71890911e8a6b7005056b4ea79:vs.2 • maxLength: 128 • minLength: 1 • readOnly: 1 • Introduced in: 9.6 • x-nullable: true |

iscsi_service

An iSCSI service defines the properties of the iSCSI target for an SVM. There can be at most one iSCSI service for an SVM. An SVM's iSCSI service must be created before iSCSI initiators can log in to the SVM.

An iSCSI service is identified by the UUID of its SVM.

| Name | Type | Description |
|---------|------------------------|--|
| _links | _links | |
| enabled | boolean | <p>The administrative state of the iSCSI service. The iSCSI service can be disabled to block all iSCSI connectivity to the SVM.</p> <p>Optional in POST and PATCH. The default setting is <i>true</i> (enabled) in POST.</p> |
| metric | metric | Performance numbers, such as IOPS latency and throughput, for SVM protocols. |

| Name | Type | Description |
|------------|----------------------------|---|
| statistics | statistics | These are raw performance numbers, such as IOPS latency and throughput for SVM protocols. These numbers are aggregated across all nodes in the cluster and increase with the uptime of the cluster. |
| svm | svm | SVM, applies only to SVM-scoped objects. |
| target | target | |

error_arguments

| Name | Type | Description |
|---------|--------|------------------|
| code | string | Argument code |
| message | string | Message argument |

returned_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 iSCSI service

POST /protocols/san/iscsi/services

Introduced In: 9.6

Creates an iSCSI service.

Required properties

- `svm.uuid` or `svm.name` - Existing SVM in which to create the iSCSI service.

Related ONTAP commands

- `vserver iscsi create`

Learn more

- [DOC /protocols/san/iscsi/services](#)

Parameters

| Name | Type | In | Required | Description |
|----------------|---------|-------|----------|---|
| 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 |
|---------|------------------------|--|
| enabled | boolean | <p>The administrative state of the iSCSI service. The iSCSI service can be disabled to block all iSCSI connectivity to the SVM.</p> <p>Optional in POST and PATCH. The default setting is <i>true</i> (enabled) in POST.</p> |
| svm | svm | SVM, applies only to SVM-scoped objects. |
| target | target | |

Example request

```
{
  "svm": {
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  },
  "target": {
    "alias": "svm1",
    "name": "iqn.1992-
08.com.netapp:sn.574caf71890911e8a6b7005056b4ea79:vs.2"
  }
}
```

Response

Status: 201, Created

| Name | Type | Description |
|-------------|--|--|
| num_records | integer | The number of records in the response. |
| records | array[iscsi_service] | |

Example response

```
{
  "num_records": 1,
  "records": [
    {
      "svm": {
        "name": "svm1",
        "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
      },
      "target": {
        "alias": "svm1",
        "name": "iqn.1992-
08.com.netapp:sn.574caf71890911e8a6b7005056b4ea79:vs.2"
      }
    }
  ]
}
```

Headers

| Name | Description | Type |
|----------|---|--------|
| Location | Useful for tracking the resource location | string |

Error

Status: Default

ONTAP Error Response Codes

| Error Code | Description |
|------------|---|
| 1115127 | The cluster lacks a valid iSCSI license. |
| 2621462 | The supplied SVM does not exist. |
| 2621507 | The iSCSI protocol is not allowed for the specified SVM. |
| 2621706 | The specified <code>svm.uuid</code> and <code>svm.name</code> do not refer to the same SVM. |
| 2621707 | No SVM was specified. Either <code>svm.name</code> or <code>svm.uuid</code> must be supplied. |

| Error Code | Description |
|------------|---|
| 5373966 | An iSCSI service cannot be created in an SVM that is configured for NVMe. |
| 5374077 | An iSCSI service already exists for the specified SVM. |
| 5374893 | The SVM is stopped. The SVM must be running to create an iSCSI service. |
| 5376452 | Service POST and DELETE are not supported on ASA r2. |

Also see the table of common errors in the [Response body](#) overview section of this documentation.

