# NAS

## REST API reference

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# NAS

# NAS overview

## Overview

These APIs allow you to complete various tasks, including:

- Creating an NFS server for an SVM
- Managing an NFS configuration of an SVM
- Viewing and updating the NFS configuration of an SVM
- Configuring export policies and rules for an SVM
- Managing export policies and rules for an SVM

## APIs

### NFS

The NFS APIs enable you to create and configure NFS settings for an SVM. You can delete or update NFS configurations, and you can also disable or enable different NFS features as needed.

### Exports

The export APIs allow you to create and manage export policies for an SVM that enable an administrator to restrict access to volumes for clients that match specific IP addresses and specific authentication types. Export APIs are also used to create export rules for an export policy. The APIs allow each rule to specify the number of mask bits in the client IP address that must be matched for that rule to apply to a particular client request. The APIs also allow each export rule to specify the authentication types that are required for both read-only and read-write operations.

### Kerberos

Kerberos is a protocol designed to provide strong authentication for users and hosts within a client/server environment. The basis of the protocol is a shared, secret-key cryptology system. (Kerberos uses shared-key encryption to ensure the confidentiality of the data. It also uses hashing techniques to ensure the integrity of the data (so that no one can modify the data unless allowed to do so). With the NetApp multiprotocol storage platform, through which clients based on UNIX or Windows can access data using CIFS or NFS, it is crucial to provide the ability to use standard network services for authentication and for identity storage.

To configure an ONTAP system to use Kerberos for NFS, Kerberos must be enabled on a data LIF in the SVM that owns the NFS server. A Kerberos realm needs to be created before enabling Kerberos on a data LIF. (The Kerberos realm is needed so that the cluster knows how to format Kerberos ticket requests.) The Kerberos APIs allow you to define, create, modify, and delete realms for the SVM. The APIs also allow you to enable/disable Kerberos on a data LIF and update the Kerberos interface configuration for a particular data LIF in the SVM.

# Manage NAS audit configurations

# Protocols audit endpoint overview

## Overview

Auditing for NAS events is a security measure that enables you to track and log certain CIFS and NFS events on storage virtual machines (SVMs). This helps you track potential security problems and provides evidence of any security breaches.

## Examples

#### Creating an audit entry with log rotation size and log retention count

To create an audit entry with log rotation size and log retention count, use the following API. Note the *return_records=true* query parameter is used to obtain the newly created entry in the response.

```
# The API:
POST /api/protocols/audit/

# The call:
curl -X POST "https://<mgmt-ip>/api/protocols/audit" -H "accept:
application/json" -H "Content-Type: application/json" -d "{ \"enabled\":
true, \"events\": { \"authorization_policy\": false, \"cap_staging\":
false, \"cifs_logon_logoff\": true, \"file_operations\": true,
\"file_share\": false, \"security_group\": false, \"user_account\": false
}, \"log\": { \"format\": \"evtx\", \"retention\": { \"count\": 10 },
\"rotation\": { \"size\": 2048000 }}, \"log_path\": \"/\", \"svm\": {
\"name\": \"vs1\", \"uuid\": \"ec650e97-156e-11e9-abcb-005056bbd0bf\" }}"

# The response:
{
"records": [
  {
    "svm": {
      "uuid": "ec650e97-156e-11e9-abcb-005056bbd0bf",
      "name": "vs1"
    },
    "enabled": true,
    "events": {
      "authorization_policy": false,
      "cap_staging": false,
      "cifs_logon_logoff": true,
      "file_operations": true,
      "file_share": false,
      "security_group": false,
      "user_account": false
```

```
    },
    "log": {
      "format": "evtx",
      "rotation": {
        "size": 2048000
      },
      "retention": {
        "count": 10,
        "duration": "0s"
      }
    },
    "log_path": "/"
  }
],
"num_records": 1
}
```

#### Creating an audit entry with log rotation schedule and log retention duration

To create an audit entry with log rotation schedule and log retention duration, use the following API. Note that the *return_records=true* query parameter is used to obtain the newly created entry in the response.

```
# The API:
POST /api/protocols/audit/

# The call:
curl -X POST "https://<mgmt-ip>/api/protocols/audit" -H "accept:
application/json" -H "Content-Type: application/json" -d "{ \"enabled\":
false, \"events\": { \"authorization_policy\": false, \"cap_staging\":
false, \"cifs_logon_logoff\": true, \"file_operations\": true,
\"file_share\": false, \"security_group\": false, \"user_account\": false
}, \"log\": { \"format\": \"xml\", \"retention\": { \"duration\":
\"P4DT12H30M5S\" }, \"rotation\": { \"schedule\": { \"days\": [1, 5, 10,
15], \"hours\": [0, 1, 6, 12, 18, 23], \"minutes\": [10, 15, 30, 45, 59],
\"months\": [0], \"weekdays\": [0, 2, 5] } } }, \"log_path\": \"/\",
\"svm\": { \"name\": \"vs3\", \"uuid\": \"a8d64674-13fc-11e9-87b1-
005056a7ae7e\" }}"

# The response:
{
"records": [
  {
    "svm": {
```

```
      "uuid": "a8d64674-13fc-11e9-87b1-005056a7ae7e",
      "name": "vs3"
    },
    "enabled": true,
    "events": {
      "authorization_policy": false,
      "cap_staging": false,
      "cifs_logon_logoff": true,
      "file_operations": true,
      "file_share": false,
      "security_group": false,
      "user_account": false
    },
    "log": {
      "format": "xml",
      "rotation": {
        "schedule": {
          "minutes": [
            10,
            15,
            30,
            45,
            59
          ],
          "hours": [
            0,
            1,
            6,
            12,
            18,
            23
          ],
          "weekdays": [
            0,
            2,
            5
          ],
          "days": [
            1,
            5,
            10,
            15
          ],
          "months": [
            0
          ]
```

```
        }
      },
      "retention": {
        "count": 0,
        "duration": "P4DT12H30M5S"
      }
    },
    "log_path": "/"
  }
],
"num_records": 1
}
```

#### Retrieving an audit configuration for all SVMs in the cluster

```
# The API:
GET /api/protocols/audit/

# The call:
curl -X GET "https://<mgmt-
ip>/api/protocols/audit?fields=*&return_records=true&return_timeout=15" -H
"accept: application/json"

# The response:
{
"records": [
  {
    "svm": {
      "uuid": "ec650e97-156e-11e9-abcb-005056bbd0bf",
      "name": "vs1"
    },
    "enabled": true,
    "events": {
      "authorization_policy": false,
      "cap_staging": false,
      "cifs_logon_logoff": true,
      "file_operations": true,
      "file_share": false,
      "security_group": false,
      "user_account": false
    },
    "log": {
```

```
      "format": "evtx",
      "rotation": {
        "size": 2048000
      },
      "retention": {
        "count": 10,
        "duration": "0s"
      }
    },
    "log_path": "/"
  },
  {
    "svm": {
      "uuid": "a8d64674-13fc-11e9-87b1-005056a7ae7e",
      "name": "vs3"
    },
    "enabled": true,
    "events": {
      "authorization_policy": false,
      "cap_staging": false,
      "cifs_logon_logoff": true,
      "file_operations": true,
      "file_share": false,
      "security_group": false,
      "user_account": false
    },
    "log": {
      "format": "xml",
      "rotation": {
        "schedule": {
          "minutes": [
            10,
            15,
            30,
            45,
            59
          ],
          "hours": [
            0,
            1,
            6,
            12,
            18,
            23
          ],
          "weekdays": [
```

```
            0,
            2,
            5
          ],
          "days": [
            1,
            5,
            10,
            15
          ],
          "months": [
            0
          ]
        }
      },
      "retention": {
        "count": 0,
        "duration": "P4DT12H30M5S"
      }
    },
    "log_path": "/"
  }
],
"num_records": 2
}
```

#### Retrieving specific entries with event list as cifs-logon-logoff, file-ops = true for an SVM

The configuration returned is identified by the events in the list of audit configurations for an SVM.

```
# The API:
GET /api/protocols/audit/

# The call:
curl -X GET "https://<mgmt-
ip>/api/protocols/audit?events.file_operations=true&events.cifs_logon_logo
ff=true&return_records=true&return_timeout=15" -H "accept:
application/json"

# The response:
{
"records": [
  {
    "svm": {
      "uuid": "ec650e97-156e-11e9-abcb-005056bbd0bf",
      "name": "vs1"
    },
    "events": {
      "cifs_logon_logoff": true,
      "file_operations": true
    }
  },
  {
    "svm": {
      "uuid": "a8d64674-13fc-11e9-87b1-005056a7ae7e",
      "name": "vs3"
    },
    "events": {
      "cifs_logon_logoff": true,
      "file_operations": true
    }
  }
],
"num_records": 2
}
```

#### Retrieving a specific audit configuration for an SVM

The configuration returned is identified by the UUID of its SVM.

```
# The API:
GET /api/protocols/audit/{svm.uuid}

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/audit/ec650e97-156e-11e9-
abcb-005056bbd0bf" -H "accept: application/json"

# The response:
{
"svm": {
  "uuid": "ec650e97-156e-11e9-abcb-005056bbd0bf",
  "name": "vs1"
},
"enabled": true,
"events": {
  "authorization_policy": false,
  "cap_staging": false,
  "cifs_logon_logoff": true,
  "file_operations": true,
  "file_share" : false,
  "security_group": false,
  "user_account": false
},
"log": {
  "format": "evtx",
  "rotation": {
    "size": 2048000
  },
  "retention": {
    "count": 10,
    "duration": "0s"
  }
},
"log_path": "/"
}
```

#### Updating a specific audit configuration of an SVM

The configuration is identified by the UUID of its SVM and the provided information is updated.

```
# The API:
PATCH /api/protocols/audit/{svm.uuid}

# The call:
curl -X PATCH "https://<mgmt-ip>/api/protocols/audit/ec650e97-156e-11e9-
abcb-005056bbd0bf" -H "accept: application/json" -H "Content-Type:
application/json" -d "{ \"enabled\": false}"
```

#### Deleting a specific audit configuration for an SVM

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

```
# The API:
DELETE /api/protocols/audit/{svm.uuid}

# The call:
curl -X DELETE "https://<mgmt-ip>/api/protocols/audit/ec650e97-156e-11e9-
abcb-005056bbd0bf" -H "accept: application/json"
```

## Retrieve audit configurations

GET `/protocols/audit`

Retrieves audit configurations.

### Related ONTAP commands

- `vserver audit show`

### Learn more

- DOC /protocols/audit

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| log.rotation.schedule .days | integer | query | False | Filter by log.rotation.schedule .days |

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| log.rotation.schedule.weekdays | integer | query | False | Filter by log.rotation.schedule.weekdays |
| log.rotation.schedule.minutes | integer | query | False | Filter by log.rotation.schedule.minutes |
| log.rotation.schedule.hours | integer | query | False | Filter by log.rotation.schedule.hours |
| log.rotation.schedule.months | integer | query | False | Filter by log.rotation.schedule.months |
| log.rotation.size | integer | query | False | Filter by log.rotation.size |
| log.retention.count | integer | query | False | Filter by log.retention.count |
| log.retention.duration | string | query | False | Filter by log.retention.duration |
| log.format | string | query | False | Filter by log.format |
| log_path | string | query | False | Filter by log_path |
| enabled | boolean | query | False | Filter by enabled |
| svm.uuid | string | query | False | Filter by svm.uuid |
| svm.name | string | query | False | Filter by svm.name |
| events.authorization_policy | boolean | query | False | Filter by events.authorization_policy |
| events.user_account | boolean | query | False | Filter by events.user_account |
| events.security_group | boolean | query | False | Filter by events.security_group |

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

**Response**

```
Status: 200, Ok
```

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

**Example response**


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "log": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "format": "string",
        "retention": {
          "duration": "P4DT12H30M5S"
        },
        "rotation": {
          "schedule": {
            "days": [
              "integer"
            ],
            "hours": [
              "integer"
            ],
            "minutes": [
              "integer"
            ],
            "months": [
              "integer"
            ],
            "weekdays": [
              "integer"
            ]
          }
        }
      },
      "log_path": "string",
      "svm": {
        "_links": {
```

```
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "svm1",
        "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
      }
    }
  ]
}
```


### 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 |
|---|---|---|
| next | href | |
| self | href | |

events

| Name | Type | Description |
|---|---|---|
| authorization_policy | boolean | Authorization policy change events |
| cap_staging | boolean | Central access policy staging events |
| cifs_logon_logoff | boolean | CIFS logon and logoff events |
| file_operations | boolean | File operation events |
| file_share | boolean | File share category events |
| security_group | boolean | Local security group management events |
| user_account | boolean | Local user account management events |

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

retention

| Name | Type | Description |
|---|---|---|
| count | integer | Determines how many audit log files to retain before rotating the oldest log file out. This is mutually exclusive with duration. |
| duration | string | Specifies an ISO-8601 format date and time to retain the audit log file. The audit log files are deleted once they reach the specified date/time. This is mutually exclusive with count. |

audit_schedule

Rotates the audit logs based on a schedule by using the time-based rotation parameters in any combination. The rotation schedule is calculated by using all the time-related values.

| Name | Type | Description |
|---|---|---|
| days | array[integer] | Specifies the day of the month schedule to rotate audit log. Leave empty for all. |
| hours | array[integer] | Specifies the hourly schedule to rotate audit log. Leave empty for all. |
| minutes | array[integer] | Specifies the minutes schedule to rotate the audit log. |
| months | array[integer] | Specifies the months schedule to rotate audit log. Leave empty for all. |
| weekdays | array[integer] | Specifies the weekdays schedule to rotate audit log. Leave empty for all. |

rotation

Audit event log files are rotated when they reach a configured threshold log size or are on a configured schedule. When an event log file is rotated, the scheduled consolidation task first renames the active converted file to a time-stamped archive file, and then creates a new active converted event log file.

| Name | Type | Description |
|---|---|---|
| now | boolean | Manually rotates the audit logs. Optional in PATCH only. Not available in POST. |
| schedule | audit_schedule | Rotates the audit logs based on a schedule by using the time-based rotation parameters in any combination. The rotation schedule is calculated by using all the time-related values. |
| size | integer | Rotates logs based on log size in bytes. |

log

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| format | string | The format in which the logs are generated by consolidation process. Possible values are:<br>• xml - Data ONTAP-specific XML log format<br>• evtx - Microsoft Windows EVTX log format<br>◦ Default value: 1<br>◦ enum: ["xml", "evtx"] |
| retention | retention | |
| rotation | rotation | Audit event log files are rotated when they reach a configured threshold log size or are on a configured schedule. When an event log file is rotated, the scheduled consolidation task first renames the active converted file to a time-stamped archive file, and then creates a new active converted event log file. |

svm

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

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

audit

Auditing for NAS events is a security measure that enables you to track and log certain CIFS and NFS events on SVMs.

| Name | Type | Description |
|---|---|---|
| enabled | boolean | Specifies whether or not auditing is enabled on the SVM. |
| events | events | |
| log | log | |
| log_path | string | The audit log destination path where consolidated audit logs are stored. |
| svm | svm | |

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 audit configuration

POST `/protocols/audit`

Creates an audit configuration.

### Required properties

- `svm.uuid` or `svm.name` - Existing SVM to which audit configuration is to be created.
- `log_path` - Path in the owning SVM namespace that is used to store audit logs.

### Default property values

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

- `enabled` - *true*
- `events.authorization_policy` - *false*
- `events.cap_staging` - *false*
- `events.file_share` - *false*
- `events.security_group` - *false*
- `events.user_account` - *false*
- `events.cifs_logon_logoff` - *true*
- `events.file_operations` - *true*
- `log.format` - *evtx*
- `log.retention.count` - *0*
- `log.retention.duration` - *PT0S*
- `log.rotation.size` - *100MB*
- `log.rotation.now` - *false*

### Related ONTAP commands

- `vserver audit create`
- `vserver audit enable`

### Learn more

- DOC /protocols/audit

### Parameters

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

**Request Body**

| Name | Type | Description |
|---|---|---|
| enabled | boolean | Specifies whether or not auditing is enabled on the SVM. |
| events | events | |
| log | log | |
| log_path | string | The audit log destination path where consolidated audit logs are stored. |
| svm | svm | |

**Example request**

```
{
  "log": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "format": "string",
    "retention": {
      "duration": "P4DT12H30M5S"
    },
    "rotation": {
      "schedule": {
        "days": [
          "integer"
        ],
        "hours": [
          "integer"
        ],
        "minutes": [
          "integer"
        ],
        "months": [
          "integer"
        ],
        "weekdays": [
          "integer"
        ]
      }
    }
  },
  "log_path": "string",
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  }
}
```

### Response

```
Status: 202, Accepted
```

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

**Example response**


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "log": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "format": "string",
        "retention": {
          "duration": "P4DT12H30M5S"
        },
        "rotation": {
          "schedule": {
            "days": [
              "integer"
            ],
            "hours": [
              "integer"
            ],
            "minutes": [
              "integer"
            ],
            "months": [
              "integer"
            ],
            "weekdays": [
              "integer"
            ]
          }
        }
      },
      "log_path": "string",
      "svm": {
        "_links": {
```

```
            "self": {
              "href": "/api/resourcelink"
            }
          },
          "name": "svm1",
          "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
        }
      }
    ]
  }
```


### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 262196 | Log_rotation_now is not an allowed operation |
| 2621462 | The specified SVM does not exist |
| 9699330 | An audit configuration already exists |
| 9699337 | Audit system internal update is in progress, audit configuration create failed |
| 9699340 | SVM UUID lookup failed |
| 9699358 | Audit configuration is absent for enabling |
| 9699359 | Audit configuration is already enabled |
| 9699360 | Final consolidation is in progress, audit enable failed |
| 9699365 | Enabling of audit configuration failed |
| 9699370 | Auditing was successfully configured, however audit configuration could not be enabled |
| 9699384 | The specified log_path does not exist |
| 9699385 | The log_path must be a directory |
| 9699386 | The log_path must be a canonical path in the SVMs namespace |
| 9699387 | The log_path cannot be empty |
| 9699388 | Rotate size must be greater than or equal to 1024 KB |
| 9699389 | The log_path must not contain a symbolic link |
| 9699398 | The log_path exceeds a maximum supported length of characters |

| Error Code | Description |
|---|---|
| 9699399 | The log_path contains an unsupported read-only (DP/LS) volume |
| 9699400 | The specified log_path is not a valid destination for SVM |
| 9699402 | The log_path contains an unsupported snaplock volume |
| 9699403 | The log_path cannot be accessed for validation |
| 9699406 | The log_path validation failed |
| 9699409 | Failed to enable multiproto.audit.evtxlog.support support capability |
| 9699428 | All nodes need to run ONTAP 8.3.0 release to audit CIFS logon-logoff events |
| 9699429 | Failed to enable multiproto.audit.cifslogonlogoff.support support capability |
| 9699431 | All nodes need to run ONTAP 8.3.0 release to audit CAP staging events |
| 9699432 | Failed to enable multiproto.audit.capstaging.support support capability |

| 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**

events

| Name | Type | Description |
|---|---|---|
| authorization_policy | boolean | Authorization policy change events |
| cap_staging | boolean | Central access policy staging events |
| cifs_logon_logoff | boolean | CIFS logon and logoff events |
| file_operations | boolean | File operation events |
| file_share | boolean | File share category events |
| security_group | boolean | Local security group management events |
| user_account | boolean | Local user account management events |

href

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

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

retention

| Name | Type | Description |
|---|---|---|
| count | integer | Determines how many audit log files to retain before rotating the oldest log file out. This is mutually exclusive with duration. |

| Name | Type | Description |
| --- | --- | --- |
| duration | string | Specifies an ISO-8601 format date and time to retain the audit log file. The audit log files are deleted once they reach the specified date/time. This is mutually exclusive with count. |

audit_schedule

Rotates the audit logs based on a schedule by using the time-based rotation parameters in any combination. The rotation schedule is calculated by using all the time-related values.

| Name | Type | Description |
| --- | --- | --- |
| days | array[integer] | Specifies the day of the month schedule to rotate audit log. Leave empty for all. |
| hours | array[integer] | Specifies the hourly schedule to rotate audit log. Leave empty for all. |
| minutes | array[integer] | Specifies the minutes schedule to rotate the audit log. |
| months | array[integer] | Specifies the months schedule to rotate audit log. Leave empty for all. |
| weekdays | array[integer] | Specifies the weekdays schedule to rotate audit log. Leave empty for all. |

rotation

Audit event log files are rotated when they reach a configured threshold log size or are on a configured schedule. When an event log file is rotated, the scheduled consolidation task first renames the active converted file to a time-stamped archive file, and then creates a new active converted event log file.

| Name | Type | Description |
| --- | --- | --- |
| now | boolean | Manually rotates the audit logs. Optional in PATCH only. Not available in POST. |

| Name | Type | Description |
|---|---|---|
| schedule | audit_schedule | Rotates the audit logs based on a schedule by using the time-based rotation parameters in any combination. The rotation schedule is calculated by using all the time-related values. |
| size | integer | Rotates logs based on log size in bytes. |

log

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| format | string | The format in which the logs are generated by consolidation process. Possible values are:<br>• xml - Data ONTAP-specific XML log format<br>• evtx - Microsoft Windows EVTX log format<br>◦ Default value: 1<br>◦ enum: ["xml", "evtx"] |
| retention | retention | |
| rotation | rotation | Audit event log files are rotated when they reach a configured threshold log size or are on a configured schedule. When an event log file is rotated, the scheduled consolidation task first renames the active converted file to a time-stamped archive file, and then creates a new active converted event log file. |

svm

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

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

audit

Auditing for NAS events is a security measure that enables you to track and log certain CIFS and NFS events on SVMs.

| Name | Type | Description |
|---|---|---|
| enabled | boolean | Specifies whether or not auditing is enabled on the SVM. |
| events | events | |
| log | log | |
| log_path | string | The audit log destination path where consolidated audit logs are stored. |
| svm | svm | |

_links

| Name | Type | Description |
|---|---|---|
| next | href | |
| self | href | |

error_arguments

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

error

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

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

## Delete an audit configuration

DELETE `/protocols/audit/{svm.uuid}`

Deletes an audit configuration.

### Related ONTAP commands

- `vserver audit disable`
- `vserver audit delete`

### Learn more

- DOC /protocols/audit

### Parameters

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

**Response**

```
Status: 202, Accepted
```

**Error**

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 9699349 | Auditing should be disabled before deleting the audit configuration |

| Error Code | Description |
|---|---|
| 9699350 | Audit configuration cannot be deleted, final consolidation is in progress |
| 9699410 | Failed to disable multiproto.audit.evtxlog.support support capability |
| 9699430 | Failed to disable multiproto.audit.cifslogonlogoff.support support capability |
| 9699433 | Failed to disable multiproto.audit.capstaging.support support capability |

| 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 the audit configuration for an SVM

GET `/protocols/audit/{svm.uuid}`

Retrieves an audit configuration for an SVM.

#### Related ONTAP commands

- `vserver audit show`

#### Learn more

- DOC /protocols/audit

#### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| fields | array[string] | query | False | Specify the fields to return. |

### Response

```
Status: 200, Ok
```

| Name | Type | Description |
|---|---|---|
| enabled | boolean | Specifies whether or not auditing is enabled on the SVM. |
| events | events | |
| log | log | |
| log_path | string | The audit log destination path where consolidated audit logs are stored. |
| svm | svm | |

**Example response**


```
{
  "log": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "format": "string",
    "retention": {
      "duration": "P4DT12H30M5S"
    },
    "rotation": {
      "schedule": {
        "days": [
          "integer"
        ],
        "hours": [
          "integer"
        ],
        "minutes": [
          "integer"
        ],
        "months": [
          "integer"
        ],
        "weekdays": [
          "integer"
        ]
      }
    }
  },
  "log_path": "string",
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  }
}
```

### 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**

events

| Name | Type | Description |
|---|---|---|
| authorization_policy | boolean | Authorization policy change events |
| cap_staging | boolean | Central access policy staging events |
| cifs_logon_logoff | boolean | CIFS logon and logoff events |
| file_operations | boolean | File operation events |
| file_share | boolean | File share category events |
| security_group | boolean | Local security group management events |
| user_account | boolean | Local user account management events |

href

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

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

retention

| Name | Type | Description |
|---|---|---|
| count | integer | Determines how many audit log files to retain before rotating the oldest log file out. This is mutually exclusive with duration. |

| Name | Type | Description |
|---|---|---|
| duration | string | Specifies an ISO-8601 format date and time to retain the audit log file. The audit log files are deleted once they reach the specified date/time. This is mutually exclusive with count. |

audit_schedule

Rotates the audit logs based on a schedule by using the time-based rotation parameters in any combination. The rotation schedule is calculated by using all the time-related values.

| Name | Type | Description |
|---|---|---|
| days | array[integer] | Specifies the day of the month schedule to rotate audit log. Leave empty for all. |
| hours | array[integer] | Specifies the hourly schedule to rotate audit log. Leave empty for all. |
| minutes | array[integer] | Specifies the minutes schedule to rotate the audit log. |
| months | array[integer] | Specifies the months schedule to rotate audit log. Leave empty for all. |
| weekdays | array[integer] | Specifies the weekdays schedule to rotate audit log. Leave empty for all. |

rotation

Audit event log files are rotated when they reach a configured threshold log size or are on a configured schedule. When an event log file is rotated, the scheduled consolidation task first renames the active converted file to a time-stamped archive file, and then creates a new active converted event log file.

| Name | Type | Description |
|---|---|---|
| now | boolean | Manually rotates the audit logs. Optional in PATCH only. Not available in POST. |

| Name | Type | Description |
|---|---|---|
| schedule | audit_schedule | Rotates the audit logs based on a schedule by using the time-based rotation parameters in any combination. The rotation schedule is calculated by using all the time-related values. |
| size | integer | Rotates logs based on log size in bytes. |

log

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| format | string | The format in which the logs are generated by consolidation process. Possible values are:<br>• xml - Data ONTAP-specific XML log format<br>• evtx - Microsoft Windows EVTX log format<br>◦ Default value: 1<br>◦ enum: ["xml", "evtx"] |
| retention | retention | |
| rotation | rotation | Audit event log files are rotated when they reach a configured threshold log size or are on a configured schedule. When an event log file is rotated, the scheduled consolidation task first renames the active converted file to a time-stamped archive file, and then creates a new active converted event log file. |

svm

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

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

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 the audit configuration for an SVM

PATCH `/protocols/audit/{svm.uuid}`

Updates an audit configuration for an SVM.

### Related ONTAP commands

- `vserver audit modify`

### Learn more

- DOC /protocols/audit

### Parameters

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

**Request Body**

| Name | Type | Description |
|---|---|---|
| enabled | boolean | Specifies whether or not auditing is enabled on the SVM. |
| events | events | |
| log | log | |
| log_path | string | The audit log destination path where consolidated audit logs are stored. |
| svm | svm | |

### Example request


```
{
  "log": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "format": "string",
    "retention": {
      "duration": "P4DT12H30M5S"
    },
    "rotation": {
      "schedule": {
        "days": [
          "integer"
        ],
        "hours": [
          "integer"
        ],
        "minutes": [
          "integer"
        ],
        "months": [
          "integer"
        ],
        "weekdays": [
          "integer"
        ]
      }
    }
  },
  "log_path": "string",
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  }
}
```

### Response

```
Status: 202, Accepted
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 9699340 | SVM UUID lookup failed |
| 9699343 | Audit configuration is absent for modification |
| 9699358 | Audit configuration is absent for enabling |
| 9699359 | Audit configuration is already enabled |
| 9699360 | Final consolidation is in progress, audit enable failed |
| 9699365 | Enabling of audit configuration failed |
| 9699373 | Audit configuration is absent for disabling |
| 9699374 | Audit configuration is already disabled |
| 9699375 | Disabling of audit configuration failed |
| 9699384 | The specified log_path does not exist |
| 9699385 | The log_path must be a directory |
| 9699386 | The log_path must be a canonical path in the SVMs namespace |
| 9699387 | The log_path cannot be empty |
| 9699388 | Rotate size must be greater than or equal to 1024 KB |
| 9699389 | The log_path must not contain a symbolic link |
| 9699398 | The log_path exceeds a maximum supported length of characters |
| 9699399 | The log_path contains an unsupported read-only (DP/LS) volume |
| 9699400 | The specified log_path is not a valid destination for SVM |
| 9699402 | The log_path contains an unsupported snaplock volume |
| 9699403 | The log_path cannot be accessed for validation |
| 9699406 | The log_path validation failed |

| Error Code | Description |
| --- | --- |
| 9699407 | Additional fields are provided |
| 9699409 | Failed to enable multiproto.audit.evtxlog.support support capability |
| 9699410 | Failed to disable multiproto.audit.evtxlog.support support capability |
| 9699418 | Audit configuration is absent for rotate |
| 9699419 | Failed to rotate audit log |
| 9699420 | Cannot rotate audit log, auditing is not enabled for this SVM |
| 9699428 | All nodes need to run ONTAP 8.3.0 release to audit CIFS logon-logoff events |
| 9699429 | Failed to enable multiproto.audit.cifslogonlogoff.support support capability |
| 9699430 | Failed to disable multiproto.audit.cifslogonlogoff.support support capability |
| 9699431 | All nodes need to run ONTAP 8.3.0 release to audit CAP staging events |
| 9699432 | Failed to enable multiproto.audit.capstaging.support support capability |
| 9699433 | Failed to disable multiproto.audit.capstaging.support support capability |

| 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**

events

| Name | Type | Description |
|---|---|---|
| authorization_policy | boolean | Authorization policy change events |
| cap_staging | boolean | Central access policy staging events |
| cifs_logon_logoff | boolean | CIFS logon and logoff events |
| file_operations | boolean | File operation events |
| file_share | boolean | File share category events |
| security_group | boolean | Local security group management events |
| user_account | boolean | Local user account management events |

href

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

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

retention

| Name | Type | Description |
|---|---|---|
| count | integer | Determines how many audit log files to retain before rotating the oldest log file out. This is mutually exclusive with duration. |

| Name | Type | Description |
| --- | --- | --- |
| duration | string | Specifies an ISO-8601 format date and time to retain the audit log file. The audit log files are deleted once they reach the specified date/time. This is mutually exclusive with count. |

audit_schedule

Rotates the audit logs based on a schedule by using the time-based rotation parameters in any combination. The rotation schedule is calculated by using all the time-related values.

| Name | Type | Description |
| --- | --- | --- |
| days | array[integer] | Specifies the day of the month schedule to rotate audit log. Leave empty for all. |
| hours | array[integer] | Specifies the hourly schedule to rotate audit log. Leave empty for all. |
| minutes | array[integer] | Specifies the minutes schedule to rotate the audit log. |
| months | array[integer] | Specifies the months schedule to rotate audit log. Leave empty for all. |
| weekdays | array[integer] | Specifies the weekdays schedule to rotate audit log. Leave empty for all. |

rotation

Audit event log files are rotated when they reach a configured threshold log size or are on a configured schedule. When an event log file is rotated, the scheduled consolidation task first renames the active converted file to a time-stamped archive file, and then creates a new active converted event log file.

| Name | Type | Description |
| --- | --- | --- |
| now | boolean | Manually rotates the audit logs. Optional in PATCH only. Not available in POST. |

| Name | Type | Description |
|---|---|---|
| schedule | audit_schedule | Rotates the audit logs based on a schedule by using the time-based rotation parameters in any combination. The rotation schedule is calculated by using all the time-related values. |
| size | integer | Rotates logs based on log size in bytes. |

log

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| format | string | The format in which the logs are generated by consolidation process. Possible values are:<br>• xml - Data ONTAP-specific XML log format<br>• evtx - Microsoft Windows EVTX log format<br>◦ Default value: 1<br>◦ enum: ["xml", "evtx"] |
| retention | retention | |
| rotation | rotation | Audit event log files are rotated when they reach a configured threshold log size or are on a configured schedule. When an event log file is rotated, the scheduled consolidation task first renames the active converted file to a time-stamped archive file, and then creates a new active converted event log file. |

svm

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

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

audit

Auditing for NAS events is a security measure that enables you to track and log certain CIFS and NFS events on SVMs.

| Name | Type | Description |
|---|---|---|
| enabled | boolean | Specifies whether or not auditing is enabled on the SVM. |
| events | events | |
| log | log | |
| log_path | string | The audit log destination path where consolidated audit logs are stored. |
| svm | svm | |

error_arguments

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

error

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

# Manage home directory search paths

## Protocols CIFS home-directory search-paths endpoint overview

### Overview

ONTAP home directory functionality can be used to create home directories for SMB users on the CIFS server and automatically offer each user a dynamic share to their home directory without creating an individual SMB share for each user.

The home directory search path is a set of absolute paths from the root of an SVM that directs ONTAP to search for home directories. If there are multiple search paths, ONTAP tries them in the order specified until it finds a valid path. To use the CIFS home directories feature, at least one home directory search path must be added for an SVM.

### Examples

#### Creating a home directory search path

To create a home directory search path, use the following API. Note the *return_records=true* query parameter used to obtain the newly created entry in the response.

```
# The API:
POST /api/protocols/cifs/home-directory/search-paths

# The call:
curl -X POST "https://<mgmt-ip>/api/protocols/cifs/home-directory/search-
paths?return_records=true" -H "accept: applicaion/json" -H "Content-Type:
application/json" -d "{ \"path\": \"/\", \"svm\": { \"name\": \"vs1\",
\"uuid\": \"a41fd873-ecf8-11e8-899d-0050568e9333\" }}"

# The response:
{
"num_records": 1,
"records": [
  {
    "svm": {
      "uuid": "a41fd873-ecf8-11e8-899d-0050568e9333",
      "name": "vs1"
    },
  "path": "/"
  }
]
}
```

#### Retrieving the CIFS home directory search paths configuration for all SVMs in the cluster

```
# The API:
```

```
GET /protocols/cifs/home-directory/search-paths

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/cifs/home-directory/search-
paths?fields=*&return_records=true&return_timeout=15" -H "accept:
application/json"

# The response:
{
"records": [
  {
    "svm": {
      "uuid": "2d96f9aa-f4ce-11e8-b075-0050568e278e",
      "name": "vs1"
    },
    "index": 1,
    "path": "/"
  },
  {
    "svm": {
      "uuid": "2d96f9aa-f4ce-11e8-b075-0050568e278e",
      "name": "vs1"
    },
      "index": 2,
      "path": "/a"
  },
  {
    "svm": {
      "uuid": "4f23449b-f4ce-11e8-b075-0050568e278e",
      "name": "vs2"
    },
    "index": 1,
    "path": "/"
  },
  {
    "svm": {
      "uuid": "4f23449b-f4ce-11e8-b075-0050568e278e",
      "name": "vs2"
    },
    "index": 2,
    "path": "/1"
  }
],
"num_records": 4
}
```

#### Retrieving a specific home directory searchpath configuration for an SVM

The configuration returned is identified by the UUID of its SVM and the index (position) in the list of search paths that is searched to find a home directory of a user.

```
# The API:
GET /api/protocols/home-directory/search-paths/{svm.uuid}/{index}

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/cifs/home-directory/search-
paths/2d96f9aa-f4ce-11e8-b075-0050568e278e/2" -H "accept:
application/json"

# The response:
{
"svm": {
  "uuid": "2d96f9aa-f4ce-11e8-b075-0050568e278e",
  "name": "vs1"
},
"index": 2,
"path": "/a"
}
```

#### Reordering a specific home drectory search path in the list

An entry in the home directory search path list can be reordered to a new positin by specifying the 'new_index' field. The reordered configuration is identified by the UUID of its SVM and the index.