Definitions

See Definitions

href

| Name | Type | Description |
|------|--------|-------------|
| href | string | |

_links

iops

The rate of I/O operations observed at the storage object.

| Name | Type | Description |
|-------|---------|--|
| other | integer | Performance metric for other I/O operations. Other I/O operations can be metadata operations, such as directory lookups and so on. |
| read | integer | Performance metric for read I/O operations. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

latency

The round trip latency in microseconds observed at the storage object.

| Name | Type | Description |
|-------|---------|--|
| other | integer | Performance metric for other I/O operations. Other I/O operations can be metadata operations, such as directory lookups and so on. |
| read | integer | Performance metric for read I/O operations. |
| total | integer | Performance metric aggregated over all types of I/O operations. |

| Name | Type | Description |
|-------|---------|--|
| write | integer | Performance metric for write I/O operations. |

throughput

The rate of throughput bytes per second observed at the storage object.

| Name | Type | Description |
|-------|---------|---|
| read | integer | Performance metric for read I/O operations. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

metric

Performance numbers, such as IOPS latency and throughput, for SVM protocols.

| Name | Type | Description |
|----------|-------------------------|--|
| duration | string | The duration over which this sample is calculated. The time durations are represented in the ISO-8601 standard format. Samples can be calculated over the following durations: |
| iops | iops | The rate of I/O operations observed at the storage object. |
| latency | latency | The round trip latency in microseconds observed at the storage object. |

| Name | Type | Description |
|------------|------------|---|
| status | string | Any errors associated with the sample. For example, if the aggregation of data over multiple nodes fails then any of the partial errors might be returned, "ok" on success, or "error" on any internal uncategorized failure. Whenever a sample collection is missed but done at a later time, it is back filled to the previous 15 second timestamp and tagged with "backfilled_data". "Inconsistent_delta_time" is encountered when the time between two collections is not the same for all nodes. Therefore, the aggregated value might be over or under inflated. "Negative_delta" is returned when an expected monotonically increasing value has decreased in value. "Inconsistent_old_data" is returned when one or more nodes do not have the latest data. |
| throughput | throughput | The rate of throughput bytes per second observed at the storage object. |
| timestamp | string | The timestamp of the performance data. |

iops_raw

The number of I/O operations observed at the storage object. This should be used along with delta time to calculate the rate of I/O operations per unit of time.

| Name | Type | Description |
|-------|---------|--|
| other | integer | Performance metric for other I/O operations. Other I/O operations can be metadata operations, such as directory lookups and so on. |
| read | integer | Performance metric for read I/O operations. |

| Name | Type | Description |
|-------|---------|---|
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

latency_raw

The raw latency in microseconds observed at the storage object. This should be divided by the raw IOPS value to calculate the average latency per I/O operation.

| Name | Type | Description |
|-------|---------|--|
| other | integer | Performance metric for other I/O operations. Other I/O operations can be metadata operations, such as directory lookups and so on. |
| read | integer | Performance metric for read I/O operations. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

throughput_raw

Throughput bytes observed at the storage object. This should be used along with delta time to calculate the rate of throughput bytes per unit of time.

| Name | Type | Description |
|-------|---------|---|
| read | integer | Performance metric for read I/O operations. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

statistics

These are raw performance numbers, such as IOPS latency and throughput for SVM protocols. These numbers are aggregated across all nodes in the cluster and increase with the uptime of the cluster.

| Name | Type | Description |
|----------------|--------------------------------|---|
| iops_raw | iops_raw | The number of I/O operations observed at the storage object. This should be used along with delta time to calculate the rate of I/O operations per unit of time. |
| latency_raw | latency_raw | The raw latency in microseconds observed at the storage object. This should be divided by the raw IOPS value to calculate the average latency per I/O operation. |
| status | string | Any errors associated with the sample. For example, if the aggregation of data over multiple nodes fails then any of the partial errors might be returned, "ok" on success, or "error" on any internal uncategorized failure. Whenever a sample collection is missed but done at a later time, it is back filled to the previous 15 second timestamp and tagged with "backfilled_data". "Inconsistent_delta_time" is encountered when the time between two collections is not the same for all nodes. Therefore, the aggregated value might be over or under inflated. "Negative_delta" is returned when an expected monotonically increasing value has decreased in value. "Inconsistent_old_data" is returned when one or more nodes do not have the latest data. |
| throughput_raw | throughput_raw | Throughput bytes observed at the storage object. This should be used along with delta time to calculate the rate of throughput bytes per unit of time. |
| timestamp | string | The timestamp of the performance data. |

svm

SVM, applies only to SVM-scoped objects.

| Name | Type | Description |
|------|--------|---|
| name | string | The name of the SVM. This field cannot be specified in a PATCH method. |
| uuid | string | The unique identifier of the SVM. This field cannot be specified in a PATCH method. |

target

| Name | Type | Description |
|-------|--------|--|
| alias | string | <p>The iSCSI target alias of the iSCSI service.</p> <p>The target alias can contain one (1) to 128 characters and feature any printable character except space (" "). A PATCH request with an empty alias ("") clears the alias.</p> <p>Optional in POST and PATCH. In POST, this defaults to the name of the SVM.</p> |
| name | string | <p>The iSCSI target name of the iSCSI service. This is generated for the SVM during POST.</p> <p>If required, the target name can be modified using the ONTAP command line.</p> <ul style="list-style-type: none">• example: iqn.1992-08.com.netapp:sn.574caf71890911e8a6b7005056b4ea79:vs.2• maxLength: 128• minLength: 1• readOnly: 1• Introduced in: 9.6• x-nullable: true |

iscsi_service

An iSCSI service defines the properties of the iSCSI target for an SVM. There can be at most one iSCSI service for an SVM. An SVM's iSCSI service must be created before iSCSI initiators can log in to the SVM.