```
# The API:
PATCH /api/protocols/cifs/home-directory/search-paths/{svm.uuid}/{index}

# The call:
curl -X PATCH "https://<mgmt-ip>/api/protocols/cifs/home-directory/search-
paths/2d96f9aa-f4ce-11e8-b075-0050568e278e/2?new_index=1" -H "accept:
application/json"
```

#### Removing a specific home directory search path for an SVM

The entry being removed is identified by the UUID of its SVM and the index.

```
# The API:
DELETE /api/protocols/cifs/home-directory/search-paths/{svm.uuid}/{index}

# The call:
curl -X DELETE "https://<mgmt-ip>/api/protocols/cifs/home-
directory/search-paths/2d96f9aa-f4ce-11e8-b075-0050568e278e/2" -H "accept:
application/json"
```

## Retrieve CIFS home directory search paths

GET `/protocols/cifs/home-directory/search-paths`

Retrieves CIFS home directory search paths.

### Related ONTAP commands

- `cifs server home-directory search-path show`

### Learn more

- DOC /protocols/cifs/home-directory/search-paths

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| index | integer | query | False | Filter by index |
| path | string | query | False | Filter by path |
| 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. |

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

### Response

```
Status: 200, Ok
```

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

### Example response


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "index": 0,
      "path": "/HomeDirectory/EngDomain",
      "svm": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "svm1",
        "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
      }
    }
  ]
}
```


### 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 |
|---|---|---|
| next | href | |
| self | href | |

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

svm

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

cifs_search_path

This is a list of CIFS home directory search paths. When a CIFS client connects to a home directory share, these paths are searched in the order indicated by the position field to find the home directory of the connected CIFS client.

| Name | Type | Description |
|---|---|---|
| index | integer | The position in the list of paths that is searched to find the home directory of the CIFS client. Not available in POST. |
| path | string | The file system path that is searched to find the home directory of the CIFS client. |
| svm | svm | |

error_arguments

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

error

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

## Create a home directory search path

POST `/protocols/cifs/home-directory/search-paths`

Creates a home directory search path.

### Required properties

- `svm.uuid` or `svm.name` - Existing SVM in which to create the home directory search path.
- `path` - Path in the owning SVM namespace that is used to search for home directories.

### Related ONTAP commands

- `cifs server home-directory search-path add`

### Learn more

- DOC /protocols/cifs/home-directory/search-paths

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| return_records | boolean | query | False | The default is false. If set to true, the records are returned. |

### Request Body

| Name | Type | Description |
|---|---|---|
| index | integer | The position in the list of paths that is searched to find the home directory of the CIFS client. Not available in POST. |
| path | string | The file system path that is searched to find the home directory of the CIFS client. |
| svm | svm | |

### Example request

```
{
  "index": 0,
  "path": "/HomeDirectory/EngDomain",
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  }
}
```

### Response

```
Status: 201, Created
```

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

### Example response


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "index": 0,
      "path": "/HomeDirectory/EngDomain",
      "svm": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "svm1",
        "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
      }
    }
  ]
}
```


### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 655551 | Invalid home-directory search-path path |
| 655462 | The specified path is an invalid file-type |

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

### Example error


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


### Definitions

**See Definitions**

href

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

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

svm

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

cifs_search_path

This is a list of CIFS home directory search paths. When a CIFS client connects to a home directory share, these paths are searched in the order indicated by the position field to find the home directory of the connected CIFS client.

| Name | Type | Description |
|---|---|---|
| index | integer | The position in the list of paths that is searched to find the home directory of the CIFS client. Not available in POST. |
| path | string | The file system path that is searched to find the home directory of the CIFS client. |
| svm | svm | |

_links

| Name | Type | Description |
|---|---|---|
| next | href | |
| self | href | |

error_arguments

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

error

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

## Delete a CIFS home directory search path

DELETE `/protocols/cifs/home-directory/search-paths/{svm.uuid}/{index}`

Deletes a CIFS home directory search path.

### Related ONTAP commands

- `cifs server home-directory search-path remove`

### Learn more

- DOC /protocols/cifs/home-directory/search-paths

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| index | integer | path | True | Home directory search path index |

### Response

```
Status: 200, Ok
```

### 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**

error_arguments

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

error

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

## Retrieve a CIFS home directory search path for an SVM

GET `/protocols/cifs/home-directory/search-paths/{svm.uuid}/{index}`

Retrieves a CIFS home directory search path of an SVM.

### Related ONTAP commands

- `cifs server home-directory search-path show`

### Learn more

- DOC /protocols/cifs/home-directory/search-paths

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| index | integer | path | True | Home directory search path index |

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

### Response

```
Status: 200, Ok
```

| Name | Type | Description |
|---|---|---|
| index | integer | The position in the list of paths that is searched to find the home directory of the CIFS client. Not available in POST. |
| path | string | The file system path that is searched to find the home directory of the CIFS client. |
| svm | svm | |

### Example response


```
{
  "index": 0,
  "path": "/HomeDirectory/EngDomain",
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  }
}
```


### 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 | |

svm

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

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. |

## Re-order a CIFS home directory search path

PATCH `/protocols/cifs/home-directory/search-paths/{svm.uuid}/{index}`

Reorders a CIFS home directory search path.

### Related ONTAP commands

- `cifs server home-directory search-path reorder`

### Learn more

- DOC /protocols/cifs/home-directory/search-paths

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| index | integer | path | True | Home directory search path index |
| new_index | integer | query | False | New position for the home directory search path |

### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 655463 | Failed to reorder the search-path because the new-index is invalid. It cannot be '0' and it cannot go beyond the current entries |

| 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. |

# Manage CIFS services

# Protocols CIFS services endpoint overview

## Overview

A CIFS server is necessary to provide SMB clients with access to the Storage Virtual Machine (SVM). Before you begin, the following prerequisites must be in place:

- At least one SVM LIF must exist on the SVM.
- The LIFs must be able to connect to the DNS servers configured on the SVM and to an Active Directory domain controller of the domain to which you want to join the CIFS server.
- The DNS servers must contain the service location records that are needed to locate the Active Directory domain services.
- The cluster time must be synchronized to within five minutes of the Active Directory domain controller.

## 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.

### Information on the CIFS server

You must keep the following in mind when creating the CIFS server:

- The CIFS server name might or might not be the same as the SVM name.
- The CIFS server name can be up to 15 characters in length.
- The following characters are not allowed: @ # * ( ) = + [ ] \| ; : " , < > \ / ?
- You must use the FQDN when specifying the domain.
- The default is to add the CIFS server machine account to the Active Directory "CN=Computer" object.
- You can choose to add the CIFS server to a different organizational unit (OU) by specifying the "organizational_unit" parameter. When specifying the OU, do not specify the domain portion of the distinguished name; only specify the OU or CN portion of the distinguished name. ONTAP appends the value provided for the required "-domain" parameter onto the value provided for the "-ou" parameter to create the Active Directory distinguished name, which is used when joining the Active Directory domain.
- You can optionally choose to add a text comment of up to 48 characters about the CIFS server. If there is a space in the comment text, you must enclose the entire string in quotation marks.
- You can optionally choose to add a comma-delimited list of one or more NetBIOS aliases for the CIFS server.
- The initial administrative status of the CIFS server is "up".
- The large-mtu and multichannel features are enabled for the new CIFS server.
- If LDAP is configured with the *use_start_tls* and *session_security* features, the new CIFS server will also have this property set.

## Examples

#### Creating a CIFS server

To create a CIFS server, use the following API. Note the *return_records=true* query parameter used to obtain the newly created entry in the response.

```
# The API:
POST /api/protocols/cifs/services

# The call:
curl -X POST "https://<mgmt-
ip>/api/protocols/cifs/services?return_records=true" -H "accept:
application/json" -H "Content-Type: application/json" -d "{ \"ad_domain\":
{ \"fqdn\": \"CIFS-2008R2-AD.GDL.ENGLAB.NETAPP.COM\",
\"organizational_unit\": \"CN=Computers\", \"password\": \"cifs*123\",
\"user\": \"administrator\" }, \"comment\": \"This CIFS Server Belongs to
CS Department\", \"default_unix_user\": \"string\", \"enabled\": true,
\"name\": \"CIFS-DOC\", \"netbios\": { \"aliases\": [ \"ALIAS_1\",
\"ALIAS_2\", \"ALIAS_3\" ], \"enabled\": false, \"wins_servers\": [
\"10.224.65.20\", \"10.224.65.21\" ] }, \"security\": {
\"kdc_encryption\": false, \"restrict_anonymous\": \"no_enumeration\",
\"smb_encryption\": false, \"smb_signing\": false }, \"svm\": { \"name\":
\"vs1\", \"uuid\": \"ef087155-f9e2-11e8-ac52-0050568ea248\" }}"

# The response:
{
"num_records": 1,
"records": [
  {
    "svm": {
      "uuid": "9f5ab4cb-f703-11e8-91cc-0050568eca13",
      "name": "vs1"
    },
    "name": "CIFS-DOC",
    "ad_domain": {
      "fqdn": "CIFS-2008R2-AD.GDL.ENGLAB.NETAPP.COM",
      "user": "administrator",
      "password": "cifs*123",
      "organizational_unit": "CN=Computers"
    },
    "enabled": true,
    "comment": "This CIFS Server Belongs to CS Department",
    "security": {
      "restrict_anonymous": "no_enumeration",
      "smb_signing": false,
      "smb_encryption": false,
```

```
      "kdc_encryption": false
    },
    "netbios": {
      "aliases": [
        "ALIAS_1",
        "ALIAS_2",
        "ALIAS_3"
      ],
      "wins_servers": [
        "10.224.65.20",
        "10.224.65.21"
      ],
      "enabled": false
    },
    "default_unix_user": "string"
  }
],
"job": {
  "uuid": "f232b6da-00a4-11e9-a8c1-0050568eca13",
  "_links": {
    "self": {
      "href": "/api/cluster/jobs/f232b6da-00a4-11e9-a8c1-0050568eca13"
    }
  }
}
}
```

#### Retrieving the full CIFS server configuration for all SVMs in the cluster

```
# The API:
GET /api/protocols/cifs/services

# The call:
curl -X GET "https://<mgmt-
ip>/api/protocols/cifs/services?fields=*&return_records=true&return_timeou
t=15" -H "accept: application/json"

# The response:
{
"records": [
  {
    "svm": {
```

```
      "uuid": "9f5ab4cb-f703-11e8-91cc-0050568eca13",
      "name": "vs1"
    },
    "name": "CIFS-DOC",
    "ad_domain": {
      "fqdn": "CIFS-2008R2-AD.GDL.ENGLAB.NETAPP.COM",
      "organizational_unit": "CN=Computers"
    },
    "enabled": true,
    "comment": "This CIFS Server Belongs to CS Department",
    "security": {
      "restrict_anonymous": "no_enumeration",
      "smb_signing": false,
      "smb_encryption": false,
      "kdc_encryption": false
    },
    "netbios": {
      "aliases": [
        "ALIAS_1",
        "ALIAS_2",
        "ALIAS_3"
      ],
      "wins_servers": [
        "10.224.65.20",
        "10.224.65.21"
      ],
      "enabled": false
    },
    "default_unix_user": "string"
  }
],
"num_records": 1
}
```


#### Retrieving CIFS server configuration details for a specific SVM

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

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/cifs/services/9f5ab4cb-f703-
11e8-91cc-0050568eca13" -H "accept: application/json"

# The response:
{
"svm": {
  "uuid": "9f5ab4cb-f703-11e8-91cc-0050568eca13",
  "name": "vs1"
},
"name": "CIFS-DOC",
"ad_domain": {
  "fqdn": "CIFS-2008R2-AD.GDL.ENGLAB.NETAPP.COM",
  "organizational_unit": "CN=Computers"
},
"enabled": true,
"comment": "This CIFS Server Belongs to CS Department",
"security": {
  "restrict_anonymous": "no_enumeration",
  "smb_signing": false,
  "smb_encryption": false,
  "kdc_encryption": false
},
"netbios": {
  "aliases": [
    "ALIAS_1",
    "ALIAS_2",
    "ALIAS_3"
  ],
  "wins_servers": [
    "10.224.65.20",
    "10.224.65.21"
  ],
  "enabled": false
},
"default_unix_user": "string"
}
```

#### Updating CIFS server properties for the specified SVM

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

# The call:
curl -X PATCH "https://<mgmt-ip>/api/protocols/cifs/services/9f5ab4cb-
f703-11e8-91cc-0050568eca13" -H "accept: application/json" -H "Content-
Type: application/json" -d "{ \"comment\": \"CIFS SERVER MODIFICATION\" }"
```

#### Removing a CIFS server for a specific SVM

To delete a CIFS server, use the following API. This will delete the CIFS server along with other CIFS configurations such as CIFS share, share ACLs, homedir search-path, and so on.

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

# The call:
curl -X DELETE "https://<mgmt-ip>/api/protocols/cifs/services/9f5ab4cb-
f703-11e8-91cc-0050568eca13" -H "accept: application/json" -H "Content-
Type: application/json" -d "{\"ad_domain\": { \"password\": \"cifs*123\",
\"user\": \"administrator\" } }"
```

## Retrieve CIFS servers

GET `/protocols/cifs/services`

Retrieves CIFS servers.

### Expensive properties

There is an added 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 DOC Requesting specific fields to learn more.

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

### Related ONTAP commands

- `vserver cifs server show`
- `vserver cifs server options show`
- `vserver cifs server security show`

### Learn more

- DOC /protocols/cifs/services

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | query | False | Filter by svm.uuid |
| svm.name | string | query | False | Filter by svm.name |
| default_unix_user | string | query | False | Filter by default_unix_user |
| enabled | boolean | query | False | Filter by enabled |
| name | string | query | False | Filter by name |
| security.kdc_encryption | boolean | query | False | Filter by security.kdc_encryption |
| security.restrict_anonymous | string | query | False | Filter by security.restrict_anonymous |
| security.smb_encryption | boolean | query | False | Filter by security.smb_encryption |
| security.smb_signing | boolean | query | False | Filter by security.smb_signing |
| netbios.wins_servers | string | query | False | Filter by netbios.wins_servers |
| netbios.enabled | boolean | query | False | Filter by netbios.enabled |

| Name | Type | In | Required | Description |
| --- | --- | --- | --- | --- |
| netbios.aliases | string | query | False | Filter by netbios.aliases |
| metric.duration | string | query | False | Filter by metric.duration |
| metric.latency.other | integer | query | False | Filter by metric.latency.other |
| metric.latency.write | integer | query | False | Filter by metric.latency.write |
| metric.latency.read | integer | query | False | Filter by metric.latency.read |
| metric.latency.total | integer | query | False | Filter by metric.latency.total |
| metric.throughput.read | integer | query | False | Filter by metric.throughput.read |
| metric.throughput.write | integer | query | False | Filter by metric.throughput.write |
| metric.throughput.total | integer | query | False | Filter by metric.throughput.total |
| metric.timestamp | string | query | False | Filter by metric.timestamp |
| metric.iops.other | integer | query | False | Filter by metric.iops.other |
| metric.iops.write | integer | query | False | Filter by metric.iops.write |
| metric.iops.read | integer | query | False | Filter by metric.iops.read |
| metric.iops.total | integer | query | False | Filter by metric.iops.total |

| Name | Type | In | Required | Description |
| --- | --- | --- | --- | --- |
| metric.status | string | query | False | Filter by metric.status |
| statistics.status | string | query | False | Filter by statistics.status |
| statistics.latency_raw.other | integer | query | False | Filter by statistics.latency_raw.other |
| statistics.latency_raw.write | integer | query | False | Filter by statistics.latency_raw.write |
| statistics.latency_raw.read | integer | query | False | Filter by statistics.latency_raw.read |
| statistics.latency_raw.total | integer | query | False | Filter by statistics.latency_raw.total |
| statistics.timestamp | string | query | False | Filter by statistics.timestamp |
| statistics.throughput_raw.read | integer | query | False | Filter by statistics.throughput_raw.read |
| statistics.throughput_raw.write | integer | query | False | Filter by statistics.throughput_raw.write |
| statistics.throughput_raw.total | integer | query | False | Filter by statistics.throughput_raw.total |
| statistics.iops_raw.other | integer | query | False | Filter by statistics.iops_raw.other |
| statistics.iops_raw.write | integer | query | False | Filter by statistics.iops_raw.write |

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| statistics.iops_raw.read | integer | query | False | Filter by statistics.iops_raw.read |
| statistics.iops_raw.total | integer | query | False | Filter by statistics.iops_raw.total |
| ad_domain.fqdn | string | query | False | Filter by ad_domain.fqdn |
| ad_domain.organizational_unit | string | query | False | Filter by ad_domain.organizational_unit |
| ad_domain.user | string | query | False | Filter by ad_domain.user |
| comment | string | query | False | Filter by comment |
| 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. |
| 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. |

| 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 | _links | |
| num_records | integer | Number of records |
| records | array[cifs_service] | |

**Example response**


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "ad_domain": {
        "fqdn": "example.com",
        "organizational_unit": "string",
        "user": "string"
      },
      "comment": "This CIFS Server Belongs to CS Department",
      "default_unix_user": "string",
      "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 UTC"
    },
    "name": "CIFS1",
    "netbios": {
      "aliases": [
        "ALIAS_1",
        "ALIAS_2",
        "ALIAS_3"
      ],
      "wins_servers": [
        "10.224.65.20",
        "10.224.65.21"
      ]
    },
    "security": {
      "restrict_anonymous": "string"
    },
    "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 UTC"
    },
    "svm": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "svm1",
      "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
```

```
        }
      }
    ]
  }
```

### 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 |
|---|---|---|
| next | href | |
| self | href | |

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

ad_domain

| Name | Type | Description |
|---|---|---|
| fqdn | string | The fully qualified domain name of the Windows Active Directory to which this CIFS server belongs. A CIFS server appears as a member of Windows server object in the Active Directory store. POST and PATCH only. |
| organizational_unit | string | Specifies the organizational unit within the Active Directory domain to associate with the CIFS server. POST and PATCH only. |
| user | string | The user account used to add this CIFS server to the Active Directory. POST and DELETE only. |

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 | Peformance 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 | Peformance 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. |

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

metric

| 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. |

| Name | Type | Description |
| --- | --- | --- |
| throughput | throughput | The rate of throughput bytes per second observed at the storage object. |
| timestamp | string | The timestamp of the performance data. |

cifs_netbios

| Name | Type | Description |
| --- | --- | --- |
| aliases | array[string] | |
| enabled | boolean | Specifies whether NetBios name service (NBNS) is enabled for the CIFS. If this service is enabled, the CIFS server will start sending the broadcast for name registration. |
| wins_servers | array[string] | |

cifs_service_security

| Name | Type | Description |
| --- | --- | --- |
| kdc_encryption | boolean | Specifies whether AES-128 and AES-256 encryption is enabled for all Kerberos-based communication with the Active Directory KDC. To take advantage of the strongest security with Kerberos-based communication, AES-256 and AES-128 encryption can be enabled on the CIFS server. Kerberos-related communication for CIFS is used during CIFS server creation on the SVM, as well as during the SMB session setup phase. The CIFS server supports the following encryption types for Kerberos communication:<br>• RC4-HMAC<br>• DES<br>• AES When the CIFS server is created, the domain controller creates a computer machine account in Active Directory. After a newly created machine account authenticates, the KDC and the CIFS server negotiates encryption types. At this time, the KDC becomes aware of the encryption capabilities of the particular machine account and uses those capabilities in subsequent communication with the CIFS server. In addition to negotiating encryption types during CIFS server creation, the encryption types are renegotiated when a machine account password is reset. |

| Name | Type | Description |
| --- | --- | --- |
| restrict_anonymous | string | Specifies what level of access an anonymous user is granted. An anonymous user (also known as a "null user") can list or enumerate certain types of system information from Windows hosts on the network, including user names and details, account policies, and share names. Access for the anonymous user can be controlled by specifying one of three access restriction settings. The available values are:<br>• no_restriction - No access restriction for an anonymous user.<br>• no_enumeration - Enumeration is restricted for an anonymous user.<br>• no_access - All access is restricted for an anonymous user. |
| smb_encryption | boolean | Specifies whether encryption is required for incoming CIFS traffic. |
| smb_signing | boolean | Specifies whether signing is required for incoming CIFS traffic. SMB signing helps to ensure that network traffic between the CIFS server and the client is not compromised. |

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 | Peformance 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 | Peformance 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 | Peformance metric for write I/O operations. |

statistics

| 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

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

cifs_service

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| ad_domain | ad_domain | |
| comment | string | A descriptive text comment for the CIFS server. SMB clients can see the CIFS server comment when browsing servers on the network. If there is a space in the comment, you must enclose the entire string in quotation marks. |
| default_unix_user | string | Specifies the UNIX user to which any authenticated CIFS user is mapped to, if the normal user mapping rules fails. |
| enabled | boolean | Specifies if the CIFS service is administratively enabled. |
| metric | metric | |
| name | string | The name of the CIFS server. |
| netbios | cifs_netbios | |
| security | cifs_service_security | |
| statistics | statistics | |
| svm | svm | |

error_arguments

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

error

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

## Create a CIFS server

POST `/protocols/cifs/services`

Creates a CIFS server. Each SVM can have one CIFS server.

### Important notes

- The CIFS server name might or might not be the same as the SVM name.
- The CIFS server name can contain up to 15 characters.
- The CIFS server name does not support the following characters: @ # * ( ) = + [ ] \| ; : " , < > / ?

### Required properties

- `svm.uuid` or `svm.name` - Existing SVM in which to create the CIFS server.
- `name` - Name of the CIFS server.
- `ad_domain.fqdn` - Fully qualified domain name of the Windows Active Directory to which this CIFS server belongs.
- `ad_domain.user` - User account with the access to add the CIFS server to the Active Directory.
- `ad_domain.password` - Account password used to add this CIFS server to the Active Directory.

### Recommended optional properties

- `comment` - Add a text comment of up to 48 characters about the CIFS server.
- `netbios.aliases` - Add a comma-delimited list of one or more NetBIOS aliases for the CIFS server.
- `netbios.wins_servers` - Add a list of Windows Internet Name Server (WINS) addresses that manage and map the NetBIOS name of the CIFS server to their network IP addresses. The IP addresses must be IPv4 addresses.

### Default property values

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

- `ad_domain.organizational_unit` - *CN=Computers*
- `enabled` - *true*
- `restrict_anonymous` - *no_enumeration*
- `smb_signing` - *false*
- `smb_encryption` - *false*
- `kdc_encryption` - *false*
- `default_unix_user` - *pcuser*
- `netbios_enabled` - *false* However, if either "netbios.wins-server" or "netbios.aliases" is set during POST and if `netbios_enabled` is not specified then `netbios_enabled` is set to true.

### Related ONTAP commands

- `vserver cifs server create`
- `vserver cifs server options modify`
- `vserver cifs security modify`
- `vserver cifs server add-netbios-aliases`

### Learn more

- DOC /protocols/cifs/services

### Parameters

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

**Request Body**

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| ad_domain | ad_domain | |
| comment | string | A descriptive text comment for the CIFS server. SMB clients can see the CIFS server comment when browsing servers on the network. If there is a space in the comment, you must enclose the entire string in quotation marks. |

| Name | Type | Description |
| --- | --- | --- |
| default_unix_user | string | Specifies the UNIX user to which any authenticated CIFS user is mapped to, if the normal user mapping rules fails. |
| enabled | boolean | Specifies if the CIFS service is administratively enabled. |
| metric | metric | |
| name | string | The name of the CIFS server. |
| netbios | cifs_netbios | |
| security | cifs_service_security | |
| statistics | statistics | |
| svm | svm | |

**Example request**


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "ad_domain": {
    "fqdn": "example.com",
    "organizational_unit": "string",
    "password": "string",
    "user": "string"
  },
  "comment": "This CIFS Server Belongs to CS Department",
  "default_unix_user": "string",
  "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 UTC"
  },
  "name": "CIFS1",
  "netbios": {
    "aliases": [
      "ALIAS_1",
      "ALIAS_2",
```

```
      "ALIAS_3"
    ],
    "wins_servers": [
      "10.224.65.20",
      "10.224.65.21"
    ]
  },
  "security": {
    "restrict_anonymous": "string"
  },
  "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 UTC"
  },
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  }
}
```


**Response**

```
Status: 202, Accepted
```

| Name | Type | Description |
| --- | --- | --- |
| job | job_link | |

**Example response**


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


**Error**

```
Status: Default, Error
```

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

**Example error**


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

## Definitions

**See Definitions**

href

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

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

ad_domain

| Name | Type | Description |
|---|---|---|
| fqdn | string | The fully qualified domain name of the Windows Active Directory to which this CIFS server belongs. A CIFS server appears as a member of Windows server object in the Active Directory store. POST and PATCH only. |
| organizational_unit | string | Specifies the organizational unit within the Active Directory domain to associate with the CIFS server. POST and PATCH only. |
| password | string | The account password used to add this CIFS server to the Active Directory. This is not audited. |
| user | string | The user account used to add this CIFS server to the Active Directory. POST and DELETE only. |

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 | Peformance 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 | Peformance 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. |

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

metric

| 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. |

| Name | Type | Description |
| --- | --- | --- |
| throughput | throughput | The rate of throughput bytes per second observed at the storage object. |
| timestamp | string | The timestamp of the performance data. |

cifs_netbios

| Name | Type | Description |
| --- | --- | --- |
| aliases | array[string] | |
| enabled | boolean | Specifies whether NetBios name service (NBNS) is enabled for the CIFS. If this service is enabled, the CIFS server will start sending the broadcast for name registration. |
| wins_servers | array[string] | |

cifs_service_security

| Name | Type | Description |
| --- | --- | --- |
| kdc_encryption | boolean | Specifies whether AES-128 and AES-256 encryption is enabled for all Kerberos-based communication with the Active Directory KDC. To take advantage of the strongest security with Kerberos-based communication, AES-256 and AES-128 encryption can be enabled on the CIFS server. Kerberos-related communication for CIFS is used during CIFS server creation on the SVM, as well as during the SMB session setup phase. The CIFS server supports the following encryption types for Kerberos communication:<br>• RC4-HMAC<br>• DES<br>• AES When the CIFS server is created, the domain controller creates a computer machine account in Active Directory. After a newly created machine account authenticates, the KDC and the CIFS server negotiates encryption types. At this time, the KDC becomes aware of the encryption capabilities of the particular machine account and uses those capabilities in subsequent communication with the CIFS server. In addition to negotiating encryption types during CIFS server creation, the encryption types are renegotiated when a machine account password is reset. |

| Name | Type | Description |
| --- | --- | --- |
| restrict_anonymous | string | Specifies what level of access an anonymous user is granted. An anonymous user (also known as a "null user") can list or enumerate certain types of system information from Windows hosts on the network, including user names and details, account policies, and share names. Access for the anonymous user can be controlled by specifying one of three access restriction settings. The available values are:<br>• no_restriction - No access restriction for an anonymous user.<br>• no_enumeration - Enumeration is restricted for an anonymous user.<br>• no_access - All access is restricted for an anonymous user. |
| smb_encryption | boolean | Specifies whether encryption is required for incoming CIFS traffic. |
| smb_signing | boolean | Specifies whether signing is required for incoming CIFS traffic. SMB signing helps to ensure that network traffic between the CIFS server and the client is not compromised. |

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 | Peformance 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 | Peformance 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 | Peformance metric for write I/O operations. |

statistics

| 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

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

cifs_service

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| ad_domain | ad_domain | |
| comment | string | A descriptive text comment for the CIFS server. SMB clients can see the CIFS server comment when browsing servers on the network. If there is a space in the comment, you must enclose the entire string in quotation marks. |
| default_unix_user | string | Specifies the UNIX user to which any authenticated CIFS user is mapped to, if the normal user mapping rules fails. |
| enabled | boolean | Specifies if the CIFS service is administratively enabled. |
| metric | metric | |
| name | string | The name of the CIFS server. |
| netbios | cifs_netbios | |
| security | cifs_service_security | |
| statistics | statistics | |
| svm | svm | |

job_link

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

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

error_arguments

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

error

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

## Delete a CIFS server and related configurations

DELETE `/protocols/cifs/services/{svm.uuid}`

Deletes a CIFS server and related CIFS configurations.

### Related ONTAP commands

- `vserver cifs server delete`
- `vserver cifs remove-netbios-aliases`

### Learn more

- DOC /protocols/cifs/services

### Parameters

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

**Request Body**

| Name | Type | Description |
|---|---|---|
| ad_domain | ad_domain | |

### Example request

```
{
  "ad_domain": {
    "fqdn": "example.com",
    "organizational_unit": "string",
    "password": "string",
    "user": "string"
  }
}
```

### Response

```
Status: 202, Accepted
```

| Name | Type | Description |
|---|---|---|
| job | job_link | |

### Example response

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

### Error

```
Status: Default, Error
```

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

### Example error


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


### Definitions

**See Definitions**

ad_domain

| Name | Type | Description |
|---|---|---|
| fqdn | string | The fully qualified domain name of the Windows Active Directory to which this CIFS server belongs. A CIFS server appears as a member of Windows server object in the Active Directory store. POST and PATCH only. |
| organizational_unit | string | Specifies the organizational unit within the Active Directory domain to associate with the CIFS server. POST and PATCH only. |
| password | string | The account password used to add this CIFS server to the Active Directory. This is not audited. |
| user | string | The user account used to add this CIFS server to the Active Directory. POST and DELETE only. |

cifs_service_delete

| Name | Type | Description |
|---|---|---|
| ad_domain | ad_domain | |

href

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

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

job_link

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

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

error_arguments

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

error

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

## Retrieve a CIFS server

GET `/protocols/cifs/services/{svm.uuid}`

Retrieves a CIFS server.

### Related ONTAP commands

- `vserver cifs server show`
- `vserver cifs server options show`
- `vserver cifs server security show`

### Learn more

- DOC /protocols/cifs/services

### Parameters

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

### Response

```
Status: 200, Ok
```

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| ad_domain | ad_domain | |
| comment | string | A descriptive text comment for the CIFS server. SMB clients can see the CIFS server comment when browsing servers on the network. If there is a space in the comment, you must enclose the entire string in quotation marks. |
| default_unix_user | string | Specifies the UNIX user to which any authenticated CIFS user is mapped to, if the normal user mapping rules fails. |
| enabled | boolean | Specifies if the CIFS service is administratively enabled. |
| metric | metric | |
| name | string | The name of the CIFS server. |
| netbios | cifs_netbios | |
| security | cifs_service_security | |
| statistics | statistics | |
| svm | svm | |

**Example response**


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "ad_domain": {
    "fqdn": "example.com",
    "organizational_unit": "string",
    "user": "string"
  },
  "comment": "This CIFS Server Belongs to CS Department",
  "default_unix_user": "string",
  "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 UTC"
  },
  "name": "CIFS1",
  "netbios": {
    "aliases": [
      "ALIAS_1",
      "ALIAS_2",
      "ALIAS_3"
```

```
      ],
      "wins_servers": [
        "10.224.65.20",
        "10.224.65.21"
      ]
    },
    "security": {
      "restrict_anonymous": "string"
    },
    "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 UTC"
    },
    "svm": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "svm1",
      "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
    }
  }
```


**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 | |

ad_domain

| Name | Type | Description |
|---|---|---|
| fqdn | string | The fully qualified domain name of the Windows Active Directory to which this CIFS server belongs. A CIFS server appears as a member of Windows server object in the Active Directory store. POST and PATCH only. |
| organizational_unit | string | Specifies the organizational unit within the Active Directory domain to associate with the CIFS server. POST and PATCH only. |
| user | string | The user account used to add this CIFS server to the Active Directory. POST and DELETE only. |

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. |

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

metric

| 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. |
| throughput | throughput | The rate of throughput bytes per second observed at the storage object. |
| timestamp | string | The timestamp of the performance data. |

cifs_netbios

| Name | Type | Description |
| --- | --- | --- |
| aliases | array[string] | |
| enabled | boolean | Specifies whether NetBios name service (NBNS) is enabled for the CIFS. If this service is enabled, the CIFS server will start sending the broadcast for name registration. |
| wins_servers | array[string] | |

cifs_service_security

| Name | Type | Description |
| --- | --- | --- |
| kdc_encryption | boolean | Specifies whether AES-128 and AES-256 encryption is enabled for all Kerberos-based communication with the Active Directory KDC. To take advantage of the strongest security with Kerberos-based communication, AES-256 and AES-128 encryption can be enabled on the CIFS server. Kerberos-related communication for CIFS is used during CIFS server creation on the SVM, as well as during the SMB session setup phase. The CIFS server supports the following encryption types for Kerberos communication:<br>• RC4-HMAC<br>• DES<br>• AES When the CIFS server is created, the domain controller creates a computer machine account in Active Directory. After a newly created machine account authenticates, the KDC and the CIFS server negotiates encryption types. At this time, the KDC becomes aware of the encryption capabilities of the particular machine account and uses those capabilities in subsequent communication with the CIFS server. In addition to negotiating encryption types during CIFS server creation, the encryption types are renegotiated when a machine account password is reset. |

| Name | Type | Description |
| --- | --- | --- |
| restrict_anonymous | string | Specifies what level of access an anonymous user is granted. An anonymous user (also known as a "null user") can list or enumerate certain types of system information from Windows hosts on the network, including user names and details, account policies, and share names. Access for the anonymous user can be controlled by specifying one of three access restriction settings. The available values are:<br>• no_restriction - No access restriction for an anonymous user.<br>• no_enumeration - Enumeration is restricted for an anonymous user.<br>• no_access - All access is restricted for an anonymous user. |
| smb_encryption | boolean | Specifies whether encryption is required for incoming CIFS traffic. |
| smb_signing | boolean | Specifies whether signing is required for incoming CIFS traffic. SMB signing helps to ensure that network traffic between the CIFS server and the client is not compromised. |

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 | Peformance 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 | Peformance 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 | Peformance metric for write I/O operations. |

statistics

| 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

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

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 CIFS mandatory and optional parameters

PATCH `/protocols/cifs/services/{svm.uuid}`

Updates both the mandatory and optional parameters of the CIFS configuration. Ensure the CIFS server is administratively disabled when renaming the CIFS server or modifying the *ad_domain* properties.

### Related ONTAP commands

- `vserver cifs server modify`
- `vserver cifs server options modify`
- `vserver cifs security modify`
- `vserver cifs server add-netbios-aliases`
- `vserver cifs server remove-netbios-aliases`

### Learn more

- DOC /protocols/cifs/services

### Parameters

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

### Request Body

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

| Name | Type | Description |
| --- | --- | --- |
| comment | string | A descriptive text comment for the CIFS server. SMB clients can see the CIFS server comment when browsing servers on the network. If there is a space in the comment, you must enclose the entire string in quotation marks. |
| default_unix_user | string | Specifies the UNIX user to which any authenticated CIFS user is mapped to, if the normal user mapping rules fails. |
| enabled | boolean | Specifies if the CIFS service is administratively enabled. |
| metric | metric | |
| name | string | The name of the CIFS server. |
| netbios | cifs_netbios | |
| security | cifs_service_security | |
| statistics | statistics | |
| svm | svm | |

**Example request**


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "ad_domain": {
    "fqdn": "example.com",
    "organizational_unit": "string",
    "password": "string"
  },
  "comment": "This CIFS Server Belongs to CS Department",
  "default_unix_user": "string",
  "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 UTC"
  },
  "name": "CIFS1",
  "netbios": {
    "aliases": [
      "ALIAS_1",
      "ALIAS_2",
      "ALIAS_3"
```

```
    ],
    "wins_servers": [
      "10.224.65.20",
      "10.224.65.21"
    ]
  },
  "security": {
    "restrict_anonymous": "string"
  },
  "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 UTC"
  },
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  }
}
```

**Response**

```
Status: 202, Accepted
```

| Name | Type | Description |
| --- | --- | --- |
| job | job_link | |

**Example response**

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

**Error**

```
Status: Default, Error
```

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

**Example error**

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

## Definitions

**See Definitions**

href

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

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

ad_domain

| Name | Type | Description |
|---|---|---|
| fqdn | string | The fully qualified domain name of the Windows Active Directory to which this CIFS server belongs. A CIFS server appears as a member of Windows server object in the Active Directory store. POST and PATCH only. |
| organizational_unit | string | Specifies the organizational unit within the Active Directory domain to associate with the CIFS server. POST and PATCH only. |
| password | string | The account password used to add this CIFS server to the Active Directory. This is not audited. |

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. |

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

metric

| 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. |
| throughput | throughput | The rate of throughput bytes per second observed at the storage object. |
| timestamp | string | The timestamp of the performance data. |

cifs_netbios

| Name | Type | Description |
| --- | --- | --- |
| aliases | array[string] | |
| enabled | boolean | Specifies whether NetBios name service (NBNS) is enabled for the CIFS. If this service is enabled, the CIFS server will start sending the broadcast for name registration. |
| wins_servers | array[string] | |

cifs_service_security

| Name | Type | Description |
| --- | --- | --- |
| kdc_encryption | boolean | Specifies whether AES-128 and AES-256 encryption is enabled for all Kerberos-based communication with the Active Directory KDC. To take advantage of the strongest security with Kerberos-based communication, AES-256 and AES-128 encryption can be enabled on the CIFS server. Kerberos-related communication for CIFS is used during CIFS server creation on the SVM, as well as during the SMB session setup phase. The CIFS server supports the following encryption types for Kerberos communication:<br>• RC4-HMAC<br>• DES<br>• AES When the CIFS server is created, the domain controller creates a computer machine account in Active Directory. After a newly created machine account authenticates, the KDC and the CIFS server negotiates encryption types. At this time, the KDC becomes aware of the encryption capabilities of the particular machine account and uses those capabilities in subsequent communication with the CIFS server. In addition to negotiating encryption types during CIFS server creation, the encryption types are renegotiated when a machine account password is reset. |

| Name | Type | Description |
| --- | --- | --- |
| restrict_anonymous | string | Specifies what level of access an anonymous user is granted. An anonymous user (also known as a "null user") can list or enumerate certain types of system information from Windows hosts on the network, including user names and details, account policies, and share names. Access for the anonymous user can be controlled by specifying one of three access restriction settings. The available values are:<br>• no_restriction - No access restriction for an anonymous user.<br>• no_enumeration - Enumeration is restricted for an anonymous user.<br>• no_access - All access is restricted for an anonymous user. |
| smb_encryption | boolean | Specifies whether encryption is required for incoming CIFS traffic. |
| smb_signing | boolean | Specifies whether signing is required for incoming CIFS traffic. SMB signing helps to ensure that network traffic between the CIFS server and the client is not compromised. |

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 | Peformance 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 | Peformance 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 | Peformance metric for write I/O operations. |

statistics

| 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

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

cifs_service

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| ad_domain | ad_domain | |
| comment | string | A descriptive text comment for the CIFS server. SMB clients can see the CIFS server comment when browsing servers on the network. If there is a space in the comment, you must enclose the entire string in quotation marks. |
| default_unix_user | string | Specifies the UNIX user to which any authenticated CIFS user is mapped to, if the normal user mapping rules fails. |
| enabled | boolean | Specifies if the CIFS service is administratively enabled. |
| metric | metric | |
| name | string | The name of the CIFS server. |
| netbios | cifs_netbios | |
| security | cifs_service_security | |
| statistics | statistics | |
| svm | svm | |

job_link

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

| Name | Type | Description |
|---|---|---|
| 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 CIFS protocol historical performance metrics for an SVM

GET `/protocols/cifs/services/{svm.uuid}/metrics`

Retrieves historical performance metrics for the CIFS protocol of an SVM.

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| status | string | query | False | Filter by status |
| timestamp | string | query | False | Filter by timestamp |
| iops.other | integer | query | False | Filter by iops.other |
| iops.write | integer | query | False | Filter by iops.write |
| iops.read | integer | query | False | Filter by iops.read |

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| iops.total | integer | query | False | Filter by iops.total |
| throughput.other | integer | query | False | Filter by throughput.other |
| 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 |
| latency.other | integer | query | False | Filter by latency.other |
| latency.write | integer | query | False | Filter by latency.write |
| latency.read | integer | query | False | Filter by latency.read |
| latency.total | integer | query | False | Filter by latency.total |
| duration | string | query | False | Filter by duration |
| 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.<br>• Default value: 1 |
| 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 |
|---|---|---|---|---|
| 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 |
| The default is true for GET calls. When set to false, only the number of records is returned.<br>• Default value: 1 | svm.uuid | string | path | True |
| Unique identifier of the SVM. | interval | string | 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"
    }
  },
  "records": [
    {
      "_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 UTC"
    }
  ]
}
```


### 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 |
|---|---|---|
| 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 | Peformance 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 | Peformance metric for write I/O operations. |

throughput

The rate of throughput bytes per second 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 | Peformance metric for write I/O operations. |

records

Performance numbers, such as IOPS latency and throughput.

| 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 | Errors associated with the sample. For example, if the aggregation of data over multiple nodes fails, then any partial errors might return "ok" on success or "error" on an 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. |

error_arguments

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

error

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

# Manage CIFS shares

## Protocols CIFS shares endpoint overview

### Overview

Before any users or applications can access data on the CIFS server over SMB, a CIFS share must be created with sufficient share permissions. CIFS share is a named access point in a volume which is tied to the CIFS server on the SVM. Before creating a CIFS share make sure that the path is valid within the scope of the SVM and that it is reachable.

Permissions can be assigned to this newly created share by specifying the 'acls' field. When a CIFS share is created, ONTAP creates a default ACL for this share with 'Full-Control' permissions for an 'Everyone' user.

### Examples

#### Creating a CIFS share

To create a CIFS share for a CIFS server, use the following API. Note the *return_records=true* query parameter used to obtain the newly created entry in the response.

```
# The API:
POST /api/protocols/cifs/shares

# The call:
curl -X POST "https://<mgmt-
ip>/api/protocols/cifs/shares?return_records=true" -H "accept:
application/json" -H "Content-Type: application/json" -d "{
\"access_based_enumeration\": false, \"acls\": [ { \"permission\":
\"no_access\", \"type\": \"unix_user\", \"user_or_group\": \"root\" } ],
\"change_notify\": true, \"comment\": \"HR Department Share\",
\"encryption\": false, \"home_directory\": false, \"name\": \"TEST\",
\"oplocks\": true, \"path\": \"/\", \"svm\": { \"name\": \"vs1\",
\"uuid\": \"000c5cd2-ebdf-11e8-a96e-0050568ea3cb\" }, \"unix_symlink\":
\"local\"}"

# The response:
{
"num_records": 1,
"records": [
  {
    "svm": {
      "uuid": "000c5cd2-ebdf-11e8-a96e-0050568ea3cb",
      "name": "vs1"
    },
    "name": "TEST",
    "path": "/",
    "comment": "HR Department Share",
    "home_directory": false,
    "oplocks": true,
    "access_based_enumeration": false,
    "change_notify": true,
    "encryption": false,
    "unix_symlink": "local",
    "acls": [
      {
        "user_or_group": "root",
        "type": "unix_user",
        "permission": "no_access",
        "winsid_unixId": "0"
      }
    ]
  }
]
}
```

```
# The API:
GET /api/protocols/cifs/shares

# The call:
curl -X GET "https://<mgmt-
ip>/api/protocols/cifs/shares?fields=*&return_records=true&return_timeout=
15" -H "accept application/hal+json"

# The response:
{
"records": [
  {
    "svm": {
      "uuid": "000c5cd2-ebdf-11e8-a96e-0050568ea3cb",
      "name": "vs1",
      "_links": {
        "self": {
          "href": "/api/svm/svms/000c5cd2-ebdf-11e8-a96e-0050568ea3cb"
        }
      }
    },
    "name": "admin$",
    "path": "/",
    "home_directory": false,
    "oplocks": false,
    "access_based_enumeration": false,
    "change_notify": false,
    "encryption": false,
    "volume": {
      "name": "vol1",
      "uuid": "4e06f1bc-1ddc-42e2-abb2-f221c6a2ab2a"
    },
    "_links": {
      "self": {
        "href": "/api/protocols/cifs/shares/000c5cd2-ebdf-11e8-a96e-
0050568ea3cb/admin%24"
      }
    }
  },
  {
    "svm": {
      "uuid": "000c5cd2-ebdf-11e8-a96e-0050568ea3cb",
      "name": "vs1",
```

```
      "_links": {
        "self": {
          "href": "/api/svm/svms/000c5cd2-ebdf-11e8-a96e-0050568ea3cb"
        }
      }
    },
    "name": "c$",
    "path": "/",
    "home_directory": false,
    "oplocks": true,
    "access_based_enumeration": false,
    "change_notify": true,
    "encryption": false,
    "unix_symlink": "local",
    "acls": [
      {
        "user_or_group": "BUILTIN\\Administrators",
        "type": "windows",
        "permission": "full_control"
      }
    ],
    "volume": {
      "name": "vol1",
      "uuid": "4e06f1bc-1ddc-42e2-abb2-f221c6a2ab2a"
    },
    "_links": {
      "self": {
        "href": "/api/protocols/cifs/shares/000c5cd2-ebdf-11e8-a96e-
0050568ea3cb/c%24"
      }
    }
  },
  {
    "svm": {
      "uuid": "000c5cd2-ebdf-11e8-a96e-0050568ea3cb",
      "name": "vs1",
      "_links": {
        "self": {
          "href": "/api/svm/svms/000c5cd2-ebdf-11e8-a96e-0050568ea3cb"
        }
      }
    },
    "name": "ipc$",
    "path": "/",
    "home_directory": false,
    "oplocks": false,
```

```
    "access_based_enumeration": false,
    "change_notify": false,
    "encryption": false,
    "volume": {
      "name": "vol1",
      "uuid": "4e06f1bc-1ddc-42e2-abb2-f221c6a2ab2a"
    },
    "_links": {
      "self": {
        "href": "/api/protocols/cifs/shares/000c5cd2-ebdf-11e8-a96e-
0050568ea3cb/ipc%24"
      }
    }
  },
  {
    "svm": {
      "uuid": "000c5cd2-ebdf-11e8-a96e-0050568ea3cb",
      "name": "vs1",
      "_links": {
        "self": {
          "href": "/api/svm/svms/000c5cd2-ebdf-11e8-a96e-0050568ea3cb"
        }
      }
    },
    "name": "TEST",
    "path": "/",
    "comment": "HR Department Share",
    "home_directory": false,
    "oplocks": true,
    "access_based_enumeration": false,
    "change_notify": true,
    "encryption": false,
    "unix_symlink": "local",
    "acls": [
      {
        "user_or_group": "Everyone",
        "type": "windows",
        "permission": "full_control"
      },
      {
        "user_or_group": "root",
        "type": "unix_user",
        "permission": "no_access"
      }
    ],
    "volume": {
```

```
      "name": "vol1",
      "uuid": "4e06f1bc-1ddc-42e2-abb2-f221c6a2ab2a"
    },
    "_links": {
      "self": {
        "href": "/api/protocols/cifs/shares/000c5cd2-ebdf-11e8-a96e-
0050568ea3cb/TEST"
      }
    }
  }
],
"num_records": 4,
"_links": {
  "self": {
    "href":
"/api/protocols/cifs/shares?fields=*&return_records=true&return_timeout=15
"
  }
}
}
```

**Retrieving all CIFS Shares for all SVMs in the cluster for which the acls are configured for a "root" user**

```
# The API:
GET /api/protocols/cifs/shares

# The call:
curl -X GET "https://<mgmt-
ip>/api/protocols/cifs/shares?acls.user_or_group=root&fields=*&return_reco
rds=true&return_timeout=15" -H "accept: application/json"

# The response:
{
"records": [
  {
    "svm": {
      "uuid": "000c5cd2-ebdf-11e8-a96e-0050568ea3cb",
      "name": "vs1"
    },
    "name": "TEST",
    "path": "/",
    "comment": "HR Department Share",
    "home_directory": false,
    "oplocks": true,
    "access_based_enumeration": false,
    "change_notify": true,
    "encryption": false,
    "unix_symlink": "local",
    "acls": [
      {
        "user_or_group": "Everyone",
        "type": "windows",
        "permission": "full_control"
      },
      {
        "user_or_group": "root",
        "type": "unix_user",
        "permission": "no_access"
      }
    ],
    "volume": {
      "name": "vol1",
      "uuid": "4e06f1bc-1ddc-42e2-abb2-f221c6a2ab2a"
    }
  }
],
"num_records": 1
}
```

#### Retrieving a specific CIFS share configuration for an SVM

The configuration being returned is identified by the UUID of its SVM and the name of the share.

```
# The API:
GET /api/protocols/cifs/shares/{svm.uuid}/{name}

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/cifs/shares/000c5cd2-ebdf-
11e8-a96e-0050568ea3cb/TEST" -H "accept: application/json"

# The response:
{
"svm": {
  "uuid": "000c5cd2-ebdf-11e8-a96e-0050568ea3cb",
  "name": "vs1"
},
"name": "TEST",
"path": "/",
"comment": "HR Department Share",
"home_directory": false,
"oplocks": true,
"access_based_enumeration": false,
"change_notify": true,
"encryption": false,
"unix_symlink": "local",
"acls": [
  {
    "user_or_group": "Everyone",
    "type": "windows",
    "permission": "full_control"
  },
  {
    "user_or_group": "root",
    "type": "unix_user",
    "permission": "no_access"
  }
],
"volume": {
  "name": "vol1",
  "uuid": "4e06f1bc-1ddc-42e2-abb2-f221c6a2ab2a"
}
}
```

#### Updating a specific CIFS share for an SVM

The CIFS share being modified is identified by the UUID of its SVM and the CIFS share name. The CIFS share ACLs cannot be modified with this API.

```
# The API:
PATCH /api/protocols/cifs/shares/{svm.uuid}/{name}

# The call:
 curl -X PATCH "https://<mgmt-ip>/api/protocols/cifs/shares/000c5cd2-ebdf-
11e8-a96e-0050568ea3cb/TEST" -H "accept: application/json" -H "Content-
Type: application/json" -d "{ \"access_based_enumeration\": true,
\"change_notify\": true, \"comment\": \"HR Department Share\",
\"encryption\": false, \"oplocks\": true, \"path\": \"/\",
\"unix_symlink\": \"widelink\"}"
```

#### Removing a specific CIFS share for an SVM

The CIFS share being removed is identified by the UUID of its SVM and the CIFS share name.

```
# The API:
DELETE /api/protocols/cifs/shares/{svm.uuid}/{name}

# The call:
curl -X DELETE "https://<mgmt-ip>/api/protocols/cifs/shares/000c5cd2-ebdf-
11e8-a96e-0050568ea3cb/test" -H "accept: application/json"
```

## Retrieve CIFS shares

GET `/protocols/cifs/shares`

Retrieves CIFS shares.

### Related ONTAP commands

- `vserver cifs share show`
- `vserver cifs share properties show`

### Learn more

- DOC /protocols/cifs/shares

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| comment | string | query | False | Filter by comment |
| name | string | query | False | Filter by name |
| volume.uuid | string | query | False | Filter by volume.uuid |
| volume.name | string | query | False | Filter by volume.name |
| oplocks | boolean | query | False | Filter by oplocks |
| encryption | boolean | query | False | Filter by encryption |
| path | string | query | False | Filter by path |
| home_directory | boolean | query | False | Filter by home_directory |
| svm.uuid | string | query | False | Filter by svm.uuid |
| svm.name | string | query | False | Filter by svm.name |
| unix_symlink | string | query | False | Filter by unix_symlink |
| access_based_enumeration | boolean | query | False | Filter by access_based_enumeration |
| acls.type | string | query | False | Filter by acls.type |
| acls.permission | string | query | False | Filter by acls.permission |
| acls.user_or_group | string | query | False | Filter by acls.user_or_group |
| change_notify | boolean | query | False | Filter by change_notify |
| fields | array[string] | query | False | Specify the fields to return. |
| max_records | integer | query | False | Limit the number of records returned. |

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

**Response**

```
Status: 200, Ok
```

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

**Example response**


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "acls": [
        {
          "_links": {
            "self": {
              "href": "/api/resourcelink"
            }
          },
          "permission": "string",
          "type": "string",
          "user_or_group": "ENGDOMAIN\\ad_user"
        }
      ],
      "comment": "HR Department Share",
      "name": "HR_SHARE",
      "path": "/volume_1/eng_vol/",
      "svm": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "svm1",
        "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
      },
      "unix_symlink": "string",
      "volume": {
        "_links": {
          "self": {
```

```
            "href": "/api/resourcelink"
          }
        },
        "name": "volume1",
        "uuid": "028baa66-41bd-11e9-81d5-00a0986138f7"
      }
    }
  ]
}
```


### 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 |
|---|---|---|
| next | href | |
| self | href | |

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

cifs_share_acl

The permissions that users and groups have on a CIFS share.

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| permission | string | Specifies the access rights that a user or group has on the defined CIFS Share. The following values are allowed:<br>• no_access - User does not have CIFS share access<br>• read - User has only read access<br>• change - User has change access<br>• full_control - User has full_control access |

| Name | Type | Description |
|---|---|---|
| type | string | Specifies the type of the user or group to add to the access control list of a CIFS share. The following values are allowed:<br>• windows - Windows user or group<br>• unix_user - UNIX user<br>• unix_group - UNIX group |
| user_or_group | string | Specifies the user or group name to add to the access control list of a CIFS share. |

svm

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

volume

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | The name of the volume. |
| uuid | string | 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.<br>• example: 028baa66-41bd-11e9-81d5-00a0986138f7 |

cifs_share

CIFS share is a named access point in a volume. Before users and applications can access data on the CIFS server over SMB, a CIFS share must be created with sufficient share permission. CIFS shares are tied to the CIFS server on the SVM. When a CIFS share is created, ONTAP creates a default ACL for the share with Full Control permissions for Everyone.

| Name | Type | Description |
| --- | --- | --- |
| _links | _links | |
| access_based_enumeration | boolean | If enabled, all folders inside this share are visible to a user based on that individual user access right; prevents the display of folders or other shared resources that the user does not have access to. |
| acls | array[cifs_share_acl] | |
| change_notify | boolean | Specifies whether CIFS clients can request for change notifications for directories on this share. |
| comment | string | Specify the CIFS share descriptions. |
| encryption | boolean | Specifies that SMB encryption must be used when accessing this share. Clients that do not support encryption are not able to access this share. |

| Name | Type | Description |
| --- | --- | --- |
| home_directory | boolean | Specifies whether or not the share is a home directory share, where the share and path names are dynamic. ONTAP home directory functionality automatically offer each user a dynamic share to their home directory without creating an individual SMB share for each user. The ONTAP CIFS home directory feature enable us to configure a share that maps to different directories based on the user that connects to it. Instead of creating a separate shares for each user, a single share with a home directory parameters can be created. In a home directory share, ONTAP dynamically generates the share-name and share-path by substituting %w, %u, and %d variables with the corresponding Windows user name, UNIX user name, and domain name, respectively.<br>• Default value:<br>• readCreate: 1 |
| name | string | Specifies the name of the CIFS share that you want to create. If this is a home directory share then the share name includes the pattern as %w (Windows user name), %u (UNIX user name) and %d (Windows domain name) variables in any combination with this parameter to generate shares dynamically. |
| oplocks | boolean | Specify whether opportunistic locks are enabled on this share. "Oplocks" allow clients to lock files and cache content locally, which can increase performance for file operations. |

| Name | Type | Description |
| --- | --- | --- |
| path | string | The fully-qualified pathname in the owning SVM namespace that is shared through this share. If this is a home directory share then the path should be dynamic by specifying the pattern %w (Windows user name), %u (UNIX user name), or %d (domain name) variables in any combination. ONTAP generates the path dynamically for the connected user and this path is appended to each search path to find the full Home Directory path.<br>• example: /volume_1/eng_vol/<br>• maxLength: 256<br>• minLength: 1 |
| svm | svm | |
| unix_symlink | string | Controls the access of UNIX symbolic links to CIFS clients. The supported values are:<br>• local - Enables only local symbolic links which is within the same CIFS share.<br>• widelink - Enables both local symlinks and widelinks.<br>• disable - Disables local symlinks and widelinks. |
| volume | volume | |

error_arguments

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

error

| Name | Type | Description |
| --- | --- | --- |
| arguments | array[error_arguments] | Message arguments |

| Name | Type | Description |
|---|---|---|
| code | string | Error code |
| message | string | Error message |
| target | string | The target parameter that caused the error. |

## Create a CIFS share

POST `/protocols/cifs/shares`

Creates a CIFS share.

### Required properties

- `svm.uuid` or `svm.name` - Existing SVM in which to create the CIFS share.
- `name` - Name of the CIFS share.
- `path` - Path in the owning SVM namespace that is shared through this share.

### Recommended optional properties

- `comment` - Optionally choose to add a text comment of up to 256 characters about the CIFS share.
- `acls` - Optionally choose to add share permissions that users and groups have on the CIFS share.

### Default property values

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

- `home_directory` - *false*
- `oplocks` - *true*
- `access_based_enumeration` - *false*
- `change_notify` - *true*
- `encryption` - *false*
- `unix_symlink` - *local*

### Related ONTAP commands

- `vserver cifs share create`
- `vserver cifs share properties add`
- `vserver cifs share access-control create`

### Learn more

- DOC /protocols/cifs/shares

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| return_records | boolean | query | False | The default is false. If set to true, the records are returned. |

### Request Body

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| access_based_enumeration | boolean | If enabled, all folders inside this share are visible to a user based on that individual user access right; prevents the display of folders or other shared resources that the user does not have access to. |
| acls | array[cifs_share_acl] | |
| change_notify | boolean | Specifies whether CIFS clients can request for change notifications for directories on this share. |
| comment | string | Specify the CIFS share descriptions. |
| encryption | boolean | Specifies that SMB encryption must be used when accessing this share. Clients that do not support encryption are not able to access this share. |

| Name | Type | Description |
| --- | --- | --- |
| home_directory | boolean | Specifies whether or not the share is a home directory share, where the share and path names are dynamic. ONTAP home directory functionality automatically offer each user a dynamic share to their home directory without creating an individual SMB share for each user. The ONTAP CIFS home directory feature enable us to configure a share that maps to different directories based on the user that connects to it. Instead of creating a separate shares for each user, a single share with a home directory parameters can be created. In a home directory share, ONTAP dynamically generates the share-name and share-path by substituting %w, %u, and %d variables with the corresponding Windows user name, UNIX user name, and domain name, respectively.<br>• Default value: 1<br>• readCreate: 1 |
| name | string | Specifies the name of the CIFS share that you want to create. If this is a home directory share then the share name includes the pattern as %w (Windows user name), %u (UNIX user name) and %d (Windows domain name) variables in any combination with this parameter to generate shares dynamically. |
| oplocks | boolean | Specify whether opportunistic locks are enabled on this share. "Oplocks" allow clients to lock files and cache content locally, which can increase performance for file operations. |

| Name | Type | Description |
| --- | --- | --- |
| path | string | The fully-qualified pathname in the owning SVM namespace that is shared through this share. If this is a home directory share then the path should be dynamic by specifying the pattern %w (Windows user name), %u (UNIX user name), or %d (domain name) variables in any combination. ONTAP generates the path dynamically for the connected user and this path is appended to each search path to find the full Home Directory path.<br>• example: /volume_1/eng_vol/<br>• maxLength: 256<br>• minLength: 1 |
| svm | svm | |
| unix_symlink | string | Controls the access of UNIX symbolic links to CIFS clients. The supported values are:<br>• local - Enables only local symbolic links which is within the same CIFS share.<br>• widelink - Enables both local symlinks and widelinks.<br>• disable - Disables local symlinks and widelinks. |
| volume | volume | |

**Example request**


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "acls": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "permission": "string",
      "type": "string",
      "user_or_group": "ENGDOMAIN\\ad_user"
    }
  ],
  "comment": "HR Department Share",
  "name": "HR_SHARE",
  "path": "/volume_1/eng_vol/",
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  },
  "unix_symlink": "string",
  "volume": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "volume1",
    "uuid": "028baa66-41bd-11e9-81d5-00a0986138f7"
  }
}
```

### Response

```
Status: 201, Created
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 655628 | CIFS Share Creation with property 'SMB_ENCRYPTION' failed because the CIFS server does not support SMB3.0 |
| 655551 | CIFS Share Creation failed because the specified path does not exist |
| 655577 | The CIFS share name cannot be more than 80 characters long |
| 655399 | Failed to create CIFS share. The CIFS server does not exist for specified SVM |
| 656422 | Failed to create the home directory share because the directory shares must specify a path relative to one or more home directory search paths |
| 656423 | Failed to create CIFS share. The Shares must define an absolute share path |
| 656424 | Failed to create CIFS the administrator share 'c$' because you are not permitted to created any admin shares |
| 655625 | Failed to create CIFS share. The Shares path is not a valid file-type for CIFS share |
| 656426 | CIFS Share Creation failed because the share name is invalid |

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

### Example error


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


### Definitions

**See Definitions**

href

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

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

cifs_share_acl

The permissions that users and groups have on a CIFS share.

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| permission | string | Specifies the access rights that a user or group has on the defined CIFS Share. The following values are allowed:<br>• no_access - User does not have CIFS share access<br>• read - User has only read access<br>• change - User has change access<br>• full_control - User has full_control access |
| type | string | Specifies the type of the user or group to add to the access control list of a CIFS share. The following values are allowed:<br>• windows - Windows user or group<br>• unix_user - UNIX user<br>• unix_group - UNIX group |
| user_or_group | string | Specifies the user or group name to add to the access control list of a CIFS share. |

svm

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

volume

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | The name of the volume. |
| uuid | string | 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.<br><br>• example: 028baa66-41bd-11e9-81d5-00a0986138f7 |

cifs_share

CIFS share is a named access point in a volume. Before users and applications can access data on the CIFS server over SMB, a CIFS share must be created with sufficient share permission. CIFS shares are tied to the CIFS server on the SVM. When a CIFS share is created, ONTAP creates a default ACL for the share with Full Control permissions for Everyone.

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| access_based_enumeration | boolean | If enabled, all folders inside this share are visible to a user based on that individual user access right; prevents the display of folders or other shared resources that the user does not have access to. |
| acls | array[cifs_share_acl] | |
| change_notify | boolean | Specifies whether CIFS clients can request for change notifications for directories on this share. |

| Name | Type | Description |
| --- | --- | --- |
| comment | string | Specify the CIFS share descriptions. |
| encryption | boolean | Specifies that SMB encryption must be used when accessing this share. Clients that do not support encryption are not able to access this share. |
| home_directory | boolean | Specifies whether or not the share is a home directory share, where the share and path names are dynamic. ONTAP home directory functionality automatically offer each user a dynamic share to their home directory without creating an individual SMB share for each user. The ONTAP CIFS home directory feature enable us to configure a share that maps to different directories based on the user that connects to it. Instead of creating a separate shares for each user, a single share with a home directory parameters can be created. In a home directory share, ONTAP dynamically generates the share-name and share-path by substituting %w, %u, and %d variables with the corresponding Windows user name, UNIX user name, and domain name, respectively.<br>• Default value: 1<br>• readCreate: 1 |
| name | string | Specifies the name of the CIFS share that you want to create. If this is a home directory share then the share name includes the pattern as %w (Windows user name), %u (UNIX user name) and %d (Windows domain name) variables in any combination with this parameter to generate shares dynamically. |

| Name | Type | Description |
| --- | --- | --- |
| oplocks | boolean | Specify whether opportunistic locks are enabled on this share. "Oplocks" allow clients to lock files and cache content locally, which can increase performance for file operations. |
| path | string | The fully-qualified pathname in the owning SVM namespace that is shared through this share. If this is a home directory share then the path should be dynamic by specifying the pattern %w (Windows user name), %u (UNIX user name), or %d (domain name) variables in any combination. ONTAP generates the path dynamically for the connected user and this path is appended to each search path to find the full Home Directory path.<br>• example: /volume_1/eng_vol/<br>• maxLength: 256<br>• minLength: 1 |
| svm | svm | |
| unix_symlink | string | Controls the access of UNIX symbolic links to CIFS clients. The supported values are:<br>• local - Enables only local symbolic links which is within the same CIFS share.<br>• widelink - Enables both local symlinks and widelinks.<br>• disable - Disables local symlinks and widelinks. |
| volume | volume | |

error_arguments

| Name | Type | Description |
| --- | --- | --- |
| code | string | Argument code |

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

error

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

## Delete a CIFS share

DELETE `/protocols/cifs/shares/{svm.uuid}/{name}`

Deletes a CIFS share.

### Related ONTAP commands

- `vserver cifs share delete`

### Learn more

- DOC /protocols/cifs/shares

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| name | string | path | True | Share Name |

### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 655393 | Standard admin shares cannot be removed |

| 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 a CIFS share

GET `/protocols/cifs/shares/{svm.uuid}/{name}`

Retrieves a CIFS share.

#### Related ONTAP commands

- `vserver cifs share show`
- `vserver cifs share properties show`

#### Learn more

- DOC /protocols/cifs/shares

#### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| name | string | path | True | Share Name |

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

**Response**

```
Status: 200, Ok
```

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| access_based_enumeration | boolean | If enabled, all folders inside this share are visible to a user based on that individual user access right; prevents the display of folders or other shared resources that the user does not have access to. |
| acls | array[cifs_share_acl] | |
| change_notify | boolean | Specifies whether CIFS clients can request for change notifications for directories on this share. |
| comment | string | Specify the CIFS share descriptions. |
| encryption | boolean | Specifies that SMB encryption must be used when accessing this share. Clients that do not support encryption are not able to access this share. |

| Name | Type | Description |
| --- | --- | --- |
| home_directory | boolean | Specifies whether or not the share is a home directory share, where the share and path names are dynamic. ONTAP home directory functionality automatically offer each user a dynamic share to their home directory without creating an individual SMB share for each user. The ONTAP CIFS home directory feature enable us to configure a share that maps to different directories based on the user that connects to it. Instead of creating a separate shares for each user, a single share with a home directory parameters can be created. In a home directory share, ONTAP dynamically generates the share-name and share-path by substituting %w, %u, and %d variables with the corresponding Windows user name, UNIX user name, and domain name, respectively.<br>• Default value: 1<br>• readCreate: 1 |
| name | string | Specifies the name of the CIFS share that you want to create. If this is a home directory share then the share name includes the pattern as %w (Windows user name), %u (UNIX user name) and %d (Windows domain name) variables in any combination with this parameter to generate shares dynamically. |
| oplocks | boolean | Specify whether opportunistic locks are enabled on this share. "Oplocks" allow clients to lock files and cache content locally, which can increase performance for file operations. |

| Name | Type | Description |
| --- | --- | --- |
| path | string | The fully-qualified pathname in the owning SVM namespace that is shared through this share. If this is a home directory share then the path should be dynamic by specifying the pattern %w (Windows user name), %u (UNIX user name), or %d (domain name) variables in any combination. ONTAP generates the path dynamically for the connected user and this path is appended to each search path to find the full Home Directory path.<br>• example: /volume_1/eng_vol/<br>• maxLength: 256<br>• minLength: 1 |
| svm | svm | |
| unix_symlink | string | Controls the access of UNIX symbolic links to CIFS clients. The supported values are:<br>• local - Enables only local symbolic links which is within the same CIFS share.<br>• widelink - Enables both local symlinks and widelinks.<br>• disable - Disables local symlinks and widelinks. |
| volume | volume | |

**Example response**


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "acls": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "permission": "string",
      "type": "string",
      "user_or_group": "ENGDOMAIN\\ad_user"
    }
  ],
  "comment": "HR Department Share",
  "name": "HR_SHARE",
  "path": "/volume_1/eng_vol/",
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  },
  "unix_symlink": "string",
  "volume": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "volume1",
    "uuid": "028baa66-41bd-11e9-81d5-00a0986138f7"
  }
}
```

### 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 | |

cifs_share_acl

The permissions that users and groups have on a CIFS share.

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| permission | string | Specifies the access rights that a user or group has on the defined CIFS Share. The following values are allowed:<br>• no_access - User does not have CIFS share access<br>• read - User has only read access<br>• change - User has change access<br>• full_control - User has full_control access |
| type | string | Specifies the type of the user or group to add to the access control list of a CIFS share. The following values are allowed:<br>• windows - Windows user or group<br>• unix_user - UNIX user<br>• unix_group - UNIX group |
| user_or_group | string | Specifies the user or group name to add to the access control list of a CIFS share. |

svm

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

volume

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | The name of the volume. |
| uuid | string | 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.<br><br>• example: 028baa66-41bd-11e9-81d5-00a0986138f7 |

error_arguments

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

error

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

## Update a CIFS share

PATCH `/protocols/cifs/shares/{svm.uuid}/{name}`

Updates a CIFS share.

### Related ONTAP commands

- `vserver cifs share modify`
- `vserver cifs share properties add`
- `vserver cifs share properties remove`

### Learn more

- DOC /protocols/cifs/shares

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| name | string | path | True | Share Name |

### Request Body

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| access_based_enumeration | boolean | If enabled, all folders inside this share are visible to a user based on that individual user access right; prevents the display of folders or other shared resources that the user does not have access to. |
| change_notify | boolean | Specifies whether CIFS clients can request for change notifications for directories on this share. |
| comment | string | Specify the CIFS share descriptions. |

| Name | Type | Description |
| --- | --- | --- |
| encryption | boolean | Specifies that SMB encryption must be used when accessing this share. Clients that do not support encryption are not able to access this share. |
| oplocks | boolean | Specify whether opportunistic locks are enabled on this share. "Oplocks" allow clients to lock files and cache content locally, which can increase performance for file operations. |
| path | string | The fully-qualified pathname in the owning SVM namespace that is shared through this share. If this is a home directory share then the path should be dynamic by specifying the pattern %w (Windows user name), %u (UNIX user name), or %d (domain name) variables in any combination. ONTAP generates the path dynamically for the connected user and this path is appended to each search path to find the full Home Directory path.<br>• example: /volume_1/eng_vol/<br>• maxLength: 256<br>• minLength: 1 |
| svm | svm | |
| unix_symlink | string | Controls the access of UNIX symbolic links to CIFS clients. The supported values are:<br>• local - Enables only local symbolic links which is within the same CIFS share.<br>• widelink - Enables both local symlinks and widelinks.<br>• disable - Disables local symlinks and widelinks. |
| volume | volume | |

### Example request


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "comment": "HR Department Share",
  "home_directory": null,
  "path": "/volume_1/eng_vol/",
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  },
  "unix_symlink": "string",
  "volume": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "volume1",
    "uuid": "028baa66-41bd-11e9-81d5-00a0986138f7"
  }
}
```


### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 655628 | 'SMB_ENCRYPTION' property cannot be set on CIFS share because the CIFS server does not support SMB3.0 |
| 655551 | CIFS Share modification failed because the specified path does not exist |
| 655620 | Cannot set symlink properties for admin shares |
| 656420 | Cannot modify the standard share ipc$ |
| 656421 | Cannot modify the standard share admin$ |
| 656422 | Failed to modify the home directory share because the directory shares must specify a path relative to one or more home directory search paths |
| 656423 | Failed to modify CIFS share. The Shares must define an absolute share path |
| 656425 | Failed to modify the CIFS share because the path for an administrative share cannot be modified |

| 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 | |

cifs_share_acl

The permissions that users and groups have on a CIFS share.