An iSCSI service is identified by the UUID of its SVM.

| Name | Type | Description |
|---------|------------------------|---|
| enabled | boolean | The administrative state of the iSCSI service. The iSCSI service can be disabled to block all iSCSI connectivity to the SVM. Optional in POST and PATCH. The default setting is <i>true</i> (enabled) in POST. |
| svm | svm | SVM, applies only to SVM-scoped objects. |
| target | target | |

error_arguments

| Name | Type | Description |
|---------|--------|------------------|
| code | string | Argument code |
| message | string | Message argument |

returned_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 an iSCSI service

DELETE /protocols/san/iscsi/services/{svm.uuid}

Introduced In: 9.6

Deletes an iSCSI service. An iSCSI service must be disabled before it can be deleted.

Related ONTAP commands

- `vserver iscsi delete`

Learn more

- [DOC /protocols/san/iscsi/services](#)

Parameters

| Name | Type | In | Required | Description |
|----------|--------|------|----------|---|
| svm.uuid | string | path | True | The unique identifier of the SVM for which to delete the iSCSI service. |

Response

Status: 200, Ok

Error

Status: Default

ONTAP Error Response Codes

| Error Code | Description |
|------------|--|
| 2621462 | An SVM with the specified UUID does not exist. |
| 5373960 | The iSCSI service is enabled. The iSCSI service must be disabled before it can be deleted. |
| 5374078 | The SVM does not have an iSCSI service. |
| 5376452 | Service POST and DELETE are not supported on ASA r2. |

Also see the table of common errors in the [Response body](#) overview section of this documentation.

| Name | Type | Description |
|-------|--------------------------------|-------------|
| error | returned_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 |

returned_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 an iSCSI service

GET /protocols/san/iscsi/services/{svm.uuid}

Introduced In: 9.6

Retrieves an iSCSI service.

Related ONTAP commands

- `vserver iscsi show`

Learn more

- [DOC /protocols/san/iscsi/services](#)

Parameters

| Name | Type | In | Required | Description |
|----------|---------------|-------|----------|---|
| svm.uuid | string | path | True | The unique identifier of the SVM for which to retrieve the iSCSI service. |
| fields | array[string] | query | False | Specify the fields to return. |

Response

Status: 200, Ok

| Name | Type | Description |
|---------|------------------------|---|
| _links | _links | |
| enabled | boolean | The administrative state of the iSCSI service. The iSCSI service can be disabled to block all iSCSI connectivity to the SVM. Optional in POST and PATCH. The default setting is <i>true</i> (enabled) in POST. |
| metric | metric | Performance numbers, such as IOPS latency and throughput, for SVM protocols. |

| Name | Type | Description |
|------------|----------------------------|---|
| statistics | statistics | These are raw performance numbers, such as IOPS latency and throughput for SVM protocols. These numbers are aggregated across all nodes in the cluster and increase with the uptime of the cluster. |
| svm | svm | SVM, applies only to SVM-scoped objects. |
| target | target | |

Example response

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "metric": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "duration": "PT15S",
    "iops": {
      "read": 200,
      "total": 1000,
      "write": 100
    },
    "latency": {
      "read": 200,
      "total": 1000,
      "write": 100
    },
    "status": "ok",
    "throughput": {
      "read": 200,
      "total": 1000,
      "write": 100
    },
    "timestamp": "2017-01-25 11:20:13 +0000"
  },
  "statistics": {
    "iops_raw": {
      "read": 200,
      "total": 1000,
      "write": 100
    },
    "latency_raw": {
      "read": 200,
      "total": 1000,
      "write": 100
    },
    "status": "ok",
    "throughput_raw": {
```