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| permission | string | Specifies the access rights that a user or group has on the defined CIFS Share. The following values are allowed:<br>• no_access - User does not have CIFS share access<br>• read - User has only read access<br>• change - User has change access<br>• full_control - User has full_control access |

svm

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

volume

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

| Name | Type | Description |
|---|---|---|
| name | string | The name of the volume. |
| uuid | string | 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.<br><br>• example: 028baa66-41bd-11e9-81d5-00a0986138f7 |

cifs_share

CIFS share is a named access point in a volume. Before users and applications can access data on the CIFS server over SMB, a CIFS share must be created with sufficient share permission. CIFS shares are tied to the CIFS server on the SVM. When a CIFS share is created, ONTAP creates a default ACL for the share with Full Control permissions for Everyone.

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| access_based_enumeration | boolean | If enabled, all folders inside this share are visible to a user based on that individual user access right; prevents the display of folders or other shared resources that the user does not have access to. |
| change_notify | boolean | Specifies whether CIFS clients can request for change notifications for directories on this share. |
| comment | string | Specify the CIFS share descriptions. |
| encryption | boolean | Specifies that SMB encryption must be used when accessing this share. Clients that do not support encryption are not able to access this share. |

| Name | Type | Description |
| --- | --- | --- |
| oplocks | boolean | Specify whether opportunistic locks are enabled on this share. "Oplocks" allow clients to lock files and cache content locally, which can increase performance for file operations. |
| path | string | The fully-qualified pathname in the owning SVM namespace that is shared through this share. If this is a home directory share then the path should be dynamic by specifying the pattern %w (Windows user name), %u (UNIX user name), or %d (domain name) variables in any combination. ONTAP generates the path dynamically for the connected user and this path is appended to each search path to find the full Home Directory path.<br>• example: /volume_1/eng_vol/<br>• maxLength: 256<br>• minLength: 1 |
| svm | svm | |
| unix_symlink | string | Controls the access of UNIX symbolic links to CIFS clients. The supported values are:<br>• local - Enables only local symbolic links which is within the same CIFS share.<br>• widelink - Enables both local symlinks and widelinks.<br>• disable - Disables local symlinks and widelinks. |
| volume | volume | |

error_arguments

| Name | Type | Description |
| --- | --- | --- |
| code | string | Argument code |

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

error

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

# Manage share-level ACL

## Protocols CIFS shares svm.uuid share acls endpoint overview

### Overview

Access to files and folders can be secured over a network by configuring share access control lists (ACLs) on CIFS shares. Share-level ACLs can be configured by using either Windows users and groups or UNIX users and groups. A share-level ACL consists of a list of access control entries (ACEs). Each ACE contains a user or group name and a set of permissions that determines user or group access to the share, regardless of the security style of the volume or qtree containing the share.

When an SMB user tries to access a share, ONTAP checks the share-level ACL to determine whether access should be granted. A share-level ACL only restricts access to files in the share; it never grants more access than the file level ACLs.

### Examples

#### Creating a CIFS share ACL

To create a share ACL for a CIFS share, use the following API. Note the *return_records=true* query parameter used to obtain the newly created entry in the response.

```
# The API:
POST /api/protocols/cifs/shares{svm.uuid}/{share}/acls

# The call:
curl -X POST "https://<mgmt-ip>/api/protocols/cifs/shares/000c5cd2-ebdf-
11e8-a96e-0050568ea3cb/sh1/acls?return_records=true" -H "accept:
application/json" -H "Content-Type: application/json" -d "{
\"permission\": \"no_access\", \"type\": \"windows\", \"user_or_group\":
\"root\"}"

# The response:
{
"num_records": 1,
"records": [
  {
    "svm": {
      "name": "vs1"
    },
    "user_or_group": "root",
    "type": "windows",
    "permission": "no_access"
  }
]
}
```

#### Retrieving all CIFS shares ACLs for a specific CIFS share for a specific SVM in the cluster

```
# The API:
GET /api/protocols/cifs/shares/{svm.uuid}/{share}/acls

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/cifs/shares/000c5cd2-ebdf-
11e8-a96e-
0050568ea3cb/sh1/acls?fields=*&return_records=true&return_timeout=15" -H
"accept: application/json"

# The response:
{
"records": [
  {
    "svm": {
      "uuid": "000c5cd2-ebdf-11e8-a96e-0050568ea3cb",
      "name": "vs1"
    },
    "share": "sh1",
    "user_or_group": "Everyone",
    "type": "windows",
    "permission": "full_control"
  },
  {
    "svm": {
      "uuid": "000c5cd2-ebdf-11e8-a96e-0050568ea3cb",
      "name": "vs1"
    },
    "share": "sh1",
    "user_or_group": "root",
    "type": "windows",
    "permission": "no_access"
  }
],
"num_records": 2
}
```

**Retrieving a CIFS share ACLs for a user or a group of type Windows or type UNIX on a CIFS share for a specific SVM**

```
# The API:
GET
/api/protocols/cifs/shares/{svm.uuid}/{share}/acls/{user_or_group}/{type}

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/cifs/shares/000c5cd2-ebdf-
11e8-a96e-0050568ea3cb/sh1/acls/everyone/windows" -H "accept:
application/json"

# The response:
{
"svm": {
  "uuid": "000c5cd2-ebdf-11e8-a96e-0050568ea3cb",
  "name": "vs1"
},
"share": "sh1",
"user_or_group": "everyone",
"type": "windows",
"permission": "full_control"
}
```

#### Updating a CIFS share ACLs of a user or group on a CIFS share for a specific SVM

The CIFS share ACL being modified is identified by the UUID of its SVM, the CIFS share name, user or group name and the type of the user or group.

```
# The API:
PATCH
/api/protocols/cifs/shares/{svm.uuid}/{share}/acls/{user_or_group}/{type}

# The call:
curl -X PATCH "https://<mgmt-ip>/api/protocols/cifs/shares/000c5cd2-ebdf-
11e8-a96e-0050568ea3cb/sh1/acls/everyone/windows" -H "accept:
application/json" -H "Content-Type: application/json" -d "{
\"permission\": \"no_access\"}"
```

#### Removing a CIFS share ACLs of a user or group on a CIFS Share for a specific SVM

The CIFS share ACL being removed is identified by the UUID of its SVM, the CIFS share name, user or group name and the type of the user or group.

```
# The API:
DELETE
/api/protocols/cifs/shares/{svm.uuid}/{share}/acls/{user_or_group}/{type}

# The call:
curl -X DELETE "https://<mgmt-ip>/api/protocols/cifs/shares/000c5cd2-ebdf-
11e8-a96e-0050568ea3cb/sh1/acls/everyone/windows" -H "accept:
application/json"
```

## Retrieve a share-level ACL on a CIFS share

GET `/protocols/cifs/shares/{svm.uuid}/{share}/acls`

Retrieves the share-level ACL on a CIFS share.

### Related ONTAP commands

- `vserver cifs share access-control show`

### Learn more

- DOC /protocols/cifs/shares/{svm.uuid}/{share}/acls

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| share | string | path | True | CIFS Share Name |
| type | string | query | False | Filter by type |
| permission | string | query | False | Filter by permission |
| user_or_group | string | query | False | Filter by user_or_group |
| fields | array[string] | query | False | Specify the fields to return. |
| max_records | integer | query | False | Limit the number of records returned. |

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

**Response**

```
Status: 200, Ok
```

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

### Example response


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "permission": "string",
      "type": "string",
      "user_or_group": "ENGDOMAIN\\ad_user"
    }
  ]
}
```


### 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 |
|---|---|---|
| next | href | |
| self | href | |

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

cifs_share_acl

The permissions that users and groups have on a CIFS share.

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| permission | string | Specifies the access rights that a user or group has on the defined CIFS Share. The following values are allowed:<br>• no_access - User does not have CIFS share access<br>• read - User has only read access<br>• change - User has change access<br>• full_control - User has full_control access |

| Name | Type | Description |
|---|---|---|
| type | string | Specifies the type of the user or group to add to the access control list of a CIFS share. The following values are allowed:<br>• windows - Windows user or group<br>• unix_user - UNIX user<br>• unix_group - UNIX group |
| user_or_group | string | Specifies the user or group name to add to the access control list of a CIFS share. |

error_arguments

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

error

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

## Create a share-level ACL on a CIFS share

POST `/protocols/cifs/shares/{svm.uuid}/{share}/acls`

Creates a share-level ACL on a CIFS share.

### Required properties

- `svm.uuid` or `svm.name` - Existing SVM in which to create the share acl.
- `share` - Existing CIFS share in which to create the share acl.

- `user_or_group` - Existing user or group name for which the acl is added on the CIFS share.
- `permission` - Access rights that a user or group has on the defined CIFS share.

### Default property values

- `type` - *windows*

### Related ONTAP commands

- `vserver cifs share access-control create`

### Learn more

- DOC /protocols/cifs/shares/{svm.uuid}/{share}/acls

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| return_records | boolean | query | False | The default is false. If set to true, the records are returned. |
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| share | string | path | True | CIFS Share Name |

### Request Body

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| permission | string | Specifies the access rights that a user or group has on the defined CIFS Share. The following values are allowed:<br>• no_access - User does not have CIFS share access<br>• read - User has only read access<br>• change - User has change access<br>• full_control - User has full_control access |

| Name | Type | Description |
|---|---|---|
| type | string | Specifies the type of the user or group to add to the access control list of a CIFS share. The following values are allowed:<br>• windows - Windows user or group<br>• unix_user - UNIX user<br>• unix_group - UNIX group |
| user_or_group | string | Specifies the user or group name to add to the access control list of a CIFS share. |

**Example request**

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "permission": "string",
  "type": "string",
  "user_or_group": "ENGDOMAIN\\ad_user"
}
```

**Response**

```
Status: 201, Created
```

**Error**

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 655470 | Failed to create share ACL because the share does not exist |

| Error Code | Description |
| --- | --- |
| 655446 | Failed to create share ACL because the specified Windows user/group does not exist |
| 4849678 | Failed to create share ACL because the specified UNIX user/group does not exist |

| 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 | |

cifs_share_acl

The permissions that users and groups have on a CIFS share.

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| permission | string | Specifies the access rights that a user or group has on the defined CIFS Share. The following values are allowed:<br>• no_access - User does not have CIFS share access<br>• read - User has only read access<br>• change - User has change access<br>• full_control - User has full_control access |
| type | string | Specifies the type of the user or group to add to the access control list of a CIFS share. The following values are allowed:<br>• windows - Windows user or group<br>• unix_user - UNIX user<br>• unix_group - UNIX group |
| user_or_group | string | Specifies the user or group name to add to the access control list of a CIFS share. |

error_arguments

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

error

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

## Delete a share-level ACL on a CIFS share

DELETE `/protocols/cifs/shares/{svm.uuid}/{share}/acls/{user_or_group}/{type}`

Deletes a share-level ACL on a CIFS share.

### Related ONTAP commands

- `vserver cifs share access-control delete`

### Learn more

- DOC /protocols/cifs/shares/{svm.uuid}/{share}/acls

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| share | string | path | True | Share name |
| user_or_group | string | path | True | User or group name |
| type | string | path | True | User or group type |

### Response

```
Status: 200, Ok
```

### 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**

error_arguments

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

error

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

## Retrieve a share-level ACL on a CIFS share for a user or group

GET `/protocols/cifs/shares/{svm.uuid}/{share}/acls/{user_or_group}/{type}`

Retrieves the share-level ACL on CIFS share for a specified user or group.

### Related ONTAP commands

- `vserver cifs share access-control show`

### Learn more

- DOC /protocols/cifs/shares/{svm.uuid}/{share}/acls

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| share | string | path | True | Share name |
| user_or_group | string | path | True | User or group name |

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| type | string | path | True | User or group type |
| fields | array[string] | query | False | Specify the fields to return. |

**Response**

```
Status: 200, Ok
```

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| permission | string | Specifies the access rights that a user or group has on the defined CIFS Share. The following values are allowed:<br>• no_access - User does not have CIFS share access<br>• read - User has only read access<br>• change - User has change access<br>• full_control - User has full_control access |
| type | string | Specifies the type of the user or group to add to the access control list of a CIFS share. The following values are allowed:<br>• windows - Windows user or group<br>• unix_user - UNIX user<br>• unix_group - UNIX group |
| user_or_group | string | Specifies the user or group name to add to the access control list of a CIFS share. |

### Example response


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "permission": "string",
  "type": "string",
  "user_or_group": "ENGDOMAIN\\ad_user"
}
```


### 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 | |

error_arguments

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

error

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

## Update a share-level ACL on a CIFS share

PATCH `/protocols/cifs/shares/{svm.uuid}/{share}/acls/{user_or_group}/{type}`

Updates a share-level ACL on a CIFS share.

### Related ONTAP commands

- `vserver cifs share access-control modify`

### Learn more

- DOC /protocols/cifs/shares/{svm.uuid}/{share}/acls

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| share | string | path | True | Share name |
| user_or_group | string | path | True | User or group name |
| type | string | path | True | User or group type |

### Request Body

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| permission | string | Specifies the access rights that a user or group has on the defined CIFS Share. The following values are allowed:<br>• no_access - User does not have CIFS share access<br>• read - User has only read access<br>• change - User has change access<br>• full_control - User has full_control access |

### Example request

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

### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 655516 | The share ACL does not exist for given user and share |

| 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 | |

cifs_share_acl

The permissions that users and groups have on a CIFS share.

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| permission | string | Specifies the access rights that a user or group has on the defined CIFS Share. The following values are allowed:<br>• no_access - User does not have CIFS share access<br>• read - User has only read access<br>• change - User has change access<br>• full_control - User has full_control access |

error_arguments

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

error

| Name | Type | Description |
|---|---|---|
| arguments | array[error_arguments] | Message arguments |

| Name | Type | Description |
|---|---|---|
| code | string | Error code |
| message | string | Error message |
| target | string | The target parameter that caused the error. |

# Manage CIFS UNIX symlink mapping

## Protocols CIFS unix-symlink-mapping endpoint overview

### Overview

ONTAP allows both CIFS and NFS to access the same datastore. This datastore can contain symbolic links which are files, created by UNIX clients. It contains a reference to another file or directory. If an SMB client accesses a symbolic link, it is redirected to the target file or directory that the symbolic link refers to. The symbolic links can point to files within the volume that contain the share, or to files that are contained in other volumes on the Storage Virtual Machine (SVM), or even to volumes contained on other SVMs.

There are two types of symbolic links:

---

**Relative** A relative symbolic link contains a reference to the file or directory relative to its parent directory. Therefore, the path of the file it is referring to should not begin with a backslash (/). If you enable symbolic links on a share, relative symbolic links work without UNIX symlink mapping.

---

**Absolute** An absolute symbolic link contains a reference to a file or directory in the form of an absolute path. Therefore, the path of the file it is referring to should begin with a backslash (/). An absolute symbolic link can refer to a file or directory within or outside of the file system of the symbolic link. If the target is not in the same local file system, the symbolic link is called a "widelink". If the symbolic link is enabled on a share and absolute symbolic links do not work right away, the mapping between the UNIX path of the symbolic link to the destination CIFS path must be created. When creating absolute symbolic link mappings, locality could be either "local" or "widelink" and it must be specified. If UNIX symlink mapping is created for a file or directory which is outside of the local share but the locality is set to "local", ONTAP does not allow access to the target.

A UNIX symbolic link support could be added to SMB shares by specifying the *unix_symlink* property during the creation of SMB shares or at any time by modifying the existing SMB *unix_symlink* property. UNIX symbolic link support is enabled by default.

### Examples

#### Creating a UNIX symlink mapping for CIFS shares

To create UNIX symlink mappings for SMB shares, use the following API. Note the *return_records=true* query parameter used to obtain the newly created entry in the response.

```
# The API:
POST /api/protocols/cifs/unix-symlink-mapping

# The call:
curl -X POST "https://<mgmt-ip>/api/protocols/cifs/unix-symlink-
mapping?return_records=true" -H "accept: application/json" -H "Content-
Type: application/json" -d "{ \"svm\": { \"name\": \"vs1\", \"uuid\":
\"000c5cd2-ebdf-11e8-a96e-0050568ea3cb\" }, \"target\": {
\"home_directory\": false, \"locality\": \"local\", \"path\":
\"/dir1/dir2/\", \"server\": \"cifs123\", \"share\": \"sh1\" },
\"unix_path\": \"/mnt/eng_volume/\"}"

# The response:
{
"num_records": 1,
"records": [
  {
    "svm": {
      "uuid": "000c5cd2-ebdf-11e8-a96e-0050568ea3cb",
      "name": "vs1"
    },
    "unix_path": "/mnt/eng_volume/",
    "target": {
      "share": "sh1",
      "path": "/dir1/dir2/",
      "server": "cifs123",
      "locality": "local",
      "home_directory": false
    }
  }
]
}
```

#### Retrieving UNIX symlink mappings for all SVMs in the cluster

```
# The API:
GET /api/protocols/cifs/unix-symlink-mapping

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/cifs/unix-symlink-
mapping?fields=*&return_records=true&return_timeout=15" -H "accept:
application/hal+json"
```

```
# The response:
{
"records": [
  {
    "svm": {
      "uuid": "000c5cd2-ebdf-11e8-a96e-0050568ea3cb",
      "name": "vs1",
      "_links": {
        "self": {
          "href": "/api/svm/svms/000c5cd2-ebdf-11e8-a96e-0050568ea3cb"
        }
      }
    },
    "unix_path": "/mnt/eng_volume/",
    "target": {
      "share": "sh1",
      "path": "/dir1/dir2/",
      "server": "CIFS123",
      "locality": "local",
      "home_directory": false
    },
    "_links": {
      "self": {
        "href": "/api/protocols/cifs/unix-symlink-mapping/000c5cd2-ebdf-
11e8-a96e-0050568ea3cb/%2Fmnt%2Feng_volume%2F"
      }
    }
  },
  {
    "svm": {
      "uuid": "1d30d1b1-ebdf-11e8-a96e-0050568ea3cb",
      "name": "vs2",
      "_links": {
        "self": {
          "href": "/api/svm/svms/1d30d1b1-ebdf-11e8-a96e-0050568ea3cb"
        }
      }
    },
    "unix_path": "/mnt/eng_volume/",
    "target": {
      "share": "ENG_SHARE",
      "path": "/dir1/dir2/",
      "server": "ENGCIFS",
      "locality": "widelink",
      "home_directory": false
    },
```

```
    "_links": {
      "self": {
        "href": "/api/protocols/cifs/unix-symlink-mapping/1d30d1b1-ebdf-
11e8-a96e-0050568ea3cb/%2Fmnt%2Feng_volume%2F"
      }
    }
  }
],
"num_records": 2,
"_links": {
  "self": {
    "href": "/api/protocols/cifs/unix-symlink-
mapping?fields=*&return_records=true&return_timeout=15"
  }
}
}
```

#### Retrieving a specific UNIX symlink mapping for an SVM

The mapping being returned is identified by the UUID of its SVM and the unix-path.

```
# The API:
GET /api/protocols/cifs/unix-symlink-mapping/{svm.uuid}/{unix_path}

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/cifs/unix-symlink-
mapping/000c5cd2-ebdf-11e8-a96e-0050568ea3cb/%2Fmnt%2Feng_volume%2F" -H
"accept: application/json"

# The response:
{
"svm": {
  "uuid": "000c5cd2-ebdf-11e8-a96e-0050568ea3cb",
 "name": "vs1"
},
"unix_path": "/mnt/eng_volume/",
"target": {
  "share": "sh1",
  "path": "/dir1/dir2/",
  "server": "CIFS123",
  "locality": "local",
  "home_directory": false
}
}
```

#### Updating a specific UNIX symlink mapping for an SVM

The mapping being modified is identified by the UUID of its SVM and the unix-path.

```
# The API:
PATCH /api/protocols/cifs/unix-symlink-mapping/{svm.uuid}/{unix_path}

# The call:
curl -X PATCH "https://<mgmt-ip>/api/protocols/cifs/unix-symlink-
mapping/000c5cd2-ebdf-11e8-a96e-0050568ea3cb/%2Fmnt%2Feng_volume%2F" -H
"accept: application/json" -H "Content-Type: application/json" -d "{
\"target\": { \"home_directory\": true, \"locality\": \"widelink\",
\"path\": \"/new_path/\", \"server\": \"HR_SERVER\", \"share\": \"sh2\"
}}"
```

#### Removing a specific UNIX symlink mapping for an SVM

The mapping being removed is identified by the UUID of its SVM and the unix-path.

```
# The API:
DELETE /api/protocols/cifs/unix-symlink-mapping/{svm.uuid}/{unix_path}

# The call:
curl -X DELETE "https://<mgmt-ip>/api/protocols/cifs/unix-symlink-
mapping/000c5cd2-ebdf-11e8-a96e-0050568ea3cb/%2Fmnt%2Feng_volume%2F" -H
"accept: application/json"
```

## Retrieve UNIX symbolic link mappings for CIFS clients

GET `/protocols/cifs/unix-symlink-mapping`

Retrieves UNIX symbolic link mappings for CIFS clients.

### Related ONTAP commands

- `vserver cifs symlink show`

### Learn more

- DOC /protocols/cifs/unix-symlink-mapping

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| unix_path | string | query | False | Filter by unix_path |

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

### Response

```
Status: 200, Ok
```

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

### Example response


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "svm": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "svm1",
        "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
      },
      "target": {
        "locality": "string",
        "path": "/dir1/dir2/",
        "server": "ENGCIFS",
        "share": "ENG_SHARE"
      },
      "unix_path": "/mnt/eng_volume/"
    }
  ]
}
```


### 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 |
|---|---|---|
| next | href | |
| self | href | |

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

svm

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

cifs_target

| Name | Type | Description |
|---|---|---|
| home_directory | boolean | Specify if the destination share is a home directory. |
| locality | string | Specifies whether the CIFS symbolic link is a local link or wide link. The following values are supported:<br>• local - Local symbolic link maps only to the same CIFS share.<br>• widelink - Wide symbolic link maps to any CIFS share on the network. |

| Name | Type | Description |
|---|---|---|
| path | string | Specifies the CIFS path on the destination to which the symbolic link maps. The final path is generated by concatenating the CIFS server name, the share name, the cifs-path and the remaining path in the symbolic link left after the prefix match. This value is specified by using a UNIX-style path name. The trailing forward slash is required for the full path name to be properly interpreted. |
| server | string | Specifies the destination CIFS server where the UNIX symbolic link is pointing. This field is mandatory if the locality of the symbolic link is 'widelink'. You can specify the value in any of the following formats:<br>• DNS name of the CIFS server.<br>• IP address of the CIFS server.<br>• NetBIOS name of the CIFS server. |
| share | string | Specifies the CIFS share name on the destination CIFS server to which the UNIX symbolic link is pointing. |

cifs_symlink_mapping

ONTAP allows for both CIFS and NFS access to the same datastore. This datastore can contain symbolic links created by UNIX clients which can point anywhere from the perspective of the UNIX client. To Access such UNIX symlink from CIFS share, we need to create a CIFS symbolic link path mapping from a UNIX symlink and target it as a CIFS path.

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| svm | svm | |
| target | cifs_target | |

| Name | Type | Description |
|---|---|---|
| unix_path | string | Specifies the UNIX path prefix to be matched for the mapping. |

error_arguments

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

error

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

## Create a UNIX symbolic link mapping for a CIFS client

POST `/protocols/cifs/unix-symlink-mapping`

Creates a UNIX symbolic link mapping for a CIFS client.

### Required properties

- `svm.uuid` or `svm.name` - Existing SVM in which to create the CIFS unix-symlink-mapping.
- `unix_path` - UNIX path to which the CIFS symlink mapping to be created.
- `target.share` - CIFS share name on the destination CIFS server to which the UNIX symbolic link is pointing.
- `target.path` - CIFS path on the destination to which the symbolic link maps.

### Default property values

- `target.server` - *Local_NetBIOS_Server_Name*
- `locality` - *local*
- `home_directory` - *false*

### Related ONTAP commands

- `vserver cifs symlink create`

### Learn more

- DOC /protocols/cifs/unix-symlink-mapping

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| return_records | boolean | query | False | The default is false. If set to true, the records are returned. |

### Request Body

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| svm | svm | |
| target | cifs_target | |
| unix_path | string | Specifies the UNIX path prefix to be matched for the mapping. |

### Example request


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  },
  "target": {
    "locality": "string",
    "path": "/dir1/dir2/",
    "server": "ENGCIFS",
    "share": "ENG_SHARE"
  },
  "unix_path": "/mnt/eng_volume/"
}
```


### Response

```
Status: 201, Created
```

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

### Example response


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "svm": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "svm1",
        "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
      },
      "target": {
        "locality": "string",
        "path": "/dir1/dir2/",
        "server": "ENGCIFS",
        "share": "ENG_SHARE"
      },
      "unix_path": "/mnt/eng_volume/"
    }
  ]
}
```


### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 655654 | Must specify the target CIFS share while creating path mapping entries with localities "local" or "widelink" |
| 655572 | The target path contains illegal characters or is too long |
| 655574 | The target server contains illegal characters or is too long |
| 655436 | If the locality is "local", the target server must be blank or must match the CIFS NetBIOS name for given SVM |
| 655439 | The Specified target server is local CIFS server for given SVM but the locality is specified as "widelink" |
| 655546 | Failed to create symlink mapping becasue administrative share cannot be used as target share |
| 655437 | Failed to create the symlink mapping with locality "local" because the target share does not exist for specified SVM |
| 655429 | UNIX path must begin and end with a "/" |
| 655430 | Target path must begin and end with a "/" |
| 655399 | Failed to get the CIFS server for specified SVM |

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

**Example error**


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

## Definitions

**See Definitions**

href

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

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

svm

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

cifs_target

| Name | Type | Description |
|---|---|---|
| home_directory | boolean | Specify if the destination share is a home directory. |
| locality | string | Specifies whether the CIFS symbolic link is a local link or wide link. The following values are supported:<br>• local - Local symbolic link maps only to the same CIFS share.<br>• widelink - Wide symbolic link maps to any CIFS share on the network. |

| Name | Type | Description |
| --- | --- | --- |
| path | string | Specifies the CIFS path on the destination to which the symbolic link maps. The final path is generated by concatenating the CIFS server name, the share name, the cifs-path and the remaining path in the symbolic link left after the prefix match. This value is specified by using a UNIX-style path name. The trailing forward slash is required for the full path name to be properly interpreted. |
| server | string | Specifies the destination CIFS server where the UNIX symbolic link is pointing. This field is mandatory if the locality of the symbolic link is 'widelink'. You can specify the value in any of the following formats:<br>• DNS name of the CIFS server.<br>• IP address of the CIFS server.<br>• NetBIOS name of the CIFS server. |
| share | string | Specifies the CIFS share name on the destination CIFS server to which the UNIX symbolic link is pointing. |

cifs_symlink_mapping

ONTAP allows for both CIFS and NFS access to the same datastore. This datastore can contain symbolic links created by UNIX clients which can point anywhere from the perspective of the UNIX client. To Access such UNIX symlink from CIFS share, we need to create a CIFS symbolic link path mapping from a UNIX symlink and target it as a CIFS path.

| Name | Type | Description |
| --- | --- | --- |
| _links | _links | |
| svm | svm | |
| target | cifs_target | |

| Name | Type | Description |
|---|---|---|
| unix_path | string | Specifies the UNIX path prefix to be matched for the mapping. |

_links

| Name | Type | Description |
|---|---|---|
| next | href | |
| self | href | |

error_arguments

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

error

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

## Delete a UNIX symbolic link mapping for CIFS clients

DELETE `/protocols/cifs/unix-symlink-mapping/{svm.uuid}/{unix_path}`

Deletes the UNIX symbolic link mapping for CIFS clients.

### Related ONTAP commands

- `vserver cifs symlink delete`

### Learn more

- DOC /protocols/cifs/unix-symlink-mapping

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| unix_path | string | path | True | UNIX symbolic link path |

### Response

```
Status: 200, Ok
```

### 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**

error_arguments

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

error

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

## Retrieve a UNIX symbolic link mapping for CIFS clients

GET `/protocols/cifs/unix-symlink-mapping/{svm.uuid}/{unix_path}`

Retrieves a UNIX symbolic link mapping for CIFS clients.

### Related ONTAP commands

- `vserver cifs symlink show`

### Learn more

- DOC /protocols/cifs/unix-symlink-mapping

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| unix_path | string | path | True | UNIX symbolic link path |

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

### Response

```
Status: 200, Ok
```

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| svm | svm | |
| target | cifs_target | |
| unix_path | string | Specifies the UNIX path prefix to be matched for the mapping. |

### Example response


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  },
  "target": {
    "locality": "string",
    "path": "/dir1/dir2/",
    "server": "ENGCIFS",
    "share": "ENG_SHARE"
  },
  "unix_path": "/mnt/eng_volume/"
}
```

### 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 | |

svm

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

cifs_target

| Name | Type | Description |
|---|---|---|
| home_directory | boolean | Specify if the destination share is a home directory. |
| locality | string | Specifies whether the CIFS symbolic link is a local link or wide link. The following values are supported:<br>• local - Local symbolic link maps only to the same CIFS share.<br>• widelink - Wide symbolic link maps to any CIFS share on the network. |

| Name | Type | Description |
|---|---|---|
| path | string | Specifies the CIFS path on the destination to which the symbolic link maps. The final path is generated by concatenating the CIFS server name, the share name, the cifs-path and the remaining path in the symbolic link left after the prefix match. This value is specified by using a UNIX-style path name. The trailing forward slash is required for the full path name to be properly interpreted. |
| server | string | Specifies the destination CIFS server where the UNIX symbolic link is pointing. This field is mandatory if the locality of the symbolic link is 'widelink'. You can specify the value in any of the following formats:<br>• DNS name of the CIFS server.<br>• IP address of the CIFS server.<br>• NetBIOS name of the CIFS server. |
| share | string | Specifies the CIFS share name on the destination CIFS server to which the UNIX symbolic link is pointing. |

error_arguments

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

error

| Name | Type | Description |
|---|---|---|
| arguments | array[error_arguments] | Message arguments |

| Name | Type | Description |
|---|---|---|
| code | string | Error code |
| message | string | Error message |
| target | string | The target parameter that caused the error. |

## Update a UNIX symbolic link mapping for CIFS clients

PATCH `/protocols/cifs/unix-symlink-mapping/{svm.uuid}/{unix_path}`

Updates the UNIX symbolic link mapping for CIFS clients.

### Related ONTAP commands

- `vserver cifs symlink modify`

### Learn more

- DOC /protocols/cifs/unix-symlink-mapping

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| unix_path | string | path | True | UNIX symbolic link path |

### Request Body

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| svm | svm | |
| target | cifs_target | |

### Example request


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  },
  "target": {
    "locality": "string",
    "path": "/dir1/dir2/",
    "server": "ENGCIFS",
    "share": "ENG_SHARE"
  }
}
```


### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 655573 | Failed to modify the symlink mapping to target path because it contains illegal characters or is too long |
| 655575 | Failed to modify the symlink mapping to target server because it contains illegal characters or is too long |
| 655547 | Failed to modify symlink mapping becasue administrative share cannot be used as target share |

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

**Example error**


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


**Definitions**

**See Definitions**

href

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

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

svm

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

cifs_target

| Name | Type | Description |
|---|---|---|
| home_directory | boolean | Specify if the destination share is a home directory. |
| locality | string | Specifies whether the CIFS symbolic link is a local link or wide link. The following values are supported:<br>• local - Local symbolic link maps only to the same CIFS share.<br>• widelink - Wide symbolic link maps to any CIFS share on the network. |

| Name | Type | Description |
|---|---|---|
| path | string | Specifies the CIFS path on the destination to which the symbolic link maps. The final path is generated by concatenating the CIFS server name, the share name, the cifs-path and the remaining path in the symbolic link left after the prefix match. This value is specified by using a UNIX-style path name. The trailing forward slash is required for the full path name to be properly interpreted. |
| server | string | Specifies the destination CIFS server where the UNIX symbolic link is pointing. This field is mandatory if the locality of the symbolic link is 'widelink'. You can specify the value in any of the following formats:<br>• DNS name of the CIFS server.<br>• IP address of the CIFS server.<br>• NetBIOS name of the CIFS server. |
| share | string | Specifies the CIFS share name on the destination CIFS server to which the UNIX symbolic link is pointing. |

cifs_symlink_mapping

ONTAP allows for both CIFS and NFS access to the same datastore. This datastore can contain symbolic links created by UNIX clients which can point anywhere from the perspective of the UNIX client. To Access such UNIX symlink from CIFS share, we need to create a CIFS symbolic link path mapping from a UNIX symlink and target it as a CIFS path.

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| svm | svm | |
| target | cifs_target | |

error_arguments

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

error

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

# Manage FPolicy configuration

## Protocols fpolicy endpoint overview

### Overview

FPolicy is an infrastructure component of ONTAP that enables partner applications to connect to ONTAP in order to monitor and set file access permissions. Every time a client accesses a file from a storage system, based on the configuration of FPolicy, the partner application is notified about file access. This enables partners to set restrictions on files that are created or accessed on the storage system. FPolicy also allows you to create file policies that specify file operation permissions according to file type. For example, you can restrict certain file types, such as .jpeg and .mp3 files, from being stored on the storage system. FPolicy can monitor file access from CIFS and NFS clients.

As part of FPolicy configuration, you can specify an FPolicy engine which defines the external FPolicy server, FPolicy events, which defines the protocol and file operations to monitor and the FPolicy policy that acts as a container for the FPolicy engine and FPolicy events. It provides a way for policy management functions, such as policy enabling and disabling.