```

    "read": 200,
    "total": 1000,
    "write": 100
  },
  "timestamp": "2017-01-25 11:20:13 +0000"
},
"svm": {
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "name": "svm1",
  "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
},
"target": {
  "alias": "svm1",
  "name": "iqn.1992-
08.com.netapp:sn.574caf71890911e8a6b7005056b4ea79:vs.2"
}
}

```

Error

Status: Default

ONTAP Error Response Codes

| Error Code | Description |
|------------|--|
| 2621462 | An SVM with the specified UUID does not exist. |
| 5374078 | The SVM does not have an iSCSI service. |

Also see the table of common errors in the [Response body](#) overview section of this documentation.

| Name | Type | Description |
|-------|--------------------------------|-------------|
| error | returned_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 | |

iops

The rate of I/O operations observed at the storage object.

| Name | Type | Description |
|-------|---------|--|
| other | integer | Performance metric for other I/O operations. Other I/O operations can be metadata operations, such as directory lookups and so on. |
| read | integer | Performance metric for read I/O operations. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

latency

The round trip latency in microseconds observed at the storage object.

| Name | Type | Description |
|-------|---------|--|
| other | integer | Performance metric for other I/O operations. Other I/O operations can be metadata operations, such as directory lookups and so on. |
| read | integer | Performance metric for read I/O operations. |

| Name | Type | Description |
|-------|---------|---|
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

throughput

The rate of throughput bytes per second observed at the storage object.

| Name | Type | Description |
|-------|---------|---|
| read | integer | Performance metric for read I/O operations. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

metric

Performance numbers, such as IOPS latency and throughput, for SVM protocols.

| Name | Type | Description |
|----------|-------------------------|--|
| _links | _links | |
| duration | string | The duration over which this sample is calculated. The time durations are represented in the ISO-8601 standard format. Samples can be calculated over the following durations: |
| iops | iops | The rate of I/O operations observed at the storage object. |
| latency | latency | The round trip latency in microseconds observed at the storage object. |

| Name | Type | Description |
|------------|------------|---|
| status | string | Any errors associated with the sample. For example, if the aggregation of data over multiple nodes fails then any of the partial errors might be returned, "ok" on success, or "error" on any internal uncategorized failure. Whenever a sample collection is missed but done at a later time, it is back filled to the previous 15 second timestamp and tagged with "backfilled_data". "Inconsistent_delta_time" is encountered when the time between two collections is not the same for all nodes. Therefore, the aggregated value might be over or under inflated. "Negative_delta" is returned when an expected monotonically increasing value has decreased in value. "Inconsistent_old_data" is returned when one or more nodes do not have the latest data. |
| throughput | throughput | The rate of throughput bytes per second observed at the storage object. |
| timestamp | string | The timestamp of the performance data. |

iops_raw

The number of I/O operations observed at the storage object. This should be used along with delta time to calculate the rate of I/O operations per unit of time.

| Name | Type | Description |
|-------|---------|--|
| other | integer | Performance metric for other I/O operations. Other I/O operations can be metadata operations, such as directory lookups and so on. |
| read | integer | Performance metric for read I/O operations. |

| Name | Type | Description |
|-------|---------|---|
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

latency_raw

The raw latency in microseconds observed at the storage object. This should be divided by the raw IOPS value to calculate the average latency per I/O operation.

| Name | Type | Description |
|-------|---------|--|
| other | integer | Performance metric for other I/O operations. Other I/O operations can be metadata operations, such as directory lookups and so on. |