### Examples

#### Creating an FPolicy configuration

To create an FPolicy for an SVM use the following API. Note that the *return_records=true* query parameter is used to obtain the newly created entry in the response.

```
# The API:
POST /protocols/fpolicy/
```

```
#The call:
curl -X POST "https://<mgmt-ip>/api/protocols/fpolicy?return_records=tre"
-H "accept: application/json" -H "Content-Type: application/json" -d "{
\"engines\": [ { \"name\": \"engine1\", \"port\": 9876,
\"primary_servers\": [ \"10.132.145.22\", \"10.140.101.109\" ],
\"secondary_servers\": [ \"10.132.145.20\", \"10.132.145.21\" ], \"type\":
\"synchronous\" } ], \"events\": [ { \"file_operations\": { \"read\":
true, \"write\": true }, \"filters\": { \"monitor_ads\": true }, \"name\":
\"event_cifs\", \"protocol\": \"cifs\", \"volume_monitoring\": true } ],
\"policies\": [ { \"engine\": { \"name\": \"engine1\" }, \"events\": [
\"event_cifs\" ], \"mandatory\": true, \"name\": \"pol0\", \"priority\":
1, \"scope\": { \"include_volumes\": [ \"vol1\" ] } } ], \"svm\": {
\"name\": \"vs1\", \"uuid\": \"b34f5e3d-01d0-11e9-8f63-0050568ea311\" }}"

# The response:
{
"num_records": 1,
"records": [
  {
    "svm": {
      "uuid": "b34f5e3d-01d0-11e9-8f63-0050568ea311",
      "name": "vs1"
    },
    "engines": [
      {
        "name": "engine1",
        "primary_servers": [
          "10.132.145.22",
          "10.140.101.109"
        ],
        "secondary_servers": [
          "10.132.145.20",
          "10.132.145.21"
        ],
        "type": "synchronous",
        "port": 9876
      }
    ],
      "events": [
      {
        "name": "event_cifs",
        "protocol": "cifs",
        "volume_monitoring": true,
        "file_operations": {
          "read": true,
          "write": true
```

```
        },
        "filters": {
          "monitor_ads": true
        }
      }
    ],
    "policies": [
      {
        "name": "pol0",
        "priority": 1,
        "events": [
          {
            "name": "event_cifs"
          }
        ],
        "engine": {
          "name": "engine1"
        },
        "scope": {
          "include_volumes": [
            "vol1"
          ]
        },
        "mandatory": true
      }
    ]
  }
]
}
```

#### Retrieving the FPolicy configuration for all the SVMs in the cluster

```
# The API:
GET /protocols/fpolicy

# The call:
curl -X GET "https://<mgmt-
ip>/api/protocols/fpolicy?fields=*&return_records=true&return_timeout=15"
-H "accept: application/json"

# The response:
{
```

```
"records": [
  {
    "svm": {
      "uuid": "b34f5e3d-01d0-11e9-8f63-0050568ea311",
      "name": "vs1"
    },
    "engines": [
      {
        "name": "engine1",
        "primary_servers": [
          "10.132.145.22",
          "10.140.101.109"
        ],
        "secondary_servers": [
          "10.132.145.20",
          "10.132.145.21"
        ],
        "type": "synchronous",
        "port": 9876
      }
    ],
    "events": [
      {
        "name": "event_cifs",
        "protocol": "cifs",
        "volume_monitoring": true,
        "file_operations": {
          "close": false,
          "create": false,
          "create_dir": false,
          "delete": false,
          "delete_dir": false,
          "getattr": false,
          "link": false,
          "lookup": false,
          "open": false,
          "read": true,
          "write": true,
          "rename": false,
          "rename_dir": false,
          "setattr": false,
          "symlink": false
        },
        "filters": {
          "monitor_ads": true,
          "close_with_modification": false,
```

```
          "close_without_modification": false,
          "close_with_read": false,
          "first_read": false,
          "first_write": false,
          "offline_bit": false,
          "open_with_delete_intent": false,
          "open_with_write_intent": false,
          "write_with_size_change": false,
          "setattr_with_owner_change": false,
          "setattr_with_group_change": false,
          "setattr_with_sacl_change": false,
          "setattr_with_dacl_change": false,
          "setattr_with_modify_time_change": false,
          "setattr_with_access_time_change": false,
          "setattr_with_creation_time_change": false,
          "setattr_with_mode_change": false,
          "setattr_with_size_change": false,
          "setattr_with_allocation_size_change": false,
          "exclude_directory": false
        }
      }
    ],
    "policies": [
      {
        "name": "pol0",
        "enabled": true,
        "priority": 1,
        "events": [
          {
            "name": "event_cifs"
          }
        ],
        "engine": {
          "name": "engine1"
        },
        "scope": {
          "include_volumes": [
            "vol1"
          ]
        },
        "mandatory": true
      }
    ]
  }
],
"num_records": 1
```

```
}
```

#### Retrieving an FPolicy configuration for a particular SVM

```
# The API:
GET /protocols/fpolicy/{svm.uuid}

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/fpolicy/b34f5e3d-01d0-11e9-
8f63-0050568ea311?fields=*&return_records=true&return_timeout=15" -H
"accept: application/json"

# The response:
{
"svm": {
  "uuid": "b34f5e3d-01d0-11e9-8f63-0050568ea311",
  "name": "vs1"
},
"engines": [
  {
    "name": "engine1",
    "primary_servers": [
      "10.132.145.22",
      "10.140.101.109"
    ],
    "secondary_servers": [
      "10.132.145.20",
      "10.132.145.21"
    ],
    "type": "synchronous",
    "port": 9876
  }
],
"events": [
  {
    "name": "event_cifs",
    "protocol": "cifs",
    "volume_monitoring": true,
    "file_operations": {
      "close": false,
      "create": false,
      "create_dir": false,
```

```
      "delete": false,
      "delete_dir": false,
      "getattr": false,
      "link": false,
      "lookup": false,
      "open": false,
      "read": true,
      "write": true,
      "rename": false,
      "rename_dir": false,
      "setattr": false,
      "symlink": false
    },
    "filters": {
      "monitor_ads": true,
      "close_with_modification": false,
      "close_without_modification": false,
      "close_with_read": false,
      "first_read": false,
      "first_write": false,
      "offline_bit": false,
      "open_with_delete_intent": false,
      "open_with_write_intent": false,
      "write_with_size_change": false,
      "setattr_with_owner_change": false,
      "setattr_with_group_change": false,
      "setattr_with_sacl_change": false,
      "setattr_with_dacl_change": false,
      "setattr_with_modify_time_change": false,
      "setattr_with_access_time_change": false,
      "setattr_with_creation_time_change": false,
      "setattr_with_mode_change": false,
      "setattr_with_size_change": false,
      "setattr_with_allocation_size_change": false,
      "exclude_directory": false
    }
  }
],
"policies": [
  {
    "name": "pol0",
    "enabled": true,
    "priority": 1,
    "events": [
      {
        "name": "event_cifs"
```

```
      }
    ],
    "engine": {
      "name": "engine1"
    },
    "scope": {
      "include_volumes": [
        "vol1"
      ]
    },
    "mandatory": true
  }
]
}
```

#### Deleting an FPolicy configuration for a particular SVM

```
# The API:
DELETE /protocols/fpolicy/{svm.uuid}

# The call:
curl -X DELETE "https://<mgmt-ip>/api/protocols/fpolicy/b34f5e3d-01d0-
11e9-8f63-0050568ea311" -H "accept: application/json"
```

## Retrieve an FPolicy configuration

GET `/protocols/fpolicy`

Retrieves an FPolicy configuration.

#### Related ONTAP commands

- `fpolicy show`
- `fpolicy policy show`
- `fpolicy policy scope show`
- `fpolicy policy event show`
- `fpolicy policy external-engine show`

### Learn more

- DOC /protocols/fpolicy

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | query | False | Filter by svm.uuid |
| svm.name | string | query | False | Filter by svm.name |
| policies.enabled | boolean | query | False | Filter by policies.enabled |
| policies.priority | integer | query | False | Filter by policies.priority |
| policies.scope.include_shares | string | query | False | Filter by policies.scope.include_shares |
| policies.scope.exclude_export_policies | string | query | False | Filter by policies.scope.exclude_export_policies |
| policies.scope.exclude_volumes | string | query | False | Filter by policies.scope.exclude_volumes |
| policies.scope.exclude_extension | string | query | False | Filter by policies.scope.exclude_extension |
| policies.scope.exclude_shares | string | query | False | Filter by policies.scope.exclude_shares |
| policies.scope.include_export_policies | string | query | False | Filter by policies.scope.include_export_policies |
| policies.scope.include_volumes | string | query | False | Filter by policies.scope.include_volumes |
| policies.scope.include_extension | string | query | False | Filter by policies.scope.include_extension |

| Name | Type | In | Required | Description |
| --- | --- | --- | --- | --- |
| policies.events.name | string | query | False | Filter by policies.events.name |
| policies.name | string | query | False | Filter by policies.name |
| policies.engine.name | string | query | False | Filter by policies.engine.name |
| policies.mandatory | boolean | query | False | Filter by policies.mandatory |
| events.name | string | query | False | Filter by events.name |
| events.volume_monitoring | boolean | query | False | Filter by events.volume_monitoring |
| events.filters.setattr_with_modify_time_change | boolean | query | False | Filter by events.filters.setattr_with_modify_time_change |
| events.filters.first_read | boolean | query | False | Filter by events.filters.first_read |
| events.filters.exclude_directory | boolean | query | False | Filter by events.filters.exclude_directory |
| events.filters.offline_bit | boolean | query | False | Filter by events.filters.offline_bit |
| events.filters.write_with_size_change | boolean | query | False | Filter by events.filters.write_with_size_change |
| events.filters.setattr_with_group_change | boolean | query | False | Filter by events.filters.setattr_with_group_change |

| Name | Type | In | Required | Description |
| --- | --- | --- | --- | --- |
| events.filters.setattr_with_dacl_change | boolean | query | False | Filter by events.filters.setattr_with_dacl_change |
| events.filters.setattr_with_mode_change | boolean | query | False | Filter by events.filters.setattr_with_mode_change |
| events.filters.open_with_write_intent | boolean | query | False | Filter by events.filters.open_with_write_intent |
| events.filters.setattr_with_access_time_change | boolean | query | False | Filter by events.filters.setattr_with_access_time_change |
| events.filters.setattr_with_sacl_change | boolean | query | False | Filter by events.filters.setattr_with_sacl_change |
| events.filters.setattr_with_size_change | boolean | query | False | Filter by events.filters.setattr_with_size_change |
| events.filters.first_write | boolean | query | False | Filter by events.filters.first_write |
| events.filters.setattr_with_owner_change | boolean | query | False | Filter by events.filters.setattr_with_owner_change |
| events.filters.close_with_modification | boolean | query | False | Filter by events.filters.close_with_modification |
| events.filters.open_with_delete_intent | boolean | query | False | Filter by events.filters.open_with_delete_intent |
| events.filters.monitor_ads | boolean | query | False | Filter by events.filters.monitor_ads |

| Name | Type | In | Required | Description |
| --- | --- | --- | --- | --- |
| events.filters.close_without_modification | boolean | query | False | Filter by events.filters.close_without_modification |
| events.filters.close_with_read | boolean | query | False | Filter by events.filters.close_with_read |
| events.filters.setattr_with_creation_time_change | boolean | query | False | Filter by events.filters.setattr_with_creation_time_change |
| events.filters.setattr_with_allocation_size_change | boolean | query | False | Filter by events.filters.setattr_with_allocation_size_change |
| events.file_operations.close | boolean | query | False | Filter by events.file_operations.close |
| events.file_operations.create | boolean | query | False | Filter by events.file_operations.create |
| events.file_operations.rename_dir | boolean | query | False | Filter by events.file_operations.rename_dir |
| events.file_operations.setattr | boolean | query | False | Filter by events.file_operations.setattr |
| events.file_operations.delete_dir | boolean | query | False | Filter by events.file_operations.delete_dir |
| events.file_operations.read | boolean | query | False | Filter by events.file_operations.read |
| events.file_operations.open | boolean | query | False | Filter by events.file_operations.open |

| Name | Type | In | Required | Description |
| --- | --- | --- | --- | --- |
| events.file_operations.rename | boolean | query | False | Filter by events.file_operations.rename |
| events.file_operations.delete | boolean | query | False | Filter by events.file_operations.delete |
| events.file_operations.getattr | boolean | query | False | Filter by events.file_operations.getattr |
| events.file_operations.symlink | boolean | query | False | Filter by events.file_operations.symlink |
| events.file_operations.create_dir | boolean | query | False | Filter by events.file_operations.create_dir |
| events.file_operations.link | boolean | query | False | Filter by events.file_operations.link |
| events.file_operations.write | boolean | query | False | Filter by events.file_operations.write |
| events.file_operations.lookup | boolean | query | False | Filter by events.file_operations.lookup |
| events.protocol | string | query | False | Filter by events.protocol |
| engines.name | string | query | False | Filter by engines.name |
| engines.type | string | query | False | Filter by engines.type |
| engines.secondary_servers | string | query | False | Filter by engines.secondary_servers |

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

**Response**

```
Status: 200, Ok
```

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| num_records | integer | Number of records |

| Name | Type | Description |
| --- | --- | --- |
| records | array[fpolicy] | |

**Example response**


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "engines": [
        {
          "name": "fp_ex_eng",
          "port": 9876,
          "primary_servers": [
            "10.132.145.20",
            "10.140.101.109"
          ],
          "secondary_servers": [
            "10.132.145.20",
            "10.132.145.21"
          ],
          "type": "string"
        }
      ],
      "events": [
        {
          "name": "event_nfs_close",
          "protocol": "string"
        }
      ],
      "policies": [
        {
          "engine": {
            "_links": {
              "self": {
                "href": "/api/resourcelink"
              }
```

```
        },
        "name": "string"
      },
      "events": [
        "event_nfs_close",
        "event_open"
      ],
      "name": "fp_policy_1",
      "scope": {
        "exclude_export_policies": [
          "string"
        ],
        "exclude_extension": [
          "string"
        ],
        "exclude_shares": [
          "string"
        ],
        "exclude_volumes": [
          "vol1",
          "vol_svm1",
          "*"
        ],
        "include_export_policies": [
          "string"
        ],
        "include_extension": [
          "string"
        ],
        "include_shares": [
          "sh1",
          "share_cifs"
        ],
        "include_volumes": [
          "vol1",
          "vol_svm1"
        ]
      }
    }
  ],
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
```

```
        "name": "svm1",
        "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
      }
    }
  ]
}
```


### 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 |
|---|---|---|
| next | href | |
| self | href | |

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

fpolicy_engine

The engine defines how ONTAP makes and manages connections to external FPolicy servers.

| Name | Type | Description |
|---|---|---|
| name | string | Specifies the name to assign to the external server configuration. |
| port | integer | Port number of the FPolicy server application. |
| primary_servers | array[string] | |
| secondary_servers | array[string] | |

| Name | Type | Description |
| --- | --- | --- |
| type | string | The notification mode determines what ONTAP does after sending notifications to FPolicy servers. The possible values are:<br>• synchronous - After sending a notification, wait for a response from the FPolicy server.<br>• asynchronous - After sending a notification, file request processing continues.<br>◦ Default value: 1<br>◦ enum: ["synchronous", "asynchronous"] |

file_operations

Specifies the file operations for the FPolicy event. You must specify a valid protocol in the protocol parameter. The event will check the operations specified from all client requests using the protocol.

| Name | Type | Description |
| --- | --- | --- |
| close | boolean | File close operations |
| create | boolean | File create operations |
| create_dir | boolean | Directory create operations |
| delete | boolean | File delete operations |
| delete_dir | boolean | Directory delete operations |
| getattr | boolean | Get attribute operations |
| link | boolean | Link operations |
| lookup | boolean | Lookup operations |
| open | boolean | File open operations |
| read | boolean | File read operations |
| rename | boolean | File rename operations |

| Name | Type | Description |
|---|---|---|
| rename_dir | boolean | Directory rename operations |
| setattr | boolean | Set attribute operations |
| symlink | boolean | Symbolic link operations |
| write | boolean | File write operations |

filters

Specifies the list of filters for a given file operation for the specified protocol. When you specify the filters, you must specify the valid protocols and a valid file operations.

| Name | Type | Description |
|---|---|---|
| close_with_modification | boolean | Filter the client request for close with modification. |
| close_with_read | boolean | Filter the client request for close with read. |
| close_without_modification | boolean | Filter the client request for close without modification. |
| exclude_directory | boolean | Filter the client requests for directory operations. When this filter is specified directory operations are not monitored. |
| first_read | boolean | Filter the client requests for the first-read. |
| first_write | boolean | Filter the client requests for the first-write. |
| monitor_ads | boolean | Filter the client request for alternate data stream. |
| offline_bit | boolean | Filter the client request for offline bit set. FPolicy server receives notification only when offline files are accessed. |
| open_with_delete_intent | boolean | Filter the client request for open with delete intent. |

| Name | Type | Description |
| --- | --- | --- |
| open_with_write_intent | boolean | Filter the client request for open with write intent. |
| setattr_with_access_time_change | boolean | Filter the client setattr requests for changing the access time of a file or directory. |
| setattr_with_allocation_size_change | boolean | Filter the client setattr requests for changing the allocation size of a file. |
| setattr_with_creation_time_change | boolean | Filter the client setattr requests for changing the creation time of a file or directory. |
| setattr_with_dacl_change | boolean | Filter the client setattr requests for changing dacl on a file or directory. |
| setattr_with_group_change | boolean | Filter the client setattr requests for changing group of a file or directory. |
| setattr_with_mode_change | boolean | Filter the client setattr requests for changing the mode bits on a file or directory. |
| setattr_with_modify_time_change | boolean | Filter the client setattr requests for changing the modification time of a file or directory. |
| setattr_with_owner_change | boolean | Filter the client setattr requests for changing owner of a file or directory. |
| setattr_with_sacl_change | boolean | Filter the client setattr requests for changing sacl on a file or directory. |
| setattr_with_size_change | boolean | Filter the client setattr requests for changing the size of a file. |
| write_with_size_change | boolean | Filter the client request for write with size change. |

fpolicy_event

The information that a FPolicy process needs to determine what file access operations to monitor and for which of the monitored events notifications should be sent to the external FPolicy server.

| Name | Type | Description |
|---|---|---|
| file_operations | file_operations | Specifies the file operations for the FPolicy event. You must specify a valid protocol in the protocol parameter. The event will check the operations specified from all client requests using the protocol. |
| filters | filters | Specifies the list of filters for a given file operation for the specified protocol. When you specify the filters, you must specify the valid protocols and a valid file operations. |
| name | string | Specifies the name of the FPolicy event. |
| protocol | string | Protocol for which event is created. If you specify protocol, then you must also specify a valid value for the file operation parameters. The value of this parameter must be one of the following:<br>• cifs - for the CIFS protocol.<br>• nfsv3 - for the NFSv3 protocol.<br>• nfsv4 - for the NFSv4 protocol. |
| volume_monitoring | boolean | Specifies whether volume operation monitoring is required. |

fpolicy_engine_reference

FPolicy external engine

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | The name of the FPolicy external engine. |

fpolicy_event_reference

FPolicy events

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | |

scope

| Name | Type | Description |
|---|---|---|
| exclude_export_policies | array[string] | |
| exclude_extension | array[string] | |
| exclude_shares | array[string] | |
| exclude_volumes | array[string] | |
| include_export_policies | array[string] | |
| include_extension | array[string] | |
| include_shares | array[string] | |
| include_volumes | array[string] | |

fpolicy_policy

| Name | Type | Description |
|---|---|---|
| enabled | boolean | Specifies if the policy is enabled on the SVM or not. If no value is mentioned for this field but priority is set, then this policy will be enabled. |
| engine | fpolicy_engine_reference | FPolicy external engine |
| events | array[fpolicy_event_reference] | |
| mandatory | boolean | Specifies what action to take on a file access event in a case when all primary and secondary servers are down or no response is received from the FPolicy servers within a given timeout period. When this parameter is set to true, file access events will be denied under these circumstances. |
| name | string | Specifies the name of the policy. |

| Name | Type | Description |
|---|---|---|
| priority | integer | Specifies the priority that is assigned to this policy. |
| scope | scope | |

svm

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

fpolicy

FPolicy is an infrastructure component of ONTAP that enables partner applications connected to your storage systems to monitor and set file access permissions. Every time a client accesses a file from a storage system, based on the configuration of FPolicy, the partner application is notified about file access.

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| engines | array[fpolicy_engine] | |
| events | array[fpolicy_event] | |
| policies | array[fpolicy_policy] | |
| svm | svm | |

error_arguments

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

error

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

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

## Create an FPolicy configuration

POST `/protocols/fpolicy`

Creates an FPolicy configuration.

### Required properties

- `svm.uuid` or `svm.name` - Existing SVM in which to create the FPolicy configuration.

### Recommended optional properties

- `engines` - External server to which the notifications will be sent.
- `events` - File operations to monitor.
- `policies` - Policy configuration which acts as a container for FPolicy event and FPolicy engine.
- `scope` - Scope of the policy. Can be limited to exports, volumes, shares or file extensions.

### Default property values

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

- `engines.type` - *synchronous*
- `policies.engine` - *native*
- `policies.mandatory` - *true*
- `events.volume_monitoring` - *false*
- `events.file_operations.*` - *false*
- `events.filters.*` - *false*

### Related ONTAP commands

- `fpolicy policy event create`
- `fpolicy policy external-engine create`
- `fpolicy policy create`
- `fpolicy policy scope create`
- `fpolicy enable`

### Learn more

- DOC /protocols/fpolicy

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| return_records | boolean | query | False | The default is false. If set to true, the records are returned. |

### Request Body

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| engines | array[fpolicy_engine] | |
| events | array[fpolicy_event] | |
| policies | array[fpolicy_policy] | |
| svm | svm | |

**Example request**


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "engines": [
    {
      "name": "fp_ex_eng",
      "port": 9876,
      "primary_servers": [
        "10.132.145.20",
        "10.140.101.109"
      ],
      "secondary_servers": [
        "10.132.145.20",
        "10.132.145.21"
      ],
      "type": "string"
    }
  ],
  "events": [
    {
      "name": "event_nfs_close",
      "protocol": "string"
    }
  ],
  "policies": [
    {
      "enabled": null,
      "engine": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "string"
      },
      "events": [
        "event_nfs_close",
        "event_open"
      ],
      "name": "fp_policy_1",
      "scope": {
```

```
        "exclude_export_policies": [
          "string"
        ],
        "exclude_extension": [
          "string"
        ],
        "exclude_shares": [
          "string"
        ],
        "exclude_volumes": [
          "vol1",
          "vol_svm1",
          "*"
        ],
        "include_export_policies": [
          "string"
        ],
        "include_extension": [
          "string"
        ],
        "include_shares": [
          "sh1",
          "share_cifs"
        ],
        "include_volumes": [
          "vol1",
          "vol_svm1"
        ]
      }
    }
  ],
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  }
}
```

**Response**

```
Status: 201, Created
```

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

**Example response**


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "engines": [
        {
          "name": "fp_ex_eng",
          "port": 9876,
          "primary_servers": [
            "10.132.145.20",
            "10.140.101.109"
          ],
          "secondary_servers": [
            "10.132.145.20",
            "10.132.145.21"
          ],
          "type": "string"
        }
      ],
      "events": [
        {
          "name": "event_nfs_close",
          "protocol": "string"
        }
      ],
      "policies": [
        {
          "enabled": null,
          "engine": {
            "_links": {
              "self": {
                "href": "/api/resourcelink"
```

```
            }
          },
          "name": "string"
        },
        "events": [
          "event_nfs_close",
          "event_open"
        ],
        "name": "fp_policy_1",
        "scope": {
          "exclude_export_policies": [
            "string"
          ],
          "exclude_extension": [
            "string"
          ],
          "exclude_shares": [
            "string"
          ],
          "exclude_volumes": [
            "vol1",
            "vol_svm1",
            "*"
          ],
          "include_export_policies": [
            "string"
          ],
          "include_extension": [
            "string"
          ],
          "include_shares": [
            "sh1",
            "share_cifs"
          ],
          "include_volumes": [
            "vol1",
            "vol_svm1"
          ]
        }
      }
    ],
    "svm": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
```

```
        },
        "name": "svm1",
        "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
      }
    }
  ]
}
```


### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 9765032 | The FPolicy engine, FPolicy event or FPolicy policy specified already exists |
| 9765031 | If any of the FPolicy engine, FPolicy event, or FPolicy policy creation fails due to a systematic error or hardware failure, the cause of the failure is detailed in the error message |
| 2621706 | The SVM UUID specified belongs to different SVM |
| 2621462 | The SVM name specified does not exist |

| 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 | |

fpolicy_engine

The engine defines how ONTAP makes and manages connections to external FPolicy servers.

| Name | Type | Description |
|---|---|---|
| name | string | Specifies the name to assign to the external server configuration. |
| port | integer | Port number of the FPolicy server application. |
| primary_servers | array[string] | |
| secondary_servers | array[string] | |
| type | string | The notification mode determines what ONTAP does after sending notifications to FPolicy servers. The possible values are:<br>• synchronous - After sending a notification, wait for a response from the FPolicy server.<br>• asynchronous - After sending a notification, file request processing continues.<br>◦ Default value: 1<br>◦ enum: ["synchronous", "asynchronous"] |

file_operations

Specifies the file operations for the FPolicy event. You must specify a valid protocol in the protocol parameter. The event will check the operations specified from all client requests using the protocol.

| Name | Type | Description |
|---|---|---|
| close | boolean | File close operations |
| create | boolean | File create operations |
| create_dir | boolean | Directory create operations |
| delete | boolean | File delete operations |
| delete_dir | boolean | Directory delete operations |
| getattr | boolean | Get attribute operations |
| link | boolean | Link operations |
| lookup | boolean | Lookup operations |
| open | boolean | File open operations |
| read | boolean | File read operations |
| rename | boolean | File rename operations |
| rename_dir | boolean | Directory rename operations |
| setattr | boolean | Set attribute operations |
| symlink | boolean | Symbolic link operations |
| write | boolean | File write operations |

filters

Specifies the list of filters for a given file operation for the specified protocol. When you specify the filters, you must specify the valid protocols and a valid file operations.

| Name | Type | Description |
|---|---|---|
| close_with_modification | boolean | Filter the client request for close with modification. |
| close_with_read | boolean | Filter the client request for close with read. |

| Name | Type | Description |
| --- | --- | --- |
| close_without_modification | boolean | Filter the client request for close without modification. |
| exclude_directory | boolean | Filter the client requests for directory operations. When this filter is specified directory operations are not monitored. |
| first_read | boolean | Filter the client requests for the first-read. |
| first_write | boolean | Filter the client requests for the first-write. |
| monitor_ads | boolean | Filter the client request for alternate data stream. |
| offline_bit | boolean | Filter the client request for offline bit set. FPolicy server receives notification only when offline files are accessed. |
| open_with_delete_intent | boolean | Filter the client request for open with delete intent. |
| open_with_write_intent | boolean | Filter the client request for open with write intent. |
| setattr_with_access_time_change | boolean | Filter the client setattr requests for changing the access time of a file or directory. |
| setattr_with_allocation_size_change | boolean | Filter the client setattr requests for changing the allocation size of a file. |
| setattr_with_creation_time_change | boolean | Filter the client setattr requests for changing the creation time of a file or directory. |
| setattr_with_dacl_change | boolean | Filter the client setattr requests for changing dacl on a file or directory. |
| setattr_with_group_change | boolean | Filter the client setattr requests for changing group of a file or directory. |

| Name | Type | Description |
| --- | --- | --- |
| setattr_with_mode_change | boolean | Filter the client setattr requests for changing the mode bits on a file or directory. |
| setattr_with_modify_time_change | boolean | Filter the client setattr requests for changing the modification time of a file or directory. |
| setattr_with_owner_change | boolean | Filter the client setattr requests for changing owner of a file or directory. |
| setattr_with_sacl_change | boolean | Filter the client setattr requests for changing sacl on a file or directory. |
| setattr_with_size_change | boolean | Filter the client setattr requests for changing the size of a file. |
| write_with_size_change | boolean | Filter the client request for write with size change. |

fpolicy_event

The information that a FPolicy process needs to determine what file access operations to monitor and for which of the monitored events notifications should be sent to the external FPolicy server.

| Name | Type | Description |
| --- | --- | --- |
| file_operations | file_operations | Specifies the file operations for the FPolicy event. You must specify a valid protocol in the protocol parameter. The event will check the operations specified from all client requests using the protocol. |
| filters | filters | Specifies the list of filters for a given file operation for the specified protocol. When you specify the filters, you must specify the valid protocols and a valid file operations. |
| name | string | Specifies the name of the FPolicy event. |

| Name | Type | Description |
|---|---|---|
| protocol | string | Protocol for which event is created. If you specify protocol, then you must also specify a valid value for the file operation parameters. The value of this parameter must be one of the following:<br>• cifs - for the CIFS protocol.<br>• nfsv3 - for the NFSv3 protocol.<br>• nfsv4 - for the NFSv4 protocol. |
| volume_monitoring | boolean | Specifies whether volume operation monitoring is required. |

fpolicy_engine_reference

FPolicy external engine

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | The name of the FPolicy external engine. |

fpolicy_event_reference

FPolicy events

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | |

scope

| Name | Type | Description |
|---|---|---|
| exclude_export_policies | array[string] | |
| exclude_extension | array[string] | |
| exclude_shares | array[string] | |
| exclude_volumes | array[string] | |
| include_export_policies | array[string] | |

| Name | Type | Description |
|---|---|---|
| include_extension | array[string] | |
| include_shares | array[string] | |
| include_volumes | array[string] | |

fpolicy_policy

| Name | Type | Description |
|---|---|---|
| engine | fpolicy_engine_reference | FPolicy external engine |
| events | array[fpolicy_event_reference] | |
| mandatory | boolean | Specifies what action to take on a file access event in a case when all primary and secondary servers are down or no response is received from the FPolicy servers within a given timeout period. When this parameter is set to true, file access events will be denied under these circumstances. |
| name | string | Specifies the name of the policy. |
| priority | integer | Specifies the priority that is assigned to this policy. |
| scope | scope | |

svm

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

fpolicy

FPolicy is an infrastructure component of ONTAP that enables partner applications connected to your storage systems to monitor and set file access permissions. Every time a client accesses a file from a storage system, based on the configuration of FPolicy, the partner application is notified about file access.

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

| Name | Type | Description |
|---|---|---|
| engines | array[fpolicy_engine] | |
| events | array[fpolicy_event] | |
| policies | array[fpolicy_policy] | |
| svm | svm | |

_links

| Name | Type | Description |
|---|---|---|
| next | href | |
| self | href | |

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 the FPolicy configuration for an SVM

DELETE `/protocols/fpolicy/{svm.uuid}`

Deletes the FPolicy configuration for the specified SVM. Before deleting the FPolicy configuration, ensure that all policies belonging to the SVM are disabled.

### Related ONTAP commands

- `fpolicy delete`
- `fpolicy policy scope delete`

- `fpolicy policy delete`
- `fpolicy policy event delete`
- `fpolicy policy external-engine delete`

### Learn more

- DOC /protocols/fpolicy

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |

### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 9765030 | Cannot delete an FPolicy configuration if any of the policy is enabled |
| 9765031 | If any of the FPolicy engine, FPolicy event or FPolicy policy deletion fails due to a systemic error or hardware failure, the cause of the failure is detailed in the error message. |

| 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 the FPolicy configuration for an SVM

GET `/protocols/fpolicy/{svm.uuid}`

Retrieves an FPolicy configuration of an SVM.

### Related ONTAP commands

- `fpolicy show`
- `fpolicy policy show`
- `fpolicy policy scope show`
- `fpolicy policy event show`
- `fpolicy policy external-engine show`

### Learn more

- DOC /protocols/fpolicy

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| fields | array[string] | query | False | Specify the fields to return. |

### Response

```
Status: 200, Ok
```

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| engines | array[fpolicy_engine] | |
| events | array[fpolicy_event] | |
| policies | array[fpolicy_policy] | |
| svm | svm | |

**Example response**


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "engines": [
    {
      "name": "fp_ex_eng",
      "port": 9876,
      "primary_servers": [
        "10.132.145.20",
        "10.140.101.109"
      ],
      "secondary_servers": [
        "10.132.145.20",
        "10.132.145.21"
      ],
      "type": "string"
    }
  ],
  "events": [
    {
      "name": "event_nfs_close",
      "protocol": "string"
    }
  ],
  "policies": [
    {
      "engine": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "string"
      },
      "events": [
        "event_nfs_close",
        "event_open"
      ],
      "name": "fp_policy_1",
      "scope": {
        "exclude_export_policies": [
```

```
          "string"
        ],
        "exclude_extension": [
          "string"
        ],
        "exclude_shares": [
          "string"
        ],
        "exclude_volumes": [
          "vol1",
          "vol_svm1",
          "*"
        ],
        "include_export_policies": [
          "string"
        ],
        "include_extension": [
          "string"
        ],
        "include_shares": [
          "sh1",
          "share_cifs"
        ],
        "include_volumes": [
          "vol1",
          "vol_svm1"
        ]
      }
    }
  ],
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  }
}
```


### 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 | |

fpolicy_engine

The engine defines how ONTAP makes and manages connections to external FPolicy servers.

| Name | Type | Description |
|---|---|---|
| name | string | Specifies the name to assign to the external server configuration. |
| port | integer | Port number of the FPolicy server application. |
| primary_servers | array[string] | |
| secondary_servers | array[string] | |
| type | string | The notification mode determines what ONTAP does after sending notifications to FPolicy servers. The possible values are:<br>• synchronous - After sending a notification, wait for a response from the FPolicy server.<br>• asynchronous - After sending a notification, file request processing continues.<br>◦ Default value: 1<br>◦ enum: ["synchronous", "asynchronous"] |

file_operations

Specifies the file operations for the FPolicy event. You must specify a valid protocol in the protocol parameter. The event will check the operations specified from all client requests using the protocol.

| Name | Type | Description |
|---|---|---|
| close | boolean | File close operations |
| create | boolean | File create operations |
| create_dir | boolean | Directory create operations |
| delete | boolean | File delete operations |
| delete_dir | boolean | Directory delete operations |
| getattr | boolean | Get attribute operations |
| link | boolean | Link operations |
| lookup | boolean | Lookup operations |
| open | boolean | File open operations |
| read | boolean | File read operations |
| rename | boolean | File rename operations |
| rename_dir | boolean | Directory rename operations |
| setattr | boolean | Set attribute operations |
| symlink | boolean | Symbolic link operations |
| write | boolean | File write operations |

filters

Specifies the list of filters for a given file operation for the specified protocol. When you specify the filters, you must specify the valid protocols and a valid file operations.

| Name | Type | Description |
|---|---|---|
| close_with_modification | boolean | Filter the client request for close with modification. |
| close_with_read | boolean | Filter the client request for close with read. |

| Name | Type | Description |
| --- | --- | --- |
| close_without_modification | boolean | Filter the client request for close without modification. |
| exclude_directory | boolean | Filter the client requests for directory operations. When this filter is specified directory operations are not monitored. |
| first_read | boolean | Filter the client requests for the first-read. |
| first_write | boolean | Filter the client requests for the first-write. |
| monitor_ads | boolean | Filter the client request for alternate data stream. |
| offline_bit | boolean | Filter the client request for offline bit set. FPolicy server receives notification only when offline files are accessed. |
| open_with_delete_intent | boolean | Filter the client request for open with delete intent. |
| open_with_write_intent | boolean | Filter the client request for open with write intent. |
| setattr_with_access_time_change | boolean | Filter the client setattr requests for changing the access time of a file or directory. |
| setattr_with_allocation_size_change | boolean | Filter the client setattr requests for changing the allocation size of a file. |
| setattr_with_creation_time_change | boolean | Filter the client setattr requests for changing the creation time of a file or directory. |
| setattr_with_dacl_change | boolean | Filter the client setattr requests for changing dacl on a file or directory. |
| setattr_with_group_change | boolean | Filter the client setattr requests for changing group of a file or directory. |

| Name | Type | Description |
| --- | --- | --- |
| setattr_with_mode_change | boolean | Filter the client setattr requests for changing the mode bits on a file or directory. |
| setattr_with_modify_time_change | boolean | Filter the client setattr requests for changing the modification time of a file or directory. |
| setattr_with_owner_change | boolean | Filter the client setattr requests for changing owner of a file or directory. |
| setattr_with_sacl_change | boolean | Filter the client setattr requests for changing sacl on a file or directory. |
| setattr_with_size_change | boolean | Filter the client setattr requests for changing the size of a file. |
| write_with_size_change | boolean | Filter the client request for write with size change. |

fpolicy_event

The information that a FPolicy process needs to determine what file access operations to monitor and for which of the monitored events notifications should be sent to the external FPolicy server.

| Name | Type | Description |
| --- | --- | --- |
| file_operations | file_operations | Specifies the file operations for the FPolicy event. You must specify a valid protocol in the protocol parameter. The event will check the operations specified from all client requests using the protocol. |
| filters | filters | Specifies the list of filters for a given file operation for the specified protocol. When you specify the filters, you must specify the valid protocols and a valid file operations. |
| name | string | Specifies the name of the FPolicy event. |

| Name | Type | Description |
|---|---|---|
| protocol | string | Protocol for which event is created. If you specify protocol, then you must also specify a valid value for the file operation parameters. The value of this parameter must be one of the following:<br>• cifs - for the CIFS protocol.<br>• nfsv3 - for the NFSv3 protocol.<br>• nfsv4 - for the NFSv4 protocol. |
| volume_monitoring | boolean | Specifies whether volume operation monitoring is required. |

fpolicy_engine_reference

FPolicy external engine

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | The name of the FPolicy external engine. |

fpolicy_event_reference

FPolicy events

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | |

scope

| Name | Type | Description |
|---|---|---|
| exclude_export_policies | array[string] | |
| exclude_extension | array[string] | |
| exclude_shares | array[string] | |
| exclude_volumes | array[string] | |
| include_export_policies | array[string] | |

| Name | Type | Description |
|---|---|---|
| include_extension | array[string] | |
| include_shares | array[string] | |
| include_volumes | array[string] | |

fpolicy_policy

| Name | Type | Description |
|---|---|---|
| enabled | boolean | Specifies if the policy is enabled on the SVM or not. If no value is mentioned for this field but priority is set, then this policy will be enabled. |
| engine | fpolicy_engine_reference | FPolicy external engine |
| events | array[fpolicy_event_reference] | |
| mandatory | boolean | Specifies what action to take on a file access event in a case when all primary and secondary servers are down or no response is received from the FPolicy servers within a given timeout period. When this parameter is set to true, file access events will be denied under these circumstances. |
| name | string | Specifies the name of the policy. |
| priority | integer | Specifies the priority that is assigned to this policy. |
| scope | scope | |

svm

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

error_arguments

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

error

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

# Manage FPolicy engine configuration

## Protocols fpolicy svm.uuid engines endpoint overview

### Overview

The FPolicy engine allows you to configure the external servers to which the file access notifications are sent. As part of FPolicy engine configuration, you can configure the server(s) to which the notification is sent, an optional set of secondary server(s) to which the notification is sent in the case of the primary server(s) failure, the port number for FPolicy application and the type of the engine, synchronous or asynchronous.

For the synchronous engine, ONTAP will wait for a response from the FPolicy application before it allows the operation. With an asynchronous engine, ONTAP proceeds with the operation processing after sending the notification to the FPolicy application. An engine can belong to multiple FPolicy policies.

### Examples

#### Creating an FPolicy engine

```
# The API:
POST /protocols/fpolicy/{svm.uuid}/engines

#The call:
curl -X POST "https://<mgmt-ip>/api/protocols/fpolicy/4f643fb4-fd21-11e8-
ae49-0050568e2c1e/engines/" -H "accept: application/json" -H "Content-
Type: application/json" -d "{ \"name\": \"engine0\", \"port\": 9876,
\"primary_servers\": [ \"10.132.145.22\", \"10.140.101.109\" ],
\"secondary_servers\": [ \"10.132.145.20\", \"10.132.145.21\" ], \"type\":
\"synchronous\"}"

# The response:
{
"num_records": 1,
"records": [
  {
    "name": "engine0",
    "primary_servers": [
      "10.132.145.22",
      "10.140.101.109"
    ],
    "secondary_servers": [
      "10.132.145.20",
      "10.132.145.21"
    ],
    "port": 9876,
    "type": "synchronous"
  }
]
}
```

#### Creating an FPolicy engine with the minimum required fields

```
# The API:
POST /protocols/fpolicy/{svm.uuid}/engines

#The call:
curl -X POST "https://<mgmt-ip>/api/protocols/fpolicy/4f643fb4-fd21-11e8-
ae49-0050568e2c1e/engines/" -H "accept: application/json" -H "Content-
Type: application/json" -d "{ \"name\": \"engine0\", \"port\": 9876,
\"primary_servers\": [ \"10.132.145.22\", \"10.140.101.109\" ], \"type\":
\"synchronous\"}"

# The response:
{
"num_records": 1,
"records": [
  {
    "name": "engine0",
    "primary_servers": [
      "10.132.145.22",
      "10.140.101.109"
    ],
    "port": 9876,
    "type": "synchronous"
  }
]
}
```

#### Retrieving an FPolicy engine configuration for a particular SVM

```
# The API:
GET /protocols/fpolicy/{svm.uuid}/engines

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/fpolicy/4f643fb4-fd21-11e8-
ae49-0050568e2c1e/engines/?fields=*&return_records=true&return_timeout=15"
-H "accept: application/json"

# The response:
{
"records": [
  {
    "svm": {
      "uuid": "4f643fb4-fd21-11e8-ae49-0050568e2c1e"
    },
    "name": "cifs",
    "primary_servers": [
      "10.20.20.10"
    ],
    "port": 9876,
    "type": "synchronous"
  },
  {
    "svm": {
      "uuid": "4f643fb4-fd21-11e8-ae49-0050568e2c1e"
    },
    "name": "nfs",
    "primary_servers": [
      "10.23.140.64",
      "10.140.101.109"
    ],
    "secondary_servers": [
      "10.132.145.20",
      "10.132.145.22"
    ],
    "port": 9876,
    "type": "synchronous"
  }
],
"num_records": 2
}
```

#### Retrieving a specific FPolicy engine configuration for an SVM

```
# The Api:
GET /protocols/fpolicy/{svm.uuid}/engines/{name}

#The call:
curl -X GET "https://<mgmt-ip>/api/protocols/fpolicy/4f643fb4-fd21-11e8-
ae49-0050568e2c1e/engines/cifs?fields=*" -H "accept: application/json"

# The response:
{
"svm": {
  "uuid": "4f643fb4-fd21-11e8-ae49-0050568e2c1e"
 },
 "name": "cifs",
 "primary_servers": [
   "10.20.20.10"
 ],
 "port": 9876,
 "type": "synchronous"
}
```

#### Updating an FPolicy engine for an SVM

```
# The API:
PATCH /protocols/fpolicy/{svm.uuid}/engines/{name}

# The call:
curl -X PATCH "https://<mgmt-ip>/api/protocols/fpolicy/4f643fb4-fd21-11e8-
ae49-0050568e2c1e/engines/cifs" -H "accept: application/json" -H "Content-
Type: application/json" -d "{ \"port\": 6666, \"secondary_servers\": [
\"10.132.145.20\", \"10.132.145.21\" ], \"type\": \"synchronous\"}"
```

#### Updating all the attributes of a specific FPolicy engine for an SVM

```
# The API:
PATCH /protocols/fpolicy/{svm.uuid}/engines/{name}

# The call:
curl -X PATCH "https://<mgmt-ip>/api/protocols/fpolicy/4f643fb4-fd21-11e8-
ae49-0050568e2c1e/engines/cifs" -H "accept: application/json" -H "Content-
Type: application/json" -d "{ \"port\": 9876, \"primary_servers\": [
\"10.132.145.20\", \"10.140.101.109\" ], \"secondary_servers\": [
\"10.132.145.23\", \"10.132.145.21\" ], \"type\": \"synchronous\"}"
```

#### Deleting a specific FPolicy engine for an SVM

```
# The API:
DELETE /protocols/fpolicy/{svm.uuid}/engines/{name}

# The call:
curl -X DELETE "https://<mgmt-ip>/api/protocols/fpolicy/4f643fb4-fd21-
11e8-ae49-0050568e2c1e/events/cifs" -H "accept: application/json"
```

## Retrieve the FPolicy engine configuration for all engines of an SVM

GET `/protocols/fpolicy/{svm.uuid}/engines`

Retrieves FPolicy engine configurations of all the engines for a specified SVM. ONTAP allows creation of cluster-level FPolicy engines that act as a template for all the SVMs belonging to the cluster. These cluster-level FPolicy engines are also retrieved for the specified SVM.

### Related ONTAP commands

- `fpolicy policy external-engine show`

### Learn more

- DOC /protocols/fpolicy/{svm.uuid}/engines

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| name | string | query | False | Filter by name |
| type | string | query | False | Filter by type |
| secondary_servers | string | query | False | Filter by secondary_servers |
| primary_servers | string | query | False | Filter by primary_servers |
| port | integer | query | False | Filter by port |
| 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. |
| return_timeout | integer | query | False | The number of seconds to allow the call to execute before returning. When iterating over a collection, the default is 15 seconds. ONTAP returns earlier if either max records or the end of the collection is reached. |
| order_by | array[string] | query | False | Order results by specified fields and optional [asc |

### Response

```
Status: 200, Ok
```

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

### Example response


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "name": "fp_ex_eng",
      "port": 9876,
      "primary_servers": [
        "10.132.145.20",
        "10.140.101.109"
      ],
      "secondary_servers": [
        "10.132.145.20",
        "10.132.145.21"
      ],
      "type": "string"
    }
  ]
}
```


### Error

```
Status: Default,
```

| 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 | |

fpolicy_engine

The engine defines how ONTAP makes and manages connections to external FPolicy servers.

| Name | Type | Description |
|---|---|---|
| name | string | Specifies the name to assign to the external server configuration. |
| port | integer | Port number of the FPolicy server application. |
| primary_servers | array[string] | |
| secondary_servers | array[string] | |
| type | string | The notification mode determines what ONTAP does after sending notifications to FPolicy servers. The possible values are:<br>• synchronous - After sending a notification, wait for a response from the FPolicy server.<br>• asynchronous - After sending a notification, file request processing continues.<br>◦ Default value: 1<br>◦ enum: ["synchronous", "asynchronous"] |

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 the FPolicy engine configuration for an SVM

POST `/protocols/fpolicy/{svm.uuid}/engines`

Creates an FPolicy engine configuration for a specified SVM. FPolicy engine creation is allowed only on data SVMs.

### Required properties

- `svm.uuid` - Existing SVM in which to create the FPolicy engine.
- `name` - Name of external engine.
- `port` - Port number of the FPolicy server application.
- `primary_servers` - List of primary FPolicy servers to which the node will send notifications.

### Recommended optional properties

- `secondary_servers` - It is recommended to configure secondary FPolicy server to which the node will send notifications when the primary server is down.

### Default property values

- `type` - *synchronous*

### Related ONTAP commands

- `fpolicy policy external-engine create`

### Learn more

- DOC /protocols/fpolicy/{svm.uuid}/engines

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| return_records | boolean | query | False | The default is false. If set to true, the records are returned. |
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |

### Request Body

| Name | Type | Description |
|---|---|---|
| name | string | Specifies the name to assign to the external server configuration. |
| port | integer | Port number of the FPolicy server application. |
| primary_servers | array[string] | |
| secondary_servers | array[string] | |
| type | string | The notification mode determines what ONTAP does after sending notifications to FPolicy servers. The possible values are:<br>• synchronous - After sending a notification, wait for a response from the FPolicy server.<br>• asynchronous - After sending a notification, file request processing continues.<br>◦ Default value: 1<br>◦ enum: ["synchronous", "asynchronous"] |

### Example request

```
{
  "name": "fp_ex_eng",
  "port": 9876,
  "primary_servers": [
    "10.132.145.20",
    "10.140.101.109"
  ],
  "secondary_servers": [
    "10.132.145.20",
    "10.132.145.21"
  ],
  "type": "string"
}
```

### Response

```
Status: 201, Created
```

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

### Example response


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "name": "fp_ex_eng",
      "port": 9876,
      "primary_servers": [
        "10.132.145.20",
        "10.140.101.109"
      ],
      "secondary_servers": [
        "10.132.145.20",
        "10.132.145.21"
      ],
      "type": "string"
    }
  ]
}
```


### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 9764885 | The primary secondary server has a redundant IP address |
| 9764953 | The name of the FPolicy engine is "native" which is reserved by the system |

| 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**

fpolicy_engine

The engine defines how ONTAP makes and manages connections to external FPolicy servers.

| Name | Type | Description |
|---|---|---|
| name | string | Specifies the name to assign to the external server configuration. |
| port | integer | Port number of the FPolicy server application. |
| primary_servers | array[string] | |
| secondary_servers | array[string] | |
| type | string | The notification mode determines what ONTAP does after sending notifications to FPolicy servers. The possible values are:<br>• synchronous - After sending a notification, wait for a response from the FPolicy server.<br>• asynchronous - After sending a notification, file request processing continues.<br>◦ Default value: 1<br>◦ enum: ["synchronous", "asynchronous"] |

href

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

_links

| Name | Type | Description |
|---|---|---|
| next | href | |
| self | href | |

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 an FPolicy external engine configuration

DELETE `/protocols/fpolicy/{svm.uuid}/engines/{name}`

Deletes the FPolicy external engine configuration. Deletion of an FPolicy engine that is attached to one or more FPolicy policies is not allowed.

### Related ONTAP commands

- `fpolicy policy external-engine modify`

### Learn more

- DOC /protocols/fpolicy/{svm.uuid}/engines

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| name | string | path | True | |

### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 9764940 | At least one FPolicy policy is using the FPolicy engine |
| 9764887 | The FPolicy engine is a cluster level FPolicy engine |

| 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 a particular FPolicy engine configuration for an SVM

GET `/protocols/fpolicy/{svm.uuid}/engines/{name}`

Retrieves a particular FPolicy engine configuration of a specifed SVM. A cluster-level FPolicy engine configuration cannot be retrieved for a data SVM.

### Related ONTAP commands

- `fpolicy policy external-engine show`

### Learn more

- DOC /protocols/fpolicy/{svm.uuid}/engines

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| name | string | path | True | |

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

**Response**

```
Status: 200, Ok
```

| Name | Type | Description |
|---|---|---|
| name | string | Specifies the name to assign to the external server configuration. |
| port | integer | Port number of the FPolicy server application. |
| primary_servers | array[string] | |
| secondary_servers | array[string] | |
| type | string | The notification mode determines what ONTAP does after sending notifications to FPolicy servers. The possible values are:<br>• synchronous - After sending a notification, wait for a response from the FPolicy server.<br>• asynchronous - After sending a notification, file request processing continues.<br>◦ Default value: 1<br>◦ enum: ["synchronous", "asynchronous"] |

### Example response


```
{
  "name": "fp_ex_eng",
  "port": 9876,
  "primary_servers": [
    "10.132.145.20",
    "10.140.101.109"
  ],
  "secondary_servers": [
    "10.132.145.20",
    "10.132.145.21"
  ],
  "type": "string"
}
```


### Error

```
Status: Default, Error
```

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

### Example error


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

### Definitions

#### 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. |

## Update a specific FPolicy engine configuration for an SVM

PATCH `/protocols/fpolicy/{svm.uuid}/engines/{name}`

Updates a specific FPolicy engine configuration of an SVM. Modification of an FPolicy engine that is attached to one or more enabled FPolicy policies is not allowed.

### Related ONTAP commands

- `fpolicy policy external-engine modify`

### Learn more

- DOC /protocols/fpolicy/{svm.uuid}/engines

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| name | string | path | True | |

### Request Body

| Name | Type | Description |
|---|---|---|
| port | integer | Port number of the FPolicy server application. |
| primary_servers | array[string] | |
| secondary_servers | array[string] | |
| type | string | The notification mode determines what ONTAP does after sending notifications to FPolicy servers. The possible values are:<br>• synchronous - After sending a notification, wait for a response from the FPolicy server.<br>• asynchronous - After sending a notification, file request processing continues.<br>◦ Default value: 1<br>◦ enum: ["synchronous", "asynchronous"] |

### Example request

```
{
  "port": 9876,
  "primary_servers": [
    "10.132.145.20",
    "10.140.101.109"
  ],
  "secondary_servers": [
    "10.132.145.20",
    "10.132.145.21"
  ],
  "type": "string"
}
```

### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 9764922 | The primary and secondary server has a redundant IP address |
| 9764942 | At least one FPolicy policy is using the FPolicy engine |
| 9764886 | FPolicy engine is a cluster-level FPolicy engine |

| 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**

fpolicy_engine

The engine defines how ONTAP makes and manages connections to external FPolicy servers.

| Name | Type | Description |
|---|---|---|
| port | integer | Port number of the FPolicy server application. |
| primary_servers | array[string] | |
| secondary_servers | array[string] | |
| type | string | The notification mode determines what ONTAP does after sending notifications to FPolicy servers. The possible values are:<br>• synchronous - After sending a notification, wait for a response from the FPolicy server.<br>• asynchronous - After sending a notification, file request processing continues.<br>◦ Default value: 1<br>◦ enum: ["synchronous", "asynchronous"] |

error_arguments

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

error

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

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

# Manage FPolicy event configuration

## Protocols fpolicy svm.uuid events endpoint overview

### Overview

FPolicy events configurations allow you to specify which file access is monitored. As part of an FPolicy event, you can configure the SVM for which the events are generated, the name of the event configuration, the protocol (cifs, nfsv3/nfsv4) for which the events are generated, the file operations which are monitored, and filters that can be used to filter the unwanted notification generation for a specified protocol and file operation.

Each protocol has a set of supported file operations and filters. An SVM can have multiple events. A single FPolicy policy can have multiple FPolicy events.

### Examples

#### Creating an FPolicy event for a CIFS protocol with all the supported file operations and filters

```
# The API:
POST /protocols/fpolicy/{svm.uuid}/events

# The call:
curl -X POST "https://<mgmt-ip>/api/protocols/fpolicy/4f643fb4-fd21-11e8-
ae49-0050568e2c1e/eventsreturn_records=true" -H "accept: application/json"
-H "Content-Type: application/json" -d "{ \"file_operations\": {
\"close\": true, \"create\": true, \"create_dir\": true, \"delete\": true,
\"delete_dir\": true, \"getattr\": true, \"open\": true, \"read\": true,
\"rename\": true, \"rename_dir\": true, \"setattr\": true, \"write\": true
}, \"filters\": { \"close_with_modification\": true, \"close_with_read\":
true, \"close_without_modification\": true, \"first_read\": true,
\"first_write\": true, \"monitor_ads\": true, \"offline_bit\": true,
\"open_with_delete_intent\": true, \"open_with_write_intent\": true,
\"write_with_size_change\": true }, \"name\": \"event_cifs\",
\"protocol\": \"cifs\", \"volume_monitoring\": true}"

# The response:
{
"num_records": 1,
  "records": [
    {
```

```
      "name": "event_cifs",
      "protocol": "cifs",
      "volume_monitoring": true,
      "file_operations": {
        "close": true,
        "create": true,
        "create_dir": true,
        "delete": true,
        "delete_dir": true,
        "getattr": true,
        "open": true,
        "read": true,
        "write": true,
        "rename": true,
        "rename_dir": true,
        "setattr": true
      },
      "filters": {
        "monitor_ads": true,
        "close_with_modification": true,
        "close_without_modification": true,
        "close_with_read": true,
        "first_read": true,
        "first_write": true,
        "offline_bit": true,
        "open_with_delete_intent": true,
        "open_with_write_intent": true,
        "write_with_size_change": true
      }
    }
  ]
}
```

**Creating an FPolicy event for an NFS protocol with all the supported file operations and filters**

```
# The API:
post /protocols/fpolicy/{svm.uuid}/events

# The call:
curl -X POST "https://<mgmt-ip>/api/protocols/fpolicy/4f643fb4-fd21-11e8-
ae49-0050568e2c1e/eventsreturn_records=true" -H "accept: application/json"
-H "Content-Type: application/json" -d "{ \"file_operations\": {
\"create\": true, \"create_dir\": true, \"delete\": true, \"delete_dir\":
true, \"link\": true, \"lookup\": true, \"read\": true, \"rename\": true,
\"rename_dir\": true, \"setattr\": true, \"symlink\": true, \"write\":
true }, \"filters\": { \"offline_bit\": true, \"write_with_size_change\":
ture }, \"name\": \"event_nfsv3\", \"protocol\": \"nfsv3\",
\"volume_monitoring\": false}"

# The response:
{
"num_records": 1,
"records": [
  {
    "name": "event_nfsv3",
    "protocol": "nfsv3",
    "volume_monitoring": false,
    "file_operations": {
      "create": true,
      "create_dir": true,
      "delete": true,
      "delete_dir": true,
      "link": true,
      "lookup": true,
      "read": true,
      "write": true,
      "rename": true,
      "rename_dir": true,
      "setattr": true,
      "symlink": true
    },
    "filters": {
    "offline_bit": true,
    "write_with_size_change": true
    }
  }
]
}
```

```
# The API:
GET /protocols/fpolicy/{svm.uuid}/events

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/fpolicy/4f643fb4-fd21-11e8-
ae49-0050568e2c1e/events/?fields=*&return_records=true&return_timeout=15"
-H "accept: application/json"

# The response:
{
"records": [
  {
    "svm": {
      "uuid": "4f643fb4-fd21-11e8-ae49-0050568e2c1e"
    },
    "name": "cluster",
    "protocol": "cifs",
    "volume_monitoring": false,
    "file_operations": {
      "close": true,
      "create": false,
      "create_dir": false,
      "delete": false,
      "delete_dir": false,
      "getattr": false,
      "link": false,
      "lookup": false,
      "open": false,
      "read": false,
      "write": false,
      "rename": false,
      "rename_dir": false,
      "setattr": false,
      "symlink": false
    },
    "filters": {
      "monitor_ads": false,
      "close_with_modification": false,
      "close_without_modification": false,
      "close_with_read": true,
      "first_read": false,
      "first_write": false,
      "offline_bit": false,
```

```
      "open_with_delete_intent": false,
      "open_with_write_intent": false,
      "write_with_size_change": false,
      "setattr_with_owner_change": false,
      "setattr_with_group_change": false,
      "setattr_with_sacl_change": false,
      "setattr_with_dacl_change": false,
      "setattr_with_modify_time_change": false,
      "setattr_with_access_time_change": false,
      "setattr_with_creation_time_change": false,
      "setattr_with_mode_change": false,
      "setattr_with_size_change": false,
      "setattr_with_allocation_size_change": false,
      "exclude_directory": false
    }
  },
  {
    "svm": {
      "uuid": "4f643fb4-fd21-11e8-ae49-0050568e2c1e"
    },
    "name": "event_cifs",
    "protocol": "cifs",
    "volume_monitoring": true,
    "file_operations": {
      "close": true,
      "create": true,
      "create_dir": true,
      "delete": true,
      "delete_dir": true,
      "getattr": true,
      "link": false,
      "lookup": false,
      "open": true,
      "read": true,
      "write": true,
      "rename": true,
      "rename_dir": true,
      "setattr": true,
      "symlink": false
    },
    "filters": {
      "monitor_ads": true,
      "close_with_modification": true,
      "close_without_modification": true,
      "close_with_read": true,
      "first_read": true,
```

```
      "first_write": true,
      "offline_bit": true,
      "open_with_delete_intent": true,
      "open_with_write_intent": true,
      "write_with_size_change": true,
      "setattr_with_owner_change": false,
      "setattr_with_group_change": false,
      "setattr_with_sacl_change": false,
      "setattr_with_dacl_change": false,
      "setattr_with_modify_time_change": false,
      "setattr_with_access_time_change": false,
      "setattr_with_creation_time_change": false,
      "setattr_with_mode_change": false,
      "setattr_with_size_change": false,
      "setattr_with_allocation_size_change": false,
      "exclude_directory": false
    }
  }
],
"num_records": 2
}
```

#### Retrieving a specific FPolicy event configuration for an SVM

```
# The API:
GET /protocols/fpolicy/{svm.uuid}/events/{name}

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/fpolicy/4f643fb4-fd21-11e8-
ae49-
0050568e2c1e/events/event_cifs?fields=*&return_records=true&return_timeout
=15" -H "accept: application/json"

# The response:
{
"svm": {
  "uuid": "4f643fb4-fd21-11e8-ae49-0050568e2c1e"
},
"name": "event_cifs",
"protocol": "cifs",
"volume_monitoring": true,
"file_operations": {
```

```
  "close": true,
  "create": true,
  "create_dir": true,
  "delete": true,
  "delete_dir": true,
  "getattr": true,
  "link": false,
  "lookup": false,
  "open": true,
  "read": true,
  "write": true,
  "rename": true,
  "rename_dir": true,
  "setattr": true,
  "symlink": false
},
"filters": {
  "monitor_ads": true,
  "close_with_modification": true,
  "close_without_modification": true,
  "close_with_read": true,
  "first_read": true,
  "first_write": true,
  "offline_bit": true,
  "open_with_delete_intent": true,
  "open_with_write_intent": true,
  "write_with_size_change": true,
  "setattr_with_owner_change": false,
  "setattr_with_group_change": false,
  "setattr_with_sacl_change": false,
  "setattr_with_dacl_change": false,
  "setattr_with_modify_time_change": false,
  "setattr_with_access_time_change": false,
  "setattr_with_creation_time_change": false,
  "setattr_with_mode_change": false,
  "setattr_with_size_change": false,
  "setattr_with_allocation_size_change": false,
  "exclude_directory": false
 }
}
 ],
 "num_records": 2
}
```

#### Updating a specific FPolicy event configuration for a specified SVM

```
# The API:
PATCH /protocols/fpolicy/{svm.uuid}/events/{name}

# The call:
curl -X PATCH "https://<mgmt-ip>/api/protocols/fpolicy/4f643fb4-fd21-11e8-
ae49-0050568e2c1e/events/event_cifs" -H "accept: application/json" -H
"Content-Type: application/json" -d "{ \"file_operations\": { \"close\":
false, \"create\": false, \"read\": true }, \"filters\": {
\"close_with_modification\": false, \"close_with_read\": false,
\"close_without_modification\": false }, \"protocol\": \"cifs\",
\"volume_monitoring\": false}"
```

#### Deleting a specific FPolicy event configuration for a specific SVM

```
# The API:
DELETE /protocols/fpolicy/{svm.uuid}/events/{name}

# The call:
curl -X DELETE "https://<mgmt-ip>/api/protocols/fpolicy/4f643fb4-fd21-
11e8-ae49-0050568e2c1e/events/event_cifs" -H "accept: application/json"
```

## Retrieve a FPolicy event configuration for all events for an SVM

GET `/protocols/fpolicy/{svm.uuid}/events`

Retrieves FPolicy event configurations for all events for a specified SVM. ONTAP allows the creation of cluster-level FPolicy events that act as a template for all the data SVMs belonging to the cluster. These cluster-level FPolicy events are also retrieved for the specified SVM.

### Related ONTAP commands

- `fpolicy policy event show`

### Learn more

- DOC /protocols/fpolicy/{svm.uuid}/events

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| name | string | query | False | Filter by name |
| volume_monitoring | boolean | query | False | Filter by volume_monitoring |
| filters.setattr_with_modify_time_change | boolean | query | False | Filter by filters.setattr_with_modify_time_change |
| filters.first_read | boolean | query | False | Filter by filters.first_read |
| filters.exclude_directory | boolean | query | False | Filter by filters.exclude_directory |
| filters.offline_bit | boolean | query | False | Filter by filters.offline_bit |
| filters.write_with_size_change | boolean | query | False | Filter by filters.write_with_size_change |
| filters.setattr_with_group_change | boolean | query | False | Filter by filters.setattr_with_group_change |
| filters.setattr_with_dacl_change | boolean | query | False | Filter by filters.setattr_with_dacl_change |
| filters.setattr_with_mode_change | boolean | query | False | Filter by filters.setattr_with_mode_change |
| filters.open_with_write_intent | boolean | query | False | Filter by filters.open_with_write_intent |

| Name | Type | In | Required | Description |
| --- | --- | --- | --- | --- |
| filters.setattr_with_access_time_change | boolean | query | False | Filter by filters.setattr_with_access_time_change |
| filters.setattr_with_sacl_change | boolean | query | False | Filter by filters.setattr_with_sacl_change |
| filters.setattr_with_size_change | boolean | query | False | Filter by filters.setattr_with_size_change |
| filters.first_write | boolean | query | False | Filter by filters.first_write |
| filters.setattr_with_owner_change | boolean | query | False | Filter by filters.setattr_with_owner_change |
| filters.close_with_modification | boolean | query | False | Filter by filters.close_with_modification |
| filters.open_with_delete_intent | boolean | query | False | Filter by filters.open_with_delete_intent |
| filters.monitor_ads | boolean | query | False | Filter by filters.monitor_ads |
| filters.close_without_modification | boolean | query | False | Filter by filters.close_without_modification |
| filters.close_with_read | boolean | query | False | Filter by filters.close_with_read |
| filters.setattr_with_creation_time_change | boolean | query | False | Filter by filters.setattr_with_creation_time_change |
| filters.setattr_with_allocation_size_change | boolean | query | False | Filter by filters.setattr_with_allocation_size_change |

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| file_operations.close | boolean | query | False | Filter by file_operations.close |
| file_operations.create | boolean | query | False | Filter by file_operations.create |
| file_operations.rename_dir | boolean | query | False | Filter by file_operations.rename_dir |
| file_operations.setattr | boolean | query | False | Filter by file_operations.setattr |
| file_operations.delete_dir | boolean | query | False | Filter by file_operations.delete_dir |
| file_operations.read | boolean | query | False | Filter by file_operations.read |
| file_operations.open | boolean | query | False | Filter by file_operations.open |
| file_operations.rename | boolean | query | False | Filter by file_operations.rename |
| file_operations.delete | boolean | query | False | Filter by file_operations.delete |
| file_operations.getattr | boolean | query | False | Filter by file_operations.getattr |
| file_operations.symlink | boolean | query | False | Filter by file_operations.symlink |
| file_operations.create_dir | boolean | query | False | Filter by file_operations.create_dir |
| file_operations.link | boolean | query | False | Filter by file_operations.link |

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

**Response**

```
Status: 200, Ok
```

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

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

**Example response**

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "name": "event_nfs_close",
      "protocol": "string"
    }
  ]
}
```

**Error**

```
Status: Default, Error
```

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

### Example error


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


### Definitions

**See Definitions**

href

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

_links

| Name | Type | Description |
|---|---|---|
| next | href | |
| self | href | |

file_operations

Specifies the file operations for the FPolicy event. You must specify a valid protocol in the protocol parameter. The event will check the operations specified from all client requests using the protocol.

| Name | Type | Description |
|---|---|---|
| close | boolean | File close operations |
| create | boolean | File create operations |
| create_dir | boolean | Directory create operations |
| delete | boolean | File delete operations |
| delete_dir | boolean | Directory delete operations |
| getattr | boolean | Get attribute operations |
| link | boolean | Link operations |
| lookup | boolean | Lookup operations |
| open | boolean | File open operations |
| read | boolean | File read operations |
| rename | boolean | File rename operations |
| rename_dir | boolean | Directory rename operations |
| setattr | boolean | Set attribute operations |

| Name | Type | Description |
|---|---|---|
| symlink | boolean | Symbolic link operations |
| write | boolean | File write operations |

filters

Specifies the list of filters for a given file operation for the specified protocol. When you specify the filters, you must specify the valid protocols and a valid file operations.

| Name | Type | Description |
|---|---|---|
| close_with_modification | boolean | Filter the client request for close with modification. |
| close_with_read | boolean | Filter the client request for close with read. |
| close_without_modification | boolean | Filter the client request for close without modification. |
| exclude_directory | boolean | Filter the client requests for directory operations. When this filter is specified directory operations are not monitored. |
| first_read | boolean | Filter the client requests for the first-read. |
| first_write | boolean | Filter the client requests for the first-write. |
| monitor_ads | boolean | Filter the client request for alternate data stream. |
| offline_bit | boolean | Filter the client request for offline bit set. FPolicy server receives notification only when offline files are accessed. |
| open_with_delete_intent | boolean | Filter the client request for open with delete intent. |
| open_with_write_intent | boolean | Filter the client request for open with write intent. |

| Name | Type | Description |
| --- | --- | --- |
| setattr_with_access_time_change | boolean | Filter the client setattr requests for changing the access time of a file or directory. |
| setattr_with_allocation_size_change | boolean | Filter the client setattr requests for changing the allocation size of a file. |
| setattr_with_creation_time_change | boolean | Filter the client setattr requests for changing the creation time of a file or directory. |
| setattr_with_dacl_change | boolean | Filter the client setattr requests for changing dacl on a file or directory. |
| setattr_with_group_change | boolean | Filter the client setattr requests for changing group of a file or directory. |
| setattr_with_mode_change | boolean | Filter the client setattr requests for changing the mode bits on a file or directory. |
| setattr_with_modify_time_change | boolean | Filter the client setattr requests for changing the modification time of a file or directory. |
| setattr_with_owner_change | boolean | Filter the client setattr requests for changing owner of a file or directory. |
| setattr_with_sacl_change | boolean | Filter the client setattr requests for changing sacl on a file or directory. |
| setattr_with_size_change | boolean | Filter the client setattr requests for changing the size of a file. |
| write_with_size_change | boolean | Filter the client request for write with size change. |

fpolicy_event

The information that a FPolicy process needs to determine what file access operations to monitor and for which of the monitored events notifications should be sent to the external FPolicy server.

| Name | Type | Description |
| --- | --- | --- |
| file_operations | file_operations | Specifies the file operations for the FPolicy event. You must specify a valid protocol in the protocol parameter. The event will check the operations specified from all client requests using the protocol. |
| filters | filters | Specifies the list of filters for a given file operation for the specified protocol. When you specify the filters, you must specify the valid protocols and a valid file operations. |
| name | string | Specifies the name of the FPolicy event. |
| protocol | string | Protocol for which event is created. If you specify protocol, then you must also specify a valid value for the file operation parameters. The value of this parameter must be one of the following:<br>• cifs - for the CIFS protocol.<br>• nfsv3 - for the NFSv3 protocol.<br>• nfsv4 - for the NFSv4 protocol. |
| volume_monitoring | boolean | Specifies whether volume operation monitoring is required. |

error_arguments

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

error

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

## Create a FPolicy event configuration for an SVM

POST `/protocols/fpolicy/{svm.uuid}/events`

Creates an FPolicy event configuration for a specified SVM. FPolicy event creation is allowed only on data SVMs. When a protocol is specified, you must specify a file operation or a file operation and filters.

### Required properties

- `svm.uuid` - Existing SVM in which to create the FPolicy event.
- `name` - Name of the FPolicy event.

### Recommended optional properties

- `file-operations` - List of file operations to monitor.
- `protocol` - Protocol for which the file operations should be monitored.
- `filters` - List of filters for the specified file operations.

### Default property values

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

- `file_operations.*` - *false*
- `filters.*` - *false*
- `volume-monitoring` - *false*

### Related ONTAP commands

- `fpolicy policy event create`

### Learn more

- DOC /protocols/fpolicy/{svm.uuid}/events

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| return_records | boolean | query | False | The default is false. If set to true, the records are returned. |
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |

### Request Body

| Name | Type | Description |
|---|---|---|
| file_operations | file_operations | Specifies the file operations for the FPolicy event. You must specify a valid protocol in the protocol parameter. The event will check the operations specified from all client requests using the protocol. |
| filters | filters | Specifies the list of filters for a given file operation for the specified protocol. When you specify the filters, you must specify the valid protocols and a valid file operations. |
| name | string | Specifies the name of the FPolicy event. |
| protocol | string | Protocol for which event is created. If you specify protocol, then you must also specify a valid value for the file operation parameters. The value of this parameter must be one of the following:<br>• cifs - for the CIFS protocol.<br>• nfsv3 - for the NFSv3 protocol.<br>• nfsv4 - for the NFSv4 protocol. |
| volume_monitoring | boolean | Specifies whether volume operation monitoring is required. |

### Example request