| read | integer | Performance metric for read I/O operations. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

throughput_raw

Throughput bytes observed at the storage object. This should be used along with delta time to calculate the rate of throughput bytes per unit of time.

| Name | Type | Description |
|-------|---------|---|
| read | integer | Performance metric for read I/O operations. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

statistics

These are raw performance numbers, such as IOPS latency and throughput for SVM protocols. These numbers are aggregated across all nodes in the cluster and increase with the uptime of the cluster.

| Name | Type | Description |
|----------------|--------------------------------|---|
| iops_raw | iops_raw | The number of I/O operations observed at the storage object. This should be used along with delta time to calculate the rate of I/O operations per unit of time. |
| latency_raw | latency_raw | The raw latency in microseconds observed at the storage object. This should be divided by the raw IOPS value to calculate the average latency per I/O operation. |
| status | string | Any errors associated with the sample. For example, if the aggregation of data over multiple nodes fails then any of the partial errors might be returned, "ok" on success, or "error" on any internal uncategorized failure. Whenever a sample collection is missed but done at a later time, it is back filled to the previous 15 second timestamp and tagged with "backfilled_data". "Inconsistent_delta_time" is encountered when the time between two collections is not the same for all nodes. Therefore, the aggregated value might be over or under inflated. "Negative_delta" is returned when an expected monotonically increasing value has decreased in value. "Inconsistent_old_data" is returned when one or more nodes do not have the latest data. |
| throughput_raw | throughput_raw | Throughput bytes observed at the storage object. This should be used along with delta time to calculate the rate of throughput bytes per unit of time. |
| timestamp | string | The timestamp of the performance data. |

svm

SVM, applies only to SVM-scoped objects.

| Name | Type | Description |
|------------------------|------------------------|---|
| _links | _links | |
| name | string | The name of the SVM. This field cannot be specified in a PATCH method. |
| uuid | string | The unique identifier of the SVM. This field cannot be specified in a PATCH method. |

target

| Name | Type | Description |
|-------|--------|--|
| alias | string | <p>The iSCSI target alias of the iSCSI service.</p> <p>The target alias can contain one (1) to 128 characters and feature any printable character except space (" "). A PATCH request with an empty alias ("") clears the alias.</p> <p>Optional in POST and PATCH. In POST, this defaults to the name of the SVM.</p> |
| name | string | <p>The iSCSI target name of the iSCSI service. This is generated for the SVM during POST.</p> <p>If required, the target name can be modified using the ONTAP command line.</p> <ul style="list-style-type: none">• example: iqn.1992-08.com.netapp:sn.574caf71890911e8a6b7005056b4ea79:vs.2• maxLength: 128• minLength: 1• readOnly: 1• Introduced in: 9.6• x-nullable: true |

error_arguments

| Name | Type | Description |
|---------|--------|------------------|
| code | string | Argument code |
| message | string | Message argument |

returned_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 an iSCSI service

PATCH /protocols/san/iscsi/services/{svm.uuid}

Introduced In: 9.6

Updates an iSCSI service.

Related ONTAP commands

- `vserver iscsi modify`
- `vserver iscsi start`
- `vserver iscsi stop`

Learn more

- [DOC /protocols/san/iscsi/services](#)

Parameters

| Name | Type | In | Required | Description |
|----------|--------|------|----------|---|
| svm.uuid | string | path | True | The unique identifier of the SVM for which to update the iSCSI service. |

Request Body

| Name | Type | Description |
|---------|------------------------|---|
| enabled | boolean | The administrative state of the iSCSI service. The iSCSI service can be disabled to block all iSCSI connectivity to the SVM. Optional in POST and PATCH. The default setting is <i>true</i> (enabled) in POST. |
| target | target | |

Example request

```
{
  "target": {
    "alias": "svm1",
    "name": "iqn.1992-08.com.netapp:sn.574caf71890911e8a6b7005056b4ea79:vs.2"
  }
}
```

Response

Status: 200, Ok

Error

Status: Default

ONTAP Error Response Codes

| Error Code | Description |
|------------|--|
| 2621462 | An SVM with the specified UUID does not exist. |
| 5374078 | The SVM does not have an iSCSI service. |

Also see the table of common errors in the [Response body](#) overview section of this documentation.

Definitions

See Definitions

href

| Name | Type | Description |
|------|--------|-------------|
| href | string | |

_links

iops

The rate of I/O operations observed at the storage object.

| Name | Type | Description |
|-------|---------|--|
| other | integer | Performance metric for other I/O operations. Other I/O operations can be metadata operations, such as directory lookups and so on. |
| read | integer | Performance metric for read I/O operations. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

latency

The round trip latency in microseconds observed at the storage object.

| Name | Type | Description |
|-------|---------|--|
| other | integer | Performance metric for other I/O operations. Other I/O operations can be metadata operations, such as directory lookups and so on. |
| read | integer | Performance metric for read I/O operations. |
| total | integer | Performance metric aggregated over all types of I/O operations. |

| Name | Type | Description |
|-------|---------|--|
| write | integer | Performance metric for write I/O operations. |

throughput

The rate of throughput bytes per second observed at the storage object.

| Name | Type | Description |
|-------|---------|---|
| read | integer | Performance metric for read I/O operations. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

metric

Performance numbers, such as IOPS latency and throughput, for SVM protocols.

| Name | Type | Description |
|----------|-------------------------|--|
| duration | string | The duration over which this sample is calculated. The time durations are represented in the ISO-8601 standard format. Samples can be calculated over the following durations: |
| iops | iops | The rate of I/O operations observed at the storage object. |
| latency | latency | The round trip latency in microseconds observed at the storage object. |

| Name | Type | Description |
|------------|------------|---|
| status | string | Any errors associated with the sample. For example, if the aggregation of data over multiple nodes fails then any of the partial errors might be returned, "ok" on success, or "error" on any internal uncategorized failure. Whenever a sample collection is missed but done at a later time, it is back filled to the previous 15 second timestamp and tagged with "backfilled_data". "Inconsistent_delta_time" is encountered when the time between two collections is not the same for all nodes. Therefore, the aggregated value might be over or under inflated. "Negative_delta" is returned when an expected monotonically increasing value has decreased in value. "Inconsistent_old_data" is returned when one or more nodes do not have the latest data. |
| throughput | throughput | The rate of throughput bytes per second observed at the storage object. |
| timestamp | string | The timestamp of the performance data. |

iops_raw

The number of I/O operations observed at the storage object. This should be used along with delta time to calculate the rate of I/O operations per unit of time.

| Name | Type | Description |
|-------|---------|--|
| other | integer | Performance metric for other I/O operations. Other I/O operations can be metadata operations, such as directory lookups and so on. |
| read | integer | Performance metric for read I/O operations. |

| Name | Type | Description |
|-------|---------|---|
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

latency_raw

The raw latency in microseconds observed at the storage object. This should be divided by the raw IOPS value to calculate the average latency per I/O operation.

| Name | Type | Description |
|-------|---------|--|
| other | integer | Performance metric for other I/O operations. Other I/O operations can be metadata operations, such as directory lookups and so on. |
| read | integer | Performance metric for read I/O operations. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

throughput_raw

Throughput bytes observed at the storage object. This should be used along with delta time to calculate the rate of throughput bytes per unit of time.

| Name | Type | Description |
|-------|---------|---|
| read | integer | Performance metric for read I/O operations. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

statistics

These are raw performance numbers, such as IOPS latency and throughput for SVM protocols. These numbers are aggregated across all nodes in the cluster and increase with the uptime of the cluster.

| Name | Type | Description |
|----------------|--------------------------------|---|
| iops_raw | iops_raw | The number of I/O operations observed at the storage object. This should be used along with delta time to calculate the rate of I/O operations per unit of time. |
| latency_raw | latency_raw | The raw latency in microseconds observed at the storage object. This should be divided by the raw IOPS value to calculate the average latency per I/O operation. |
| status | string | Any errors associated with the sample. For example, if the aggregation of data over multiple nodes fails then any of the partial errors might be returned, "ok" on success, or "error" on any internal uncategorized failure. Whenever a sample collection is missed but done at a later time, it is back filled to the previous 15 second timestamp and tagged with "backfilled_data". "Inconsistent_delta_time" is encountered when the time between two collections is not the same for all nodes. Therefore, the aggregated value might be over or under inflated. "Negative_delta" is returned when an expected monotonically increasing value has decreased in value. "Inconsistent_old_data" is returned when one or more nodes do not have the latest data. |