```
{
  "name": "event_nfs_close",
  "protocol": "string"
}
```

### Response

```
Status: 201, Created
```

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

### Example response

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "name": "event_nfs_close",
      "protocol": "string"
    }
  ]
}
```

### Error

```
Status: Default
```

| Error Code | Description |
| --- | --- |
| 9764929 | The file operation is not supported by the protocol |
| 9764955 | The filter is not supported by the protocol |
| 9764930 | The filter is not supported by any of the file operations |
| 9764946 | The protocol is specifed without a file operation or a file operation and filter pair |

| 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**

file_operations

Specifies the file operations for the FPolicy event. You must specify a valid protocol in the protocol parameter. The event will check the operations specified from all client requests using the protocol.

| Name | Type | Description |
|---|---|---|
| close | boolean | File close operations |
| create | boolean | File create operations |
| create_dir | boolean | Directory create operations |
| delete | boolean | File delete operations |
| delete_dir | boolean | Directory delete operations |
| getattr | boolean | Get attribute operations |
| link | boolean | Link operations |
| lookup | boolean | Lookup operations |
| open | boolean | File open operations |
| read | boolean | File read operations |
| rename | boolean | File rename operations |
| rename_dir | boolean | Directory rename operations |
| setattr | boolean | Set attribute operations |
| symlink | boolean | Symbolic link operations |
| write | boolean | File write operations |

filters

Specifies the list of filters for a given file operation for the specified protocol. When you specify the filters, you must specify the valid protocols and a valid file operations.

| Name | Type | Description |
| --- | --- | --- |
| close_with_modification | boolean | Filter the client request for close with modification. |
| close_with_read | boolean | Filter the client request for close with read. |
| close_without_modification | boolean | Filter the client request for close without modification. |
| exclude_directory | boolean | Filter the client requests for directory operations. When this filter is specified directory operations are not monitored. |
| first_read | boolean | Filter the client requests for the first-read. |
| first_write | boolean | Filter the client requests for the first-write. |
| monitor_ads | boolean | Filter the client request for alternate data stream. |
| offline_bit | boolean | Filter the client request for offline bit set. FPolicy server receives notification only when offline files are accessed. |
| open_with_delete_intent | boolean | Filter the client request for open with delete intent. |
| open_with_write_intent | boolean | Filter the client request for open with write intent. |
| setattr_with_access_time_change | boolean | Filter the client setattr requests for changing the access time of a file or directory. |
| setattr_with_allocation_size_change | boolean | Filter the client setattr requests for changing the allocation size of a file. |
| setattr_with_creation_time_change | boolean | Filter the client setattr requests for changing the creation time of a file or directory. |

| Name | Type | Description |
| --- | --- | --- |
| setattr_with_dacl_change | boolean | Filter the client setattr requests for changing dacl on a file or directory. |
| setattr_with_group_change | boolean | Filter the client setattr requests for changing group of a file or directory. |
| setattr_with_mode_change | boolean | Filter the client setattr requests for changing the mode bits on a file or directory. |
| setattr_with_modify_time_change | boolean | Filter the client setattr requests for changing the modification time of a file or directory. |
| setattr_with_owner_change | boolean | Filter the client setattr requests for changing owner of a file or directory. |
| setattr_with_sacl_change | boolean | Filter the client setattr requests for changing sacl on a file or directory. |
| setattr_with_size_change | boolean | Filter the client setattr requests for changing the size of a file. |
| write_with_size_change | boolean | Filter the client request for write with size change. |

fpolicy_event

The information that a FPolicy process needs to determine what file access operations to monitor and for which of the monitored events notifications should be sent to the external FPolicy server.

| Name | Type | Description |
| --- | --- | --- |
| file_operations | file_operations | Specifies the file operations for the FPolicy event. You must specify a valid protocol in the protocol parameter. The event will check the operations specified from all client requests using the protocol. |

| Name | Type | Description |
|---|---|---|
| filters | filters | Specifies the list of filters for a given file operation for the specified protocol. When you specify the filters, you must specify the valid protocols and a valid file operations. |
| name | string | Specifies the name of the FPolicy event. |
| protocol | string | Protocol for which event is created. If you specify protocol, then you must also specify a valid value for the file operation parameters. The value of this parameter must be one of the following:<br>• cifs - for the CIFS protocol.<br>• nfsv3 - for the NFSv3 protocol.<br>• nfsv4 - for the NFSv4 protocol. |
| volume_monitoring | boolean | Specifies whether volume operation monitoring is required. |

href

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

_links

| Name | Type | Description |
|---|---|---|
| next | href | |
| self | href | |

error_arguments

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

error

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

## Delete a specific FPolicy event configuration for an SVM

DELETE `/protocols/fpolicy/{svm.uuid}/events/{name}`

Deletes a specific FPolicy event configuration for an SVM. A cluster-level FPolicy event configuration cannot be modified for a data SVM through REST. An FPolicy event that is attached to an FPolicy policy cannot be deleted.

### Related ONTAP commands

- `fpolicy policy event delete`

### Learn more

- DOC /protocols/fpolicy/{svm.uuid}/events

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| name | string | path | True | |

### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

| Error Code | Description |
| --- | --- |
| 9764874 | The FPolicy event is a cluster event |
| 9764947 | The FPolicy event is attached to an FPolicy policy |

| 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 a specific FPolicy event configuration for an SVM

GET `/protocols/fpolicy/{svm.uuid}/events/{name}`

Retrieves a specific FPolicy event configuration for an SVM. A cluster-level FPolicy event configuration cannot be retrieved for a data SVM through a REST API.

### Related ONTAP commands

- `fpolicy policy event show`

### Learn more

- DOC /protocols/fpolicy/{svm.uuid}/events

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| name | string | path | True | |

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

**Response**

```
Status: 200, Ok
```

| Name | Type | Description |
|---|---|---|
| file_operations | file_operations | Specifies the file operations for the FPolicy event. You must specify a valid protocol in the protocol parameter. The event will check the operations specified from all client requests using the protocol. |
| filters | filters | Specifies the list of filters for a given file operation for the specified protocol. When you specify the filters, you must specify the valid protocols and a valid file operations. |
| name | string | Specifies the name of the FPolicy event. |
| protocol | string | Protocol for which event is created. If you specify protocol, then you must also specify a valid value for the file operation parameters. The value of this parameter must be one of the following:<br>• cifs - for the CIFS protocol.<br>• nfsv3 - for the NFSv3 protocol.<br>• nfsv4 - for the NFSv4 protocol. |
| volume_monitoring | boolean | Specifies whether volume operation monitoring is required. |

### Example response


```
{
  "name": "event_nfs_close",
  "protocol": "string"
}
```


### Error

```
Status: Default, Error
```

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

### Example error


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


### Definitions

**See Definitions**

file_operations

Specifies the file operations for the FPolicy event. You must specify a valid protocol in the protocol parameter. The event will check the operations specified from all client requests using the protocol.

| Name | Type | Description |
|---|---|---|
| close | boolean | File close operations |
| create | boolean | File create operations |
| create_dir | boolean | Directory create operations |
| delete | boolean | File delete operations |
| delete_dir | boolean | Directory delete operations |
| getattr | boolean | Get attribute operations |
| link | boolean | Link operations |
| lookup | boolean | Lookup operations |
| open | boolean | File open operations |
| read | boolean | File read operations |
| rename | boolean | File rename operations |
| rename_dir | boolean | Directory rename operations |
| setattr | boolean | Set attribute operations |
| symlink | boolean | Symbolic link operations |
| write | boolean | File write operations |

filters

Specifies the list of filters for a given file operation for the specified protocol. When you specify the filters, you must specify the valid protocols and a valid file operations.

| Name | Type | Description |
| --- | --- | --- |
| close_with_modification | boolean | Filter the client request for close with modification. |
| close_with_read | boolean | Filter the client request for close with read. |
| close_without_modification | boolean | Filter the client request for close without modification. |
| exclude_directory | boolean | Filter the client requests for directory operations. When this filter is specified directory operations are not monitored. |
| first_read | boolean | Filter the client requests for the first-read. |
| first_write | boolean | Filter the client requests for the first-write. |
| monitor_ads | boolean | Filter the client request for alternate data stream. |
| offline_bit | boolean | Filter the client request for offline bit set. FPolicy server receives notification only when offline files are accessed. |
| open_with_delete_intent | boolean | Filter the client request for open with delete intent. |
| open_with_write_intent | boolean | Filter the client request for open with write intent. |
| setattr_with_access_time_change | boolean | Filter the client setattr requests for changing the access time of a file or directory. |
| setattr_with_allocation_size_change | boolean | Filter the client setattr requests for changing the allocation size of a file. |
| setattr_with_creation_time_change | boolean | Filter the client setattr requests for changing the creation time of a file or directory. |

| Name | Type | Description |
| --- | --- | --- |
| setattr_with_dacl_change | boolean | Filter the client setattr requests for changing dacl on a file or directory. |
| setattr_with_group_change | boolean | Filter the client setattr requests for changing group of a file or directory. |
| setattr_with_mode_change | boolean | Filter the client setattr requests for changing the mode bits on a file or directory. |
| setattr_with_modify_time_change | boolean | Filter the client setattr requests for changing the modification time of a file or directory. |
| setattr_with_owner_change | boolean | Filter the client setattr requests for changing owner of a file or directory. |
| setattr_with_sacl_change | boolean | Filter the client setattr requests for changing sacl on a file or directory. |
| setattr_with_size_change | boolean | Filter the client setattr requests for changing the size of a file. |
| write_with_size_change | boolean | Filter the client request for write with size change. |

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 |

| Name | Type | Description |
|---|---|---|
| message | string | Error message |
| target | string | The target parameter that caused the error. |

## Update a specific FPolicy event configuration for an SVM

PATCH `/protocols/fpolicy/{svm.uuid}/events/{name}`

Updates a specific FPolicy event configuration for an SVM. A cluster-level FPolicy event configuration cannot be modified for a data SVM through REST. When the file operations and filters fields are modified, the previous values are retained and new values are added to the list of previous values. To remove a particular file operation or filter, set its value to false in the request.

### Related ONTAP commands

- `fpolicy policy event modify`

### Learn more

- DOC /protocols/fpolicy/{svm.uuid}/events

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| name | string | path | True | |

### Request Body

| Name | Type | Description |
|---|---|---|
| file_operations | file_operations | Specifies the file operations for the FPolicy event. You must specify a valid protocol in the protocol parameter. The event will check the operations specified from all client requests using the protocol. |

| Name | Type | Description |
|---|---|---|
| filters | filters | Specifies the list of filters for a given file operation for the specified protocol. When you specify the filters, you must specify the valid protocols and a valid file operations. |
| protocol | string | Protocol for which event is created. If you specify protocol, then you must also specify a valid value for the file operation parameters. The value of this parameter must be one of the following:<br>• cifs - for the CIFS protocol.<br>• nfsv3 - for the NFSv3 protocol.<br>• nfsv4 - for the NFSv4 protocol. |
| volume_monitoring | boolean | Specifies whether volume operation monitoring is required. |

**Example request**

```
{
  "protocol": "string"
}
```

**Response**

```
Status: 200, Ok
```

**Error**

```
Status: Default
```

| Error Code | Description |
|---|---|
| 9764873 | The event is a cluster event |
| 9764929 | The file operation is not supported by the protocol |
| 9764955 | The filter is not supported by the protocol |
| 9764930 | The filter is not supported by any of the file operations |

| Error Code | Description |
| --- | --- |
| 9764946 | The protocol is specifed without file operation or a file operation and filter pair |

| 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**

file_operations

Specifies the file operations for the FPolicy event. You must specify a valid protocol in the protocol parameter. The event will check the operations specified from all client requests using the protocol.

| Name | Type | Description |
|---|---|---|
| close | boolean | File close operations |
| create | boolean | File create operations |
| create_dir | boolean | Directory create operations |
| delete | boolean | File delete operations |
| delete_dir | boolean | Directory delete operations |
| getattr | boolean | Get attribute operations |
| link | boolean | Link operations |
| lookup | boolean | Lookup operations |
| open | boolean | File open operations |
| read | boolean | File read operations |
| rename | boolean | File rename operations |
| rename_dir | boolean | Directory rename operations |
| setattr | boolean | Set attribute operations |
| symlink | boolean | Symbolic link operations |
| write | boolean | File write operations |

filters

Specifies the list of filters for a given file operation for the specified protocol. When you specify the filters, you must specify the valid protocols and a valid file operations.

| Name | Type | Description |
| --- | --- | --- |
| close_with_modification | boolean | Filter the client request for close with modification. |
| close_with_read | boolean | Filter the client request for close with read. |
| close_without_modification | boolean | Filter the client request for close without modification. |
| exclude_directory | boolean | Filter the client requests for directory operations. When this filter is specified directory operations are not monitored. |
| first_read | boolean | Filter the client requests for the first-read. |
| first_write | boolean | Filter the client requests for the first-write. |
| monitor_ads | boolean | Filter the client request for alternate data stream. |
| offline_bit | boolean | Filter the client request for offline bit set. FPolicy server receives notification only when offline files are accessed. |
| open_with_delete_intent | boolean | Filter the client request for open with delete intent. |
| open_with_write_intent | boolean | Filter the client request for open with write intent. |
| setattr_with_access_time_change | boolean | Filter the client setattr requests for changing the access time of a file or directory. |
| setattr_with_allocation_size_change | boolean | Filter the client setattr requests for changing the allocation size of a file. |
| setattr_with_creation_time_change | boolean | Filter the client setattr requests for changing the creation time of a file or directory. |

| Name | Type | Description |
| --- | --- | --- |
| setattr_with_dacl_change | boolean | Filter the client setattr requests for changing dacl on a file or directory. |
| setattr_with_group_change | boolean | Filter the client setattr requests for changing group of a file or directory. |
| setattr_with_mode_change | boolean | Filter the client setattr requests for changing the mode bits on a file or directory. |
| setattr_with_modify_time_change | boolean | Filter the client setattr requests for changing the modification time of a file or directory. |
| setattr_with_owner_change | boolean | Filter the client setattr requests for changing owner of a file or directory. |
| setattr_with_sacl_change | boolean | Filter the client setattr requests for changing sacl on a file or directory. |
| setattr_with_size_change | boolean | Filter the client setattr requests for changing the size of a file. |
| write_with_size_change | boolean | Filter the client request for write with size change. |

fpolicy_event

The information that a FPolicy process needs to determine what file access operations to monitor and for which of the monitored events notifications should be sent to the external FPolicy server.

| Name | Type | Description |
| --- | --- | --- |
| file_operations | file_operations | Specifies the file operations for the FPolicy event. You must specify a valid protocol in the protocol parameter. The event will check the operations specified from all client requests using the protocol. |

| Name | Type | Description |
|---|---|---|
| filters | filters | Specifies the list of filters for a given file operation for the specified protocol. When you specify the filters, you must specify the valid protocols and a valid file operations. |
| protocol | string | Protocol for which event is created. If you specify protocol, then you must also specify a valid value for the file operation parameters. The value of this parameter must be one of the following:<br>• cifs - for the CIFS protocol.<br>• nfsv3 - for the NFSv3 protocol.<br>• nfsv4 - for the NFSv4 protocol. |
| volume_monitoring | boolean | Specifies whether volume operation monitoring is required. |

error_arguments

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

error

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

# Manage SVM FPolicy configuration

## Protocols fpolicy svm.uuid policies endpoint overview

### Overview

The FPolicy policy acts as a container for different constituents of the FPolicy such as FPolicy events and the FPolicy engine. It also provides a platform for policy management functions, such as policy enabling and disabling. As part of FPolicy policy configuration, you can specifiy the name of policy, the SVM to which it belongs, the FPolicy events to monitor, the FPolicy engine to which the generated notifications are sent and the policy priority. FPolicy policy configuration also allows to you to configure the file access behaviour when the primary and secondary servers are down. Under such circumstances, if the "mandatory" field is set to true, file access is denied.

Each FPolicy policy is associated with a scope which allows you to restrain the scope of the policy to specified storage objects such as volume, shares and export or to a set of file extensions such as .txt, .jpeg. An FPolicy policy can be configured to send notifications, to the FPolicy server or for native file blocking which uses the file extension specified in the policy scope. An SVM can have multiple FPolicy policies which can be enabled or disabled independently of each other.

### Examples

#### Creating an FPolicy policy

Use the following API to create an FPolicy policy configuration. Note that the *return_records=true* query parameter used to obtain the newly created entry in the response.

```
# The API:
POST /protocols/fpolicy/{svm.uuid}/policies

# The call:
curl -X POST "https://<mgmt-ip>/api/protocols/fpolicy/a00fac5d-0164-11e9-
b64a-0050568eeb34/polices?return_records=true" -H "accept:
application/json" -H "Content-Type: application/json" -d "{ \"engine\": {
\"name\": \"engine1\" }, \"events\": [ \"cifs\", \"nfs\" ], \"mandatory\":
true, \"name\": \"FPolicy_policy_0\", \"scope\": {
\"exclude_export_policies\": [ \"export_pol1\" ], \"exclude_extension\": [
\"txt\", \"png\" ], \"exclude_shares\": [ \"sh1\" ], \"exclude_volumes\":
[ \"vol0\" ], \"include_export_policies\": [ \"export_pol10\" ],
\"include_extension\": [ \"pdf\" ], \"include_shares\": [ \"sh2\", \"sh3\"
], \"include_volumes\": [ \"vol1\", \"vol2\" ] }}"

# The response:
{
"num_records": 1,
"records": [
  {
```

```
    "name": "FPolicy_policy_0",
    "events": [
      {
        "name": "cifs"
      },
      {
        "name": "nfs"
      }
      ],
    "engine": {
      "name": "engine1"
    },
    "scope": {
      "include_shares": [
        "sh2",
        "sh3"
      ],
      "exclude_shares": [
        "sh1"
      ],
      "include_volumes": [
        "vol1",
        "vol2"
      ],
      "exclude_volumes": [
        "vol0"
      ],
      "include_export_policies": [
        "export_pol10"
      ],
      "exclude_export_policies": [
        "export_pol1"
      ],
      "include_extension": [
        "pdf"
      ],
      "exclude_extension": [
        "txt",
        "png"
      ]
    },
    "mandatory": true
  }
]
}
```

```
# The API:
POST /protocols/fpolicy/{svm.uuid}/policies

# The call:
curl -X POST "https://<mgmt-ip>/api/protocols/fpolicy/a00fac5d-0164-11e9-
b64a-0050568eeb34/polices?return_records=true" -H "accept:
application/json" -H "Content-Type: application/json" -d "{ \"priority\":
1, \"engine\": { \"name\": \"engine1\" }, \"events\": [ \"cifs\", \"nfs\"
], \"mandatory\": true, \"name\": \"FPolicy_policy_on\", \"scope\": {
\"exclude_export_policies\": [ \"export_pol1\" ], \"exclude_extension\": [
\"txt\", \"png\" ], \"exclude_shares\": [ \"sh1\" ], \"exclude_volumes\":
[ \"vol0\" ], \"include_export_policies\": [ \"export_pol10\" ],
\"include_extension\": [ \"pdf\" ], \"include_shares\": [ \"sh2\", \"sh3\"
], \"include_volumes\": [ \"vol1\", \"vol2\" ] }}"

# The response:
{
"num_records": 1,
"records": [
  {
   "name": "FPolicy_policy_0",
   "priority": 1,
   "events": [
     {
       "name": "cifs"
     },
     {
       "name": "nfs"
     }
   ],
   "engine": {
     "name": "engine1"
   },
   "scope": {
     "include_shares": [
       "sh2",
       "sh3"
     ],
     "exclude_shares": [
       "sh1"
     ],
     "include_volumes": [
       "vol1",
```

```
        "vol2"
      ],
      "exclude_volumes": [
        "vol0"
      ],
      "include_export_policies": [
        "export_pol10"
      ],
      "exclude_export_policies": [
        "export_pol1"
      ],
      "include_extension": [
        "pdf"
      ],
      "exclude_extension": [
        "txt",
        "png"
      ]
    },
    "mandatory": true
  }
  ]
}
```

**Creating an FPolicy policy with the minimum required fields and a native engine**

```
# The API:
POST /protocols/fpolicy/{svm.uuid}/policies

# The call:
curl -X POST"https://<mgmt-ip>/api/protocols/fpolicy/a00fac5d-0164-11e9-
b64a-0050568eeb34/polices?return_records=true" -H "accept:
application/json" -H "Content-Type: application/json" -d "{ \"events\": [
\"cifs\", \"nfs\" ], \"name\": \"pol_minimum_fields\", \"scope\": {
\"include_volumes\": [ \"vol1\", \"vol2\" ] }}"

# The response:
{
"num_records": 1,
"records": [
  {
    "name": "pol_minimum_fields",
    "events": [
      {
        "name": "cifs"
      },
      {
        "name": "nfs"
      }
    ],
    "scope": {
      "include_volumes": [
        "vol1",
        "vol2"
      ]
    }
  }
]
}
```

#### Retrieving all the FPolicy policy configurations for an SVM

```
# The API:
GET /protocols/fpolicy/{svm.uuid}/policies

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/fpolicy/a00fac5d-0164-11e9-
```

```
b64a-0050568eeb34/policis?fields=*&return_records=true&return_timeout=15"
-H "accept: application/json"

# The response:
{
"records": [
  {
    "svm": {
      "uuid": "a00fac5d-0164-11e9-b64a-0050568eeb34"
    },
    "name": "pol0",
    "enabled": false,
    "events": [
      {
        "name": "cifs"
      },
      {
        "name": "nfs"
      }
    ],
    "engine": {
      "name": "engine1"
    },
    "scope": {
      "include_shares": [
        "sh2",
        "sh3"
      ],
      "exclude_shares": [
        "sh1"
      ],
      "include_volumes": [
        "vol1",
        "vol2"
      ],
      "exclude_volumes": [
        "vol0"
      ],
      "include_export_policies": [
        "export_pol10"
      ],
      "exclude_export_policies": [
        "export_pol1"
      ],
      "include_extension": [
        "pdf"
```

```
      ],
      "exclude_extension": [
        "txt",
        "png"
      ]
    },
    "mandatory": true
  },
  {
    "svm": {
      "uuid": "a00fac5d-0164-11e9-b64a-0050568eeb34"
    },
    "name": "FPolicy_policy_on",
    "enabled": true,
    "priority": 1,
    "events": [
      {
        "name": "cifs"
      },
      {
        "name": "nfs"
      }
    ],
    "engine": {
      "name": "engine1"
    },
     "scope": {
      "include_shares": [
        "sh2",
        "sh3"
      ],
      "exclude_shares": [
        "sh1"
      ],
      "include_volumes": [
        "vol1",
        "vol2"
      ],
      "exclude_volumes": [
        "vol0"
      ],
      "include_export_policies": [
        "export_pol10"
      ],
      "exclude_export_policies": [
        "export_pol1"
```

```
      ],
      "include_extension": [
        "pdf"
      ],
      "exclude_extension": [
        "txt",
        "png"
      ]
    },
    "mandatory": true
  },
  {
    "svm": {
      "uuid": "a00fac5d-0164-11e9-b64a-0050568eeb34"
    },
    "name": "cluster_pol",
    "enabled": false,
    "events": [
      {
        "name": "cluster"
      }
    ],
    "engine": {
      "name": "native"
    },
    "mandatory": true
  },
  {
    "svm": {
      "uuid": "a00fac5d-0164-11e9-b64a-0050568eeb34"
    },
    "name": "pol_minimum_fields",
    "enabled": false,
    "events": [
      {
        "name": "cifs"
      },
      {
        "name": "nfs"
      }
    ],
    "engine": {
      "name": "native"
    },
    "scope": {
      "include_volumes": [
```

```
        "vol1",
        "vol2"
      ]
    },
    "mandatory": true
  }
],
"num_records": 4
}
```

#### Retrieving all of the FPolicy policy configurations for the FPolicy engine "engine1" for an SVM

```
# The API:
GET /protocols/fpolicy/{svm.uuid}/policies/{name}

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/fpolicy/a00fac5d-0164-11e9-
b64a-
0050568eeb34/policis?engine.name=engine1&fields=*&return_records=true&retu
rn_timeout=15" -H "accept: application/json"

# The response:
{
"records": [
  {
    "svm": {
      "uuid": "a00fac5d-0164-11e9-b64a-0050568eeb34"
    },
    "name": "pol0",
    "enabled": false,
    "events": [
      {
        "name": "cifs"
      },
      {
        "name": "nfs"
      }
    ],
    "engine": {
      "name": "engine1"
    },
    "scope": {
```

```
      "include_export_policies": [
        "export_pol10"
      ],
      "exclude_export_policies": [
        "export_pol1"
      ],
      "include_extension": [
        "pdf"
      ],
      "exclude_extension": [
        "txt",
        "png"
      ]
    },
    "mandatory": true
  },
  {
    "svm": {
      "uuid": "a00fac5d-0164-11e9-b64a-0050568eeb34"
    },
    "name": "FPolicy_policy_on",
    "enabled": true,
    "priority": 1,
    "events": [
      {
        "name": "cifs"
      },
      {
        "name": "nfs"
      }
    ],
    "engine": {
      "name": "engine1"
    },
    "scope": {
      "include_shares": [
        "sh2",
        "sh3"
      ],
      "exclude_shares": [
        "sh1"
      ],
      "include_volumes": [
        "vol1",
        "vol2"
      ],
```

```
      "exclude_volumes": [
        "vol0"
      ],
      "include_export_policies": [
        "export_pol10"
      ],
      "exclude_export_policies": [
        "export_pol1"
      ],
      "include_extension": [
        "pdf"
      ],
      "exclude_extension": [
        "txt",
        "png"
      ]
    },
    "mandatory": true
  }
],
"num_records": 2
}
```

#### Retrieving a particular FPolicy policy configuration for an SVM

```
# The API:
GET /protocols/fpolicy/{svm.uuid}/policies/{name}

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/fpolicy/a00fac5d-0164-11e9-
b64a-0050568eeb34/policies/pol0" -H "accept: application/json"

# The response:
{
"svm": {
  "uuid": "a00fac5d-0164-11e9-b64a-0050568eeb34"
},
"name": "pol0",
"enabled": false,
"events": [
  {
    "name": "cifs"
```

```
  },
  {
    "name": "nfs"
  }
],
"engine": {
  "name": "engine1"
},
"scope": {
  "include_shares": [
    "sh2",
    "sh3"
  ],
  "exclude_shares": [
    "sh1"
  ],
  "include_volumes": [
    "vol1",
    "vol2"
  ],
  "exclude_volumes": [
    "vol0"
  ],
  "include_export_policies": [
    "export_pol10"
  ],
  "exclude_export_policies": [
    "export_pol1"
  ],
  "include_extension": [
    "pdf"
  ],
  "exclude_extension": [
    "txt",
    "png"
  ]
},
"mandatory": true
}
```

#### Updating a particular FPolicy policy

```
# The API:
PATCH /protocols/fpolicy/{svm.uuid}/policies/{name}

# The call:
curl -X PATCH "https://<mgmt-ip>/api/protocols/fpolicy/a00fac5d-0164-11e9-
b64a-0050568eeb34/policies/pol0" -H "accept: application/json" -H
"Content-Type: application/json" -d "{ \"engine\": { \"name\": \"native\"
}, \"events\": [ \"cifs\" ], \"mandatory\": false, \"scope\": {
\"include_volumes\": [ \"*\" ] }}"
```

#### Enabling a particular FPolicy policy

```
# The API:
PATCH /protocols/fpolicy/{svm.uuid}/policies/{name}

# The call:
curl -X PATCH "https://<mgmt-ip>/api/protocols/fpolicy/a00fac5d-0164-11e9-
b64a-0050568eeb34/poliies/pol0" -H "accept: application/json" -H "Content-
Type: application/json" -d "{ \"enabled\": true, \"priority\": 3}"
```

#### Disabling a particular FPolicy policy

```
# The API:
PATCH /protocols/fpolicy/{svm.uuid}/policies/{name}

# The call:
curl -X PATCH "https://<mgmt-ip>/api/protocols/fpolicy/a00fac5d-0164-11e9-
b64a-0050568eeb34/poliies/pol0" -H "accept: application/json" -H "Content-
Type: application/json" -d "{ \"enabled\": true }"
```

## Retrieve the FPolicy configuration for an SVM

GET `/protocols/fpolicy/{svm.uuid}/policies`

Retrieves the FPolicy policy configuration of an SVM. ONTAP allows the creation of a cluster level FPolicy policy that acts as a template for all the data SVMs belonging to the cluster. This cluster level FPolicy policy is

also retrieved for the specified SVM.

### Related ONTAP commands

- `fpolicy policy show`
- `fpolicy policy scope show`

### Learn more

- DOC /protocols/fpolicy/{svm.uuid}/policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| enabled | boolean | query | False | Filter by enabled |
| priority | integer | query | False | Filter by priority |
| scope.include_shares | string | query | False | Filter by scope.include_shares |
| scope.exclude_export_policies | string | query | False | Filter by scope.exclude_export_policies |
| scope.exclude_volumes | string | query | False | Filter by scope.exclude_volumes |
| scope.exclude_extension | string | query | False | Filter by scope.exclude_extension |
| scope.exclude_shares | string | query | False | Filter by scope.exclude_shares |
| scope.include_export_policies | string | query | False | Filter by scope.include_export_policies |

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

### Response

```
Status: 200, Ok
```

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

**Example response**


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "engine": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "string"
      },
      "events": [
        "event_nfs_close",
        "event_open"
      ],
      "name": "fp_policy_1",
      "scope": {
        "exclude_export_policies": [
          "string"
        ],
        "exclude_extension": [
          "string"
        ],
        "exclude_shares": [
          "string"
        ],
        "exclude_volumes": [
          "vol1",
          "vol_svm1",
          "*"
        ],
        "include_export_policies": [
          "string"
        ],
        "include_extension": [
          "string"
```

```
        ],
        "include_shares": [
          "sh1",
          "share_cifs"
        ],
        "include_volumes": [
          "vol1",
          "vol_svm1"
        ]
      }
    }
  ]
}
```

### 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 |
|---|---|---|
| next | href | |
| self | href | |

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

fpolicy_engine_reference

FPolicy external engine

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | The name of the FPolicy external engine. |

fpolicy_event_reference

FPolicy events

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | |

scope

| Name | Type | Description |
|---|---|---|
| exclude_export_policies | array[string] | |
| exclude_extension | array[string] | |
| exclude_shares | array[string] | |
| exclude_volumes | array[string] | |
| include_export_policies | array[string] | |

| Name | Type | Description |
|---|---|---|
| include_extension | array[string] | |
| include_shares | array[string] | |
| include_volumes | array[string] | |

fpolicy_policy

| Name | Type | Description |
|---|---|---|
| enabled | boolean | Specifies if the policy is enabled on the SVM or not. If no value is mentioned for this field but priority is set, then this policy will be enabled. |
| engine | fpolicy_engine_reference | FPolicy external engine |
| events | array[fpolicy_event_reference] | |
| mandatory | boolean | Specifies what action to take on a file access event in a case when all primary and secondary servers are down or no response is received from the FPolicy servers within a given timeout period. When this parameter is set to true, file access events will be denied under these circumstances. |
| name | string | Specifies the name of the policy. |
| priority | integer | Specifies the priority that is assigned to this policy. |
| scope | scope | |

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 the FPolicy configuration for an SVM

POST `/protocols/fpolicy/{svm.uuid}/policies`

Creates an FPolicy policy configuration for the specified SVM. To create an FPolicy policy, you must specify the policy scope and the FPolicy events to be monitored.

Important notes:

- A single policy can monitor multiple events.
- An FPolicy engine is an optional field whose default value is set to native. A native engine can be used to simply block the file access based on the file extensions specified in the policy scope.
- To enable a policy, the policy priority must be specified. If the priority is not specified, the policy is created but it is not enabled.
- The "mandatory" field, if set to true, blocks the file access when the primary or secondary FPolicy servers are down.

### Required properties

- `svm.uuid` - Existing SVM in which to create the FPolicy policy.
- `events` - Name of the events to monitior.
- `name` - Name of the FPolicy policy.
- `scope` - Scope of the policy. Can be limited to exports, volumes, shares or file extensions.
- `priority`- Priority of the policy (ranging from 1 to 10).

### Default property values

- `mandatory` - *true*
- `engine` - *native*

### Related ONTAP commands

- `fpolicy policy scope create`
- `fpolicy policy create`

- `fpolicy enable`

### Learn more

- DOC /protocols/fpolicy/{svm.uuid}/policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| return_records | boolean | query | False | The default is false. If set to true, the records are returned. |
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |

### Request Body

| Name | Type | Description |
|---|---|---|
| engine | fpolicy_engine_reference | FPolicy external engine |
| events | array[fpolicy_event_reference] | |
| mandatory | boolean | Specifies what action to take on a file access event in a case when all primary and secondary servers are down or no response is received from the FPolicy servers within a given timeout period. When this parameter is set to true, file access events will be denied under these circumstances. |
| name | string | Specifies the name of the policy. |
| priority | integer | Specifies the priority that is assigned to this policy. |
| scope | scope | |

### Example request


```
{
  "enabled": null,
  "engine": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "string"
  },
  "events": [
    "event_nfs_close",
    "event_open"
  ],
  "name": "fp_policy_1",
  "scope": {
    "exclude_export_policies": [
      "string"
    ],
    "exclude_extension": [
      "string"
    ],
    "exclude_shares": [
      "string"
    ],
    "exclude_volumes": [
      "vol1",
      "vol_svm1",
      "*"
    ],
    "include_export_policies": [
      "string"
    ],
    "include_extension": [
      "string"
    ],
    "include_shares": [
      "sh1",
      "share_cifs"
    ],
    "include_volumes": [
      "vol1",
      "vol_svm1"
    ]
```