| throughput_raw | throughput_raw | Throughput bytes observed at the storage object. This should be used along with delta time to calculate the rate of throughput bytes per unit of time. |
| timestamp | string | The timestamp of the performance data. |

svm

SVM, applies only to SVM-scoped objects.

| Name | Type | Description |
|------|--------|---|
| name | string | The name of the SVM. This field cannot be specified in a PATCH method. |
| uuid | string | The unique identifier of the SVM. This field cannot be specified in a PATCH method. |

target

| Name | Type | Description |
|-------|--------|--|
| alias | string | <p>The iSCSI target alias of the iSCSI service.</p> <p>The target alias can contain one (1) to 128 characters and feature any printable character except space (" "). A PATCH request with an empty alias ("") clears the alias.</p> <p>Optional in POST and PATCH. In POST, this defaults to the name of the SVM.</p> |
| name | string | <p>The iSCSI target name of the iSCSI service. This is generated for the SVM during POST.</p> <p>If required, the target name can be modified using the ONTAP command line.</p> <ul style="list-style-type: none">• example: iqn.1992-08.com.netapp:sn.574caf71890911e8a6b7005056b4ea79:vs.2• maxLength: 128• minLength: 1• readOnly: 1• Introduced in: 9.6• x-nullable: true |

iscsi_service

An iSCSI service defines the properties of the iSCSI target for an SVM. There can be at most one iSCSI service for an SVM. An SVM's iSCSI service must be created before iSCSI initiators can log in to the SVM.

An iSCSI service is identified by the UUID of its SVM.

| Name | Type | Description |
|---------|------------------------|---|
| enabled | boolean | The administrative state of the iSCSI service. The iSCSI service can be disabled to block all iSCSI connectivity to the SVM. Optional in POST and PATCH. The default setting is <i>true</i> (enabled) in POST. |
| target | target | |

error_arguments

| Name | Type | Description |
|---------|--------|------------------|
| code | string | Argument code |
| message | string | Message argument |

returned_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 historical performance metrics for the iSCSI protocol of an SVM

GET /protocols/san/iscsi/services/{svm.uuid}/metrics

Introduced In: 9.7

Retrieves historical performance metrics for the iSCSI protocol service of an SVM.

Parameters

| Name | Type | In | Required | Description |
|------------------|---------|-------|----------|-----------------------------------|
| status | string | query | False | Filter by status |
| latency.other | integer | query | False | Filter by latency.other |
| latency.total | integer | query | False | Filter by latency.total |
| latency.write | integer | query | False | Filter by latency.write |
| latency.read | integer | query | False | Filter by latency.read |
| iops.other | integer | query | False | Filter by iops.other |
| iops.total | integer | query | False | Filter by iops.total |
| iops.write | integer | query | False | Filter by iops.write |
| iops.read | integer | query | False | Filter by iops.read |
| timestamp | string | query | False | Filter by timestamp |
| throughput.write | integer | query | False | Filter by throughput.write |
| throughput.read | integer | query | False | Filter by throughput.read |
| throughput.total | integer | query | False | Filter by throughput.total |
| duration | string | query | False | Filter by duration |
| svm.uuid | string | path | True | The unique identifier of the SVM. |

| Name | Type | In | Required | Description |
|----------|--------|-------|----------|---|
| interval | string | query | False | <p>The time range for the data. Examples can be 1h, 1d, 1m, 1w, 1y. The period for each time range is as follows:</p> <ul style="list-style-type: none"> • 1h: Metrics over the most recent hour sampled over 15 seconds. • 1d: Metrics over the most recent day sampled over 5 minutes. • 1w: Metrics over the most recent week sampled over 30 minutes. • 1m: Metrics over the most recent month sampled over 2 hours. • 1y: Metrics over the most recent year sampled over a day. • Default value: 1 • enum: ["1h", "1d", "1w", "1m", "1y"] |

| Name | Type | In | Required | Description |
|--|----------------|---------|----------|---|
| return_timeout | integer | query | False | <p>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.</p> <ul style="list-style-type: none"> • Default value: 15 • Max value: 120 • Min value: 0 |
| fields | array[string] | query | False | Specify the fields to return. |
| max_records | integer | query | False | Limit the number of records returned. |
| order_by | array[string] | query | False | Order results by specified fields and optional [asc |
| desc] direction. Default direction is 'asc' for ascending. | return_records | boolean | query | False |

Response

Status: 200, Ok

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

Example response

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "num_records": 1,
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "duration": "PT15S",
      "iops": {
        "read": 200,
        "total": 1000,
        "write": 100
      },
      "latency": {
        "read": 200,
        "total": 1000,
        "write": 100
      },
      "status": "ok",
      "svm": {
        "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
      },
      "throughput": {
        "read": 200,
        "total": 1000,
        "write": 100
      },
      "timestamp": "2017-01-25 11:20:13 +0000"
    }
  ]
}
```

Error

Status: Default

ONTAP Error Response Codes

| Error Code | Description |
|------------|---|
| 8585947 | No metrics are available for the requested object. |
| 8586225 | An unexpected error occurred retrieving metrics for the requested object. |

Also see the table of common errors in the [Response body](#) overview section of this documentation.

| Name | Type | Description |
|-------|--------------------------------|-------------|
| error | returned_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 | |

iops

The rate of I/O operations observed at the storage object.

| Name | Type | Description |
|-------|---------|--|
| other | integer | Performance metric for other I/O operations. Other I/O operations can be metadata operations, such as directory lookups and so on. |
| read | integer | Performance metric for read I/O operations. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

latency

The round trip latency in microseconds observed at the storage object.

| Name | Type | Description |
|-------|---------|--|
| other | integer | Performance metric for other I/O operations. Other I/O operations can be metadata operations, such as directory lookups and so on. |
| read | integer | Performance metric for read I/O operations. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

svm

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

throughput

The rate of throughput bytes per second observed at the storage object.

| Name | Type | Description |
|-------|---------|---|
| read | integer | Performance metric for read I/O operations. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

records

Performance numbers, such as IOPS latency and throughput, for SVM protocols.

| Name | Type | Description |
|--------|------------------------|-------------|
| _links | _links | |

| Name | Type | Description |
|------------|----------------------------|---|
| duration | string | The duration over which this sample is calculated. The time durations are represented in the ISO-8601 standard format. Samples can be calculated over the following durations: |
| iops | iops | The rate of I/O operations observed at the storage object. |
| latency | latency | The round trip latency in microseconds observed at the storage object. |
| status | string | Any errors associated with the sample. For example, if the aggregation of data over multiple nodes fails then any of the partial errors might be returned, "ok" on success, or "error" on any internal uncategorized failure. Whenever a sample collection is missed but done at a later time, it is back filled to the previous 15 second timestamp and tagged with "backfilled_data". "Inconsistent_delta_time" is encountered when the time between two collections is not the same for all nodes. Therefore, the aggregated value might be over or under inflated. "Negative_delta" is returned when an expected monotonically increasing value has decreased in value. "Inconsistent_old_data" is returned when one or more nodes do not have the latest data. |
| svm | svm | |
| throughput | throughput | The rate of throughput bytes per second observed at the storage object. |
| timestamp | string | The timestamp of the performance data. |

error_arguments

| Name | Type | Description |
|---------|--------|------------------|
| code | string | Argument code |
| message | string | Message argument |

returned_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 historical performance metrics for the iSCSI protocol service of an SVM for a specific time

GET /protocols/san/iscsi/services/{svm.uuid}/metrics/{timestamp}

Introduced In: 9.14

Retrieves historical performance metrics for the iSCSI protocol service of an SVM for a specific time.

Parameters

| Name | Type | In | Required | Description |
|-----------|---------------|-------|----------|--|
| svm.uuid | string | path | True | The unique identifier of the SVM. |
| timestamp | string | path | True | The timestamp of the performance data. <ul style="list-style-type: none"> format: date-time |
| fields | array[string] | query | False | Specify the fields to return. |

Response

Status: 200, Ok

| Name | Type | Description |
|------------------------|----------------------------|---|
| _links | _links | |
| duration | string | The duration over which this sample is calculated. The time durations are represented in the ISO-8601 standard format. Samples can be calculated over the following durations: |
| iops | iops | The rate of I/O operations observed at the storage object. |
| latency | latency | The round trip latency in microseconds observed at the storage object. |
| status | string | Any errors associated with the sample. For example, if the aggregation of data over multiple nodes fails then any of the partial errors might be returned, "ok" on success, or "error" on any internal uncategorized failure. Whenever a sample collection is missed but done at a later time, it is back filled to the previous 15 second timestamp and tagged with "backfilled_data". "Inconsistent_delta_time" is encountered when the time between two collections is not the same for all nodes. Therefore, the aggregated value might be over or under inflated. "Negative_delta" is returned when an expected monotonically increasing value has decreased in value. "Inconsistent_old_data" is returned when one or more nodes do not have the latest data. |
| svm | svm | |
| throughput | throughput | The rate of throughput bytes per second observed at the storage object. |

| Name | Type | Description |
|-----------|--------|--|
| timestamp | string | The timestamp of the performance data. |

Example response

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "duration": "PT15S",
  "iops": {
    "read": 200,
    "total": 1000,
    "write": 100
  },
  "latency": {
    "read": 200,
    "total": 1000,
    "write": 100
  },
  "status": "ok",
  "svm": {
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  },
  "throughput": {
    "read": 200,
    "total": 1000,
    "write": 100
  },
  "timestamp": "2017-01-25 11:20:13 +0000"
}
```

Error

Status: Default

ONTAP Error Response Codes

| Error Code | Description |
|------------|---|
| 8585947 | No metrics are available for the requested object. |
| 8586225 | An unexpected error occurred retrieving metrics for the requested object. |

Also see the table of common errors in the [Response body](#) overview section of this documentation.

| Name | Type | Description |
|-------|--------------------------------|-------------|
| error | returned_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 | |

iops

The rate of I/O operations observed at the storage object.

| Name | Type | Description |
|-------|---------|--|
| other | integer | Performance metric for other I/O operations. Other I/O operations can be metadata operations, such as directory lookups and so on. |
| read | integer | Performance metric for read I/O operations. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

latency

The round trip latency in microseconds observed at the storage object.

| Name | Type | Description |
|-------|---------|--|
| other | integer | Performance metric for other I/O operations. Other I/O operations can be metadata operations, such as directory lookups and so on. |
| read | integer | Performance metric for read I/O operations. |

| Name | Type | Description |
|-------|---------|---|
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

svm

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

throughput

The rate of throughput bytes per second observed at the storage object.

| Name | Type | Description |
|-------|---------|---|
| read | integer | Performance metric for read I/O operations. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Performance metric for write I/O operations. |

error_arguments

| Name | Type | Description |
|---------|--------|------------------|
| code | string | Argument code |
| message | string | Message argument |

returned_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. |

Copyright information

Copyright © 2026 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.