```
    }
  }
```

### Response

```
Status: 201, Created
```

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

**Example response**


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "enabled": null,
      "engine": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "string"
      },
      "events": [
        "event_nfs_close",
        "event_open"
      ],
      "name": "fp_policy_1",
      "scope": {
        "exclude_export_policies": [
          "string"
        ],
        "exclude_extension": [
          "string"
        ],
        "exclude_shares": [
          "string"
        ],
        "exclude_volumes": [
          "vol1",
          "vol_svm1",
          "*"
        ],
        "include_export_policies": [
          "string"
        ],
        "include_extension": [
```

```
          "string"
        ],
        "include_shares": [
          "sh1",
          "share_cifs"
        ],
        "include_volumes": [
          "vol1",
          "vol_svm1"
        ]
      }
    }
  ]
}
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 9765027 | FPolicy creation is successful but it cannot be enabled as the priority is already in use by another policy |
| 9764898 | An FPolicy policy cannot be created without defining its scope |

| 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 | |

fpolicy_engine_reference

FPolicy external engine

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | The name of the FPolicy external engine. |

fpolicy_event_reference

FPolicy events

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | |

scope

| Name | Type | Description |
|---|---|---|
| exclude_export_policies | array[string] | |
| exclude_extension | array[string] | |
| exclude_shares | array[string] | |
| exclude_volumes | array[string] | |
| include_export_policies | array[string] | |
| include_extension | array[string] | |
| include_shares | array[string] | |
| include_volumes | array[string] | |

fpolicy_policy

| Name | Type | Description |
|---|---|---|
| engine | fpolicy_engine_reference | FPolicy external engine |
| events | array[fpolicy_event_reference] | |
| mandatory | boolean | Specifies what action to take on a file access event in a case when all primary and secondary servers are down or no response is received from the FPolicy servers within a given timeout period. When this parameter is set to true, file access events will be denied under these circumstances. |
| name | string | Specifies the name of the policy. |
| priority | integer | Specifies the priority that is assigned to this policy. |
| scope | scope | |

_links

| Name | Type | Description |
|---|---|---|
| next | href | |
| self | href | |

error_arguments

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

error

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

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

## Delete an FPolicy configuration for an SVM

DELETE `/protocols/fpolicy/{svm.uuid}/policies/{name}`

Deletes a particular FPolicy policy configuration for a specified SVM. To delete a policy, you must first disable the policy.

### Related ONTAP commands

- `fpolicy policy scope delete`
- `fpolicy policy delete`

### Learn more

- DOC /protocols/fpolicy/{svm.uuid}/policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| name | string | path | True | |

### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 9764900 | Deletion of a cluster level FPolicy policy is not supported |
| 9764941 | Cannot delete an enabled FPolicy policy |

| 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 an FPolicy configuration for an SVM

GET `/protocols/fpolicy/{svm.uuid}/policies/{name}`

Retrieves a particular FPolicy policy configuration for a specified SVM. Cluster-level FPolicy policy configuration details cannot be retrieved for a data SVM.

### Related ONTAP commands

- `fpolicy policy show`
- `fpolicy policy scope show`
- `fpolicy show`

### Learn more

- DOC /protocols/fpolicy/{svm.uuid}/policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| name | string | path | True | |
| fields | array[string] | query | False | Specify the fields to return. |

### Response

```
Status: 200, Ok
```

| Name | Type | Description |
|---|---|---|
| enabled | boolean | Specifies if the policy is enabled on the SVM or not. If no value is mentioned for this field but priority is set, then this policy will be enabled. |
| engine | fpolicy_engine_reference | FPolicy external engine |
| events | array[fpolicy_event_reference] | |

| Name | Type | Description |
| --- | --- | --- |
| mandatory | boolean | Specifies what action to take on a file access event in a case when all primary and secondary servers are down or no response is received from the FPolicy servers within a given timeout period. When this parameter is set to true, file access events will be denied under these circumstances. |
| name | string | Specifies the name of the policy. |
| priority | integer | Specifies the priority that is assigned to this policy. |
| scope | scope | |

### Example response

```
{
  "engine": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "string"
  },
  "events": [
    "event_nfs_close",
    "event_open"
  ],
  "name": "fp_policy_1",
  "scope": {
    "exclude_export_policies": [
      "string"
    ],
    "exclude_extension": [
      "string"
    ],
    "exclude_shares": [
      "string"
    ],
    "exclude_volumes": [
      "vol1",
      "vol_svm1",
      "*"
    ],
    "include_export_policies": [
      "string"
    ],
    "include_extension": [
      "string"
    ],
    "include_shares": [
      "sh1",
      "share_cifs"
    ],
    "include_volumes": [
      "vol1",
      "vol_svm1"
    ]
  }
}
```

### 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 | |

fpolicy_engine_reference

FPolicy external engine

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | The name of the FPolicy external engine. |

fpolicy_event_reference

FPolicy events

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | |

scope

| Name | Type | Description |
|---|---|---|
| exclude_export_policies | array[string] | |
| exclude_extension | array[string] | |
| exclude_shares | array[string] | |
| exclude_volumes | array[string] | |
| include_export_policies | array[string] | |
| include_extension | array[string] | |
| include_shares | array[string] | |
| include_volumes | array[string] | |

error_arguments

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

error

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

## Update an FPolicy configuration for an SVM

PATCH `/protocols/fpolicy/{svm.uuid}/policies/{name}`

Updates a particular FPolicy policy configuration for a specified SVM. PATCH can be used to enable or disable the policy. When enabling a policy, you must specify the policy priority. The policy priority of the policy is not required when disabling the policy. If the policy is enabled, the FPolicy policy engine cannot be modified.

### Related ONTAP commands

- `fpolicy policy modify`
- `fpolicy policy scope modify`
- `fpolicy enable`
- `fpolicy disable`

### Learn more

- DOC /protocols/fpolicy/{svm.uuid}/policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| name | string | path | True | |

### Request Body

| Name | Type | Description |
|---|---|---|
| enabled | boolean | Specifies if the policy is enabled on the SVM or not. If no value is mentioned for this field but priority is set, then this policy will be enabled. |
| engine | fpolicy_engine_reference | FPolicy external engine |
| events | array[fpolicy_event_reference] | |
| mandatory | boolean | Specifies what action to take on a file access event in a case when all primary and secondary servers are down or no response is received from the FPolicy servers within a given timeout period. When this parameter is set to true, file access events will be denied under these circumstances. |
| priority | integer | Specifies the priority that is assigned to this policy. |
| scope | scope | |

### Example request

```
{
  "engine": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "string"
  },
  "events": [
    "event_nfs_close",
    "event_open"
  ],
  "scope": {
    "exclude_export_policies": [
      "string"
    ],
    "exclude_extension": [
      "string"
    ],
    "exclude_shares": [
      "string"
    ],
    "exclude_volumes": [
      "vol1",
      "vol_svm1",
      "*"
    ],
    "include_export_policies": [
      "string"
    ],
    "include_extension": [
      "string"
    ],
    "include_shares": [
      "sh1",
      "share_cifs"
    ],
    "include_volumes": [
      "vol1",
      "vol_svm1"
    ]
  }
}
```

### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
| --- | --- |
| 9765026 | The priority must be specified when enabling the FPolicy policy |
| 9765025 | Cannot disable an FPolicy policy when the priority is specified |
| 9764899 | Cannot modify an FPolicy engine when the policy is enabled |
| 9764899 | Deletion of a cluster policy is not supported |
| 9764908 | An FPolicy policy is already enabled |
| 9764907 | An FPolicy policy is already disabled |
| 9765029 | An FPolicy was modified but disable/enable failed as the policy is already disabled/enabled |

| 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 | |

fpolicy_engine_reference

FPolicy external engine

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | The name of the FPolicy external engine. |

fpolicy_event_reference

FPolicy events

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | |

scope

| Name | Type | Description |
|---|---|---|
| exclude_export_policies | array[string] | |
| exclude_extension | array[string] | |
| exclude_shares | array[string] | |
| exclude_volumes | array[string] | |
| include_export_policies | array[string] | |
| include_extension | array[string] | |
| include_shares | array[string] | |
| include_volumes | array[string] | |

fpolicy_policy

| Name | Type | Description |
|---|---|---|
| enabled | boolean | Specifies if the policy is enabled on the SVM or not. If no value is mentioned for this field but priority is set, then this policy will be enabled. |
| engine | fpolicy_engine_reference | FPolicy external engine |
| events | array[fpolicy_event_reference] | |
| mandatory | boolean | Specifies what action to take on a file access event in a case when all primary and secondary servers are down or no response is received from the FPolicy servers within a given timeout period. When this parameter is set to true, file access events will be denied under these circumstances. |
| priority | integer | Specifies the priority that is assigned to this policy. |
| scope | scope | |

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. |

# View NFS connected clients

## Protocols NFS connected-clients endpoint overview

### Overview

ONTAP connected clients show functionality is mainly used to provide a list of currently connected NFS clients. It also provides a potential list of other NFS clients that can be connected but are currently idle.

The following are details of the fields retrieved for the Connected Clients GET API:

node.name: The node name hosting this record; basically the node hosting the "server_ip". node.uuid: The node UUID hosting this record; basically the node hosting the "server_ip". svm.name: The svm name to which the "server_ip" belongs to. svm.uuid: The svm uuid to which the "server_ip" belongs to. server_ip: All clients that are connected to this interface are displayed in rows. client_ip: The IP address of the client that is connected to the interface. volume.name: The name of the volume the client is accessing. volume.uuid: The UUID of the volume the client is accessing. protocol: The NFS protocol version over which client is accessing the volume. idle_duration: The time elapsed since the last request was sent by the client for this volume. local_request_count: A counter that tracks requests that are sent to the volume with fast-path to local node. remote_request_count: A counter that tracks requests that are sent to the volume with slow-path to remote node.

### Example

#### Retrieves connected client information

```
# The API:
GET /protocols/nfs/connected-clients

# The call:
curl -X GET "https://<cluster-mgmt-ip>/api/protocols/nfs/connected-
clients?return_timeout=15&return_records=true" -H "accept:
application/json"

# The response:
{
"records": [
{
   "svm": {
     "uuid": "c642db55-b8d0-11e9-9ad1-0050568e8480",
     "name": "vs1"
   },
   "node": {
     "uuid": "cc282893-b82f-11e9-a3ad-0050568e8480",
     "name": "vsim1"
   },
   "server_ip": "10.140.72.214",
   "client_ip": "10.140.137.57",
   "volume": {
```

```
      "name": "rvol1",
      "uuid": "c6bbc6f2-b8d0-11e9-9ad1-0050568e8480"
    },
    "protocol": "nfs4"
  },
  {
    "svm": {
      "uuid": "c642db55-b8d0-11e9-9ad1-0050568e8480",
      "name": "vs1"
    },
    "node": {
      "uuid": "cc282893-b82f-11e9-a3ad-0050568e8480",
      "name": "vsim1"
    },
    "server_ip": "10.140.72.214",
    "client_ip": "10.140.137.57",
    "volume": {
      "name": "vol1",
      "uuid": "d28d1999-b8d0-11e9-9ad1-0050568e8480"
    },
    "protocol": "nfs3"
  },
  {
    "svm": {
      "uuid": "c642db55-b8d0-11e9-9ad1-0050568e8480",
      "name": "vs1"
    },
    "node": {
      "uuid": "cc282893-b82f-11e9-a3ad-0050568e8480",
      "name": "vsim1"
    },
    "server_ip": "10.140.72.214",
    "client_ip": "10.140.137.57",
    "volume": {
      "name": "vol1",
      "uuid": "d28d1999-b8d0-11e9-9ad1-0050568e8480"
    },
    "protocol": "nfs4"
  }],
  "num_records": 3
}
```


## Retrieve the NFS configuration for an SVM

GET `/protocols/nfs/connected-clients`

Retrieves the NFS configuration of SVMs.

### Learn more

- DOC /protocols/nfs/connected-clients

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| node.uuid | string | query | False | Filter by node.uuid |
| node.name | string | query | False | Filter by node.name |
| client_ip | string | query | False | Filter by client_ip |
| server_ip | string | query | False | Filter by server_ip |
| svm.uuid | string | query | False | Filter by svm.uuid |
| svm.name | string | query | False | Filter by svm.name |
| idle_duration | string | query | False | Filter by idle_duration |
| protocol | string | query | False | Filter by protocol |
| local_request_count | integer | query | False | Filter by local_request_count |
| volume.uuid | string | query | False | Filter by volume.uuid |
| volume.name | string | query | False | Filter by volume.name |
| remote_request_count | integer | query | False | Filter by remote_request_count |
| 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_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. |
| return_records | boolean | query | False | The default is true for GET calls. When set to false, only the number of records is returned. |
| 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[nfs_clients] | |

**Example response**


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "client_ip": "string",
      "idle_duration": "P4DT84H30M5S",
      "node": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "node1",
        "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
      },
      "protocol": "nfs3",
      "server_ip": "string",
      "svm": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "svm1",
        "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
      },
      "volume": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
```

```
        "name": "volume1",
        "uuid": "028baa66-41bd-11e9-81d5-00a0986138f7"
      }
    }
  ]
}
```


### 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 |
|---|---|---|
| next | href | |
| self | href | |

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

node

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | |
| uuid | string | |

svm

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

volume

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | The name of the volume. |

| Name | Type | Description |
|---|---|---|
| uuid | string | 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.<br>• example: 028baa66-41bd-11e9-81d5-00a0986138f7 |

nfs_clients

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| client_ip | string | Specifies IP address of the client. |
| idle_duration | string | Specifies an ISO-8601 format of date and time to retrieve the idle time duration in hours, minutes, and seconds format. |
| local_request_count | integer | A counter that tracks requests that are sent to the volume with fast-path to local node. |
| node | node | |
| protocol | string | The NFS protocol version over which client is accessing the volume. The following values are supported:<br>• nfs - All NFS versions are considered<br>• nfs3 - NFS version 3 protocol<br>• nfs4 - NFS version 4 protocol<br>• nfs4.1 - NFS version 4 minor version 1 protocol |
| remote_request_count | integer | A counter that tracks requests that are sent to the volume with slow-path to remote node. |
| server_ip | string | Specifies the IP address of the server. |
| svm | svm | |

| Name | Type | Description |
|---|---|---|
| volume | volume | |

error_arguments

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

error

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

# Manage NFS export policies

## Protocols NFS export-policies endpoint overview

### Export Policies

#### 1) Retrieve the export policy details

```
# The API:
GET /api/protocols/nfs/export-policies

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/nfs/export-policies"
```

#### 2) Create an export policy for an SVM

```
# The API:
POST /api/protocols/nfs/export-policies

# The call:
curl -d "@test_post_policy_single_rule.txt" -X POST "https://<mgmt-
ip>/api/protocols/nfs/export-policies"
test_post_policy_single_rule.txt(body):
{
"name": "P1",
"rules":[
  {
    "clients": [
      {
        "match": "host1"
      }
    ],
    "ro_rule": [
      "krb5"
    ],
    "rw_rule": [
      "ntlm"
    ],
    "anonymous_user": "anon1"
  },
  {
    "clients": [
      {
        "match": "host2"
      }
    ],
    "ro_rule": [
      "sys"
    ],
    "rw_rule": [
      "ntlm"
    ],
    "superuser": [
      "any"
    ]
  }
]
}
```

#### 3) Update an export policy for an SVM

```
# The API:
PATCH /api/protocols/nfs/export-policies/{policy.id}

# The call:
curl -d "@test_patch_policy.txt" -X PATCH "https://<mgmt-
ip>/api/protocols/nfs/export-policies/8589934594"
test_patch_policy.txt(body):
{
"name": "S1",
"rules":[
  {
    "clients": [
      {
        "match": "host4"
      }
    ],
    "ro_rule": [
      "krb5"
    ],
    "rw_rule": [
      "ntlm"
    ]
  }
]
}
```

#### 4) Delete an export policy for an SVM

```
# The API:
DELETE /api/protocols/nfs/export-policies/{policy.id}

# The call:
curl -X DELETE "https://<mgmt-ip>/api/protocols/nfs/export-
policies/8589934594"
```

### Export Rules

#### 1) Retrieve the export policy rule details for an export policy

```
# The API:
GET /api/protocols/nfs/export-policies/{policy.id}/rules

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/nfs/export-
policies/8589934595/rules"
```

#### 2) Create an export policy rule for an export policy

```
# The API:
POST /api/protocols/nfs/export-policies/{policy.id}/rules

# The call:
curl -d "<@test_patch_export_rule.txt>" -X POST "https://<mgmt-
ip>/api/protocols/nfs/export-policies/8589934595/rules"
test_patch_export_rule.txt(body):
{
"clients": [
  {
    "match": "host2"
  }
],
"ro_rule": [
  "sys"
],
"rw_rule": [
  "ntlm"
]
}
```

#### 3) Update an export policy rule for an export policy

```
# The API:
PATCH /api/protocols/nfs/export-policies/{policy.id}/rules/{index}

# The call:
curl -d "@test_patch_export_rule.txt" -X PATCH "https://<mgmt-
ip>/api/protocols/nfs/export-policies/8589934595/rules/5"
test_patch_export_rule.txt(body):
{
"new_index": "10",
"clients": [
  {
    "match": "host4"
  }
],
"ro_rule": [
  "sys"
],
"rw_rule": [
  "krb5"
]
}
```

#### 4) Delete an export policy rule for an export policy

```
# The API:
DELETE /api/protocols/nfs/export-policies/{policy.id}/rules/{index}

# The call:
curl -X DELETE "https://<mgmt-ip>/api/protocols/nfs/export-
policies/8589934595/rules/15"
```

### Export Clients

#### 1) Retrieve the export client matches of an export policy rule

```
# The API:
GET /api/protocols/nfs/export-policies/{policy.id}/rules/{index}/clients

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/nfs/export-
policies/8589934593/rules/2/clients"
```

#### 2) Add an export client match to an export policy rule

```
# The API:
POST /api/protocols/nfs/export-policies/{policy.id}/rules/{index}/clients

# The call:
curl -d "@add_client_match.txt"" -X POST "https://<mgmt-
ip>/api/protocols/nfs/export-policies/8589934593/rules/1/clients"
add_client_match.txt(body):
{
"match" : "host4"
}
```

#### 3) Delete an export client match from an export policy rule

```
# The API:
DELETE /api/protocols/nfs/export-
policies/{policy.id}/rules/{index}/clients/{match}

# The call:
curl -X DELETE "https://<mgmt-ip>/api/protocols/nfs/export-
policies/8589934593/rules/1/clients/host1,host2"
```

## Retrieve export policies

GET `/protocols/nfs/export-policies`

Retrieves export policies.

### Related ONTAP commands

- `vserver export-policy show`
- `vserver export-policy rule show`

### Learn more

- DOC /protocols/nfs/export-policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| rules.superuser | string | query | False | Filter by rules.superuser |
| rules.ro_rule | string | query | False | Filter by rules.ro_rule |
| rules.index | integer | query | False | Filter by rules.index |
| rules.protocols | string | query | False | Filter by rules.protocols |
| rules.rw_rule | string | query | False | Filter by rules.rw_rule |
| rules.anonymous_user | string | query | False | Filter by rules.anonymous_user |
| rules.clients.match | string | query | False | Filter by rules.clients.match |
| id | integer | query | False | Filter by id |
| svm.uuid | string | query | False | Filter by svm.uuid |
| svm.name | string | query | False | Filter by svm.name |
| name | string | query | False | Filter by name |
| fields | array[string] | query | False | Specify the fields to return. |
| max_records | integer | query | False | Limit the number of records returned. |

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

**Response**

```
Status: 200, Ok
```

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| num_records | integer | The number of export policy records |
| records | array[export_policy] | |

**Example response**


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "id": 0,
      "name": "string",
      "rules": [
        {
          "_links": {
            "self": {
              "href": "/api/resourcelink"
            }
          },
          "anonymous_user": "string",
          "clients": [
            {
              "match": "0.0.0.0/0"
            }
          ],
          "index": 0,
          "protocols": [
            "string"
          ],
          "ro_rule": [
            "string"
          ],
          "rw_rule": [
            "string"
          ],
          "superuser": [
            "string"
          ]
```

```
        }
      ],
      "svm": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "svm1",
        "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
      }
    }
  ]
}
```


### 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 |
|---|---|---|
| next | href | |
| self | href | |

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

export_client

| Name | Type | Description |
| --- | --- | --- |
| match | string | Client Match Hostname, IP Address, Netgroup, or Domain. You can specify the match as a string value in any of the following formats:<br>• As a hostname; for instance, host1<br>• As an IPv4 address; for instance, 10.1.12.24<br>• As an IPv6 address; for instance, fd20:8b1e:b255:4071::100:1<br>• As an IPv4 address with a subnet mask expressed as a number of bits; for instance, 10.1.12.0/24<br>• As an IPv6 address with a subnet mask expressed as a number of bits; for instance, fd20:8b1e:b255:4071::/64<br>• As an IPv4 address with a network mask; for instance, 10.1.16.0/255.255.255.0<br>• As a netgroup, with the netgroup name preceded by the @ character; for instance, @eng<br>• As a domain name preceded by the . character; for instance, .example.com |

export_rule

| Name | Type | Description |
| --- | --- | --- |
| _links | _links | |
| anonymous_user | string | User ID To Which Anonymous Users Are Mapped. |
| clients | array[export_client] | Array of client matches |
| index | integer | Index of the rule within the export policy. |
| protocols | array[string] | |

| Name | Type | Description |
|---|---|---|
| ro_rule | array[string] | Authentication flavors that the read-only access rule governs |
| rw_rule | array[string] | Authentication flavors that the read/write access rule governs |
| superuser | array[string] | Authentication flavors that the superuser security type governs |

svm

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

export_policy

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| id | integer | Export Policy ID |
| name | string | Export Policy Name |
| rules | array[export_rule] | Rules of the Export Policy. |
| svm | svm | |

error_arguments

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

error

| Name | Type | Description |
|---|---|---|
| arguments | array[error_arguments] | Message arguments |

| Name | Type | Description |
|---|---|---|
| code | string | Error code |
| message | string | Error message |
| target | string | The target parameter that caused the error. |

## Create an export policy

POST `/protocols/nfs/export-policies`

Creates an export policy. An SVM can have any number of export policies to define rules for which clients can access data exported by the SVM. A policy with no rules prohibits access.

### Required properties

- `svm.uuid` or `svm.name` - Existing SVM in which to create an export policy.
- `name` - Name of the export policy.

### Recommended optional properties

- `rules` - Rule(s) of an export policy. Used to create the export rule and populate the export policy with export rules in a single request.

### Related ONTAP commands

- `vserver export-policy create`
- `vserver export-policy rule create`

### Learn more

- DOC /protocols/nfs/export-policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| return_records | boolean | query | False | The default is false. If set to true, the records are returned. |

### Request Body

| Name | Type | Description |
| --- | --- | --- |
| _links | _links | |
| id | integer | Export Policy ID |
| name | string | Export Policy Name |
| rules | array[export_rule] | Rules of the Export Policy. |
| svm | svm | |

**Example request**


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "id": 0,
  "name": "string",
  "rules": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "anonymous_user": "string",
      "clients": [
        {
          "match": "0.0.0.0/0"
        }
      ],
      "index": 0,
      "protocols": [
        "string"
      ],
      "ro_rule": [
        "string"
      ],
      "rw_rule": [
        "string"
      ],
      "superuser": [
        "string"
      ]
    }
  ],
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
```

```
    }
  }
```

### Response

```
Status: 201, Created
```

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| num_records | integer | The number of export policy records |
| records | array[export_policy] | |

**Example response**


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "id": 0,
      "name": "string",
      "rules": [
        {
          "_links": {
            "self": {
              "href": "/api/resourcelink"
            }
          },
          "anonymous_user": "string",
          "clients": [
            {
              "match": "0.0.0.0/0"
            }
          ],
          "index": 0,
          "protocols": [
            "string"
          ],
          "ro_rule": [
            "string"
          ],
          "rw_rule": [
            "string"
          ],
          "superuser": [
            "string"
          ]
```

```
        }
      ],
      "svm": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "svm1",
        "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
      }
    }
  ]
}
```


### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 1703952 | Invalid ruleset name provided. No spaces allowed in a ruleset name |
| 1703954 | Export policy does not exist |
| 1704049 | Invalid clientmatch: clientmatch lists require an effective cluster version of Data ONTAP 9.0 or later. Upgrade all nodes to Data ONTAP 9.0 or above to use features that operate on lists of clientmatch strings in export-policy rules |
| 1704055 | Export policies are only supported for data Vservers |
| 3277000 | Upgrade all nodes to Data ONTAP 9.0.0 or above to use krb5p as a security flavor in export-policy rules |
| 3277083 | User ID is not valid. Enter a value for User ID from 0 to 4294967295 |

| 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 | |

export_client

| Name | Type | Description |
|---|---|---|
| match | string | Client Match Hostname, IP Address, Netgroup, or Domain. You can specify the match as a string value in any of the following formats:<br>• As a hostname; for instance, host1<br>• As an IPv4 address; for instance, 10.1.12.24<br>• As an IPv6 address; for instance, fd20:8b1e:b255:4071::100:1<br>• As an IPv4 address with a subnet mask expressed as a number of bits; for instance, 10.1.12.0/24<br>• As an IPv6 address with a subnet mask expressed as a number of bits; for instance, fd20:8b1e:b255:4071::/64<br>• As an IPv4 address with a network mask; for instance, 10.1.16.0/255.255.255.0<br>• As a netgroup, with the netgroup name preceded by the @ character; for instance, @eng<br>• As a domain name preceded by the . character; for instance, .example.com |

export_rule

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| anonymous_user | string | User ID To Which Anonymous Users Are Mapped. |
| clients | array[export_client] | Array of client matches |
| index | integer | Index of the rule within the export policy. |
| protocols | array[string] | |
| ro_rule | array[string] | Authentication flavors that the read-only access rule governs |
| rw_rule | array[string] | Authentication flavors that the read/write access rule governs |
| superuser | array[string] | Authentication flavors that the superuser security type governs |

svm

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

export_policy

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| id | integer | Export Policy ID |
| name | string | Export Policy Name |
| rules | array[export_rule] | Rules of the Export Policy. |
| svm | svm | |

export_client

| Name | Type | Description |
| --- | --- | --- |
| match | string | Client Match Hostname, IP Address, Netgroup, or Domain. You can specify the match as a string value in any of the following formats:<br>• As a hostname; for instance, host1<br>• As an IPv4 address; for instance, 10.1.12.24<br>• As an IPv6 address; for instance, fd20:8b1e:b255:4071::100:1<br>• As an IPv4 address with a subnet mask expressed as a number of bits; for instance, 10.1.12.0/24<br>• As an IPv6 address with a subnet mask expressed as a number of bits; for instance, fd20:8b1e:b255:4071::/64<br>• As an IPv4 address with a network mask; for instance, 10.1.16.0/255.255.255.0<br>• As a netgroup, with the netgroup name preceded by the @ character; for instance, @eng<br>• As a domain name preceded by the . character; for instance, .example.com |

_links

| Name | Type | Description |
| --- | --- | --- |
| next | href | |
| self | href | |

export_client

| Name | Type | Description |
| --- | --- | --- |
| match | string | Client Match Hostname, IP Address, Netgroup, or Domain. You can specify the match as a string value in any of the following formats:<br>• As a hostname; for instance, host1<br>• As an IPv4 address; for instance, 10.1.12.24<br>• As an IPv6 address; for instance, fd20:8b1e:b255:4071::100:1<br>• As an IPv4 address with a subnet mask expressed as a number of bits; for instance, 10.1.12.0/24<br>• As an IPv6 address with a subnet mask expressed as a number of bits; for instance, fd20:8b1e:b255:4071::/64<br>• As an IPv4 address with a network mask; for instance, 10.1.16.0/255.255.255.0<br>• As a netgroup, with the netgroup name preceded by the @ character; for instance, @eng<br>• As a domain name preceded by the . character; for instance, .example.com |

error_arguments

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

error

| Name | Type | Description |
| --- | --- | --- |
| arguments | array[error_arguments] | Message arguments |

| Name | Type | Description |
|---|---|---|
| code | string | Error code |
| message | string | Error message |
| target | string | The target parameter that caused the error. |

## Delete an export policy

DELETE `/protocols/nfs/export-policies/{id}`

Deletes an export policy.

### Related ONTAP commands

- `vserver export-policy delete`

### Learn more

- DOC /protocols/nfs/export-policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| id | integer | path | True | |

### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 1703944 | Failed to delete rule |
| 1703945 | Ruleset is in use by a volume. It cannot be deleted until all volumes that refer to it are first deleted |

| Error Code | Description |
| --- | --- |
| 1703946 | Cannot determine if the ruleset is in use by a volume. It cannot be deleted until all volumes that refer to it are first deleted |
| 1703947 | Cannot delete default ruleset. This ruleset will be deleted when the owning Vserver is deleted |
| 1703952 | Invalid ruleset name provided. No spaces are allowed in a ruleset name |
| 1703953 | This ruleset is in use by a qtree export policy. It cannot be deleted until all qtree policies that refer to it are first deleted |

| 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 an export policy

GET `/protocols/nfs/export-policies/{id}`

Retrieves an export policy.

### Related ONTAP commands

- `vserver export-policy show`
- `vserver export-policy rule show`

### Learn more

- DOC /protocols/nfs/export-policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| id | integer | path | True | Export Policy ID |
| fields | array[string] | query | False | Specify the fields to return. |

### Response

```
Status: 200, Ok
```

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| id | integer | Export Policy ID |
| name | string | Export Policy Name |
| rules | array[export_rule] | Rules of the Export Policy. |
| svm | svm | |

**Example response**


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "id": 0,
  "name": "string",
  "rules": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "anonymous_user": "string",
      "clients": [
        {
          "match": "0.0.0.0/0"
        }
      ],
      "index": 0,
      "protocols": [
        "string"
      ],
      "ro_rule": [
        "string"
      ],
      "rw_rule": [
        "string"
      ],
      "superuser": [
        "string"
      ]
    }
  ],
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
```

```
    }
}
```

### 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 | |

export_client

| Name | Type | Description |
|---|---|---|
| match | string | Client Match Hostname, IP Address, Netgroup, or Domain. You can specify the match as a string value in any of the following formats:<br>• As a hostname; for instance, host1<br>• As an IPv4 address; for instance, 10.1.12.24<br>• As an IPv6 address; for instance, fd20:8b1e:b255:4071::100:1<br>• As an IPv4 address with a subnet mask expressed as a number of bits; for instance, 10.1.12.0/24<br>• As an IPv6 address with a subnet mask expressed as a number of bits; for instance, fd20:8b1e:b255:4071::/64<br>• As an IPv4 address with a network mask; for instance, 10.1.16.0/255.255.255.0<br>• As a netgroup, with the netgroup name preceded by the @ character; for instance, @eng<br>• As a domain name preceded by the . character; for instance, .example.com |

export_rule

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| anonymous_user | string | User ID To Which Anonymous Users Are Mapped. |
| clients | array[export_client] | Array of client matches |
| index | integer | Index of the rule within the export policy. |
| protocols | array[string] | |
| ro_rule | array[string] | Authentication flavors that the read-only access rule governs |
| rw_rule | array[string] | Authentication flavors that the read/write access rule governs |
| superuser | array[string] | Authentication flavors that the superuser security type governs |

svm

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

error_arguments

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

error

| Name | Type | Description |
|---|---|---|
| arguments | array[error_arguments] | Message arguments |

| Name | Type | Description |
|---|---|---|
| code | string | Error code |
| message | string | Error message |
| target | string | The target parameter that caused the error. |

## Update export policy properties

PATCH `/protocols/nfs/export-policies/{id}`

Updates the properties of an export policy to change an export policy name or replace all export policy rules.

### Related ONTAP commands

- `vserver export-policy rename`
- `vserver export-policy rule delete`
- `vserver export-policy rule create`

### Learn more

- DOC /protocols/nfs/export-policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| id | integer | path | True | Export Policy ID |

### Request Body

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| id | integer | Export Policy ID |
| name | string | Export Policy Name |
| rules | array[export_rule] | Rules of the Export Policy. |
| svm | svm | |

**Example request**


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "id": 0,
  "name": "string",
  "rules": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "anonymous_user": "string",
      "clients": [
        {
          "match": "0.0.0.0/0"
        }
      ],
      "index": 0,
      "protocols": [
        "string"
      ],
      "ro_rule": [
        "string"
      ],
      "rw_rule": [
        "string"
      ],
      "superuser": [
        "string"
      ]
    }
  ],
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
```

```
    }
}
```

### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 1703950 | Failed to rename ruleset |
| 1703952 | Invalid ruleset name provided. No spaces are allowed in a ruleset name |

| 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 | |

export_client

| Name | Type | Description |
|---|---|---|
| match | string | Client Match Hostname, IP Address, Netgroup, or Domain. You can specify the match as a string value in any of the following formats:<br>• As a hostname; for instance, host1<br>• As an IPv4 address; for instance, 10.1.12.24<br>• As an IPv6 address; for instance, fd20:8b1e:b255:4071::100:1<br>• As an IPv4 address with a subnet mask expressed as a number of bits; for instance, 10.1.12.0/24<br>• As an IPv6 address with a subnet mask expressed as a number of bits; for instance, fd20:8b1e:b255:4071::/64<br>• As an IPv4 address with a network mask; for instance, 10.1.16.0/255.255.255.0<br>• As a netgroup, with the netgroup name preceded by the @ character; for instance, @eng<br>• As a domain name preceded by the . character; for instance, .example.com |

export_rule

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| anonymous_user | string | User ID To Which Anonymous Users Are Mapped. |
| clients | array[export_client] | Array of client matches |
| index | integer | Index of the rule within the export policy. |
| protocols | array[string] | |
| ro_rule | array[string] | Authentication flavors that the read-only access rule governs |
| rw_rule | array[string] | Authentication flavors that the read/write access rule governs |
| superuser | array[string] | Authentication flavors that the superuser security type governs |

svm

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

export_policy

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| id | integer | Export Policy ID |
| name | string | Export Policy Name |
| rules | array[export_rule] | Rules of the Export Policy. |
| svm | svm | |

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 export policy rules

GET `/protocols/nfs/export-policies/{policy.id}/rules`

Retrieves export policy rules.

### Related ONTAP commands

- `vserver export-policy rule show`

### Learn more

- DOC /protocols/nfs/export-policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| policy.id | integer | path | True | Export Policy ID |
| superuser | string | query | False | Filter by superuser |
| ro_rule | string | query | False | Filter by ro_rule |
| index | integer | query | False | Filter by index |
| protocols | string | query | False | Filter by protocols |

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

### Response

```
Status: 200, Ok
```

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

| Name | Type | Description |
| --- | --- | --- |
| num_records | integer | Number of Export Rule records |
| records | array[export_rule] | |

### Example response


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "anonymous_user": "string",
      "clients": [
        {
          "match": "0.0.0.0/0"
        }
      ],
      "index": 0,
      "protocols": [
        "string"
      ],
      "ro_rule": [
        "string"
      ],
      "rw_rule": [
        "string"
      ],
      "superuser": [
        "string"
      ]
    }
  ]
}
```


### Error

```
Status: Default, Error
```

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

#### Example error


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


#### Definitions

**See Definitions**

href

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

_links

| Name | Type | Description |
|---|---|---|
| next | href | |
| self | href | |

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

export_client

| Name | Type | Description |
| --- | --- | --- |
| match | string | Client Match Hostname, IP Address, Netgroup, or Domain. You can specify the match as a string value in any of the following formats:<br>• As a hostname; for instance, host1<br>• As an IPv4 address; for instance, 10.1.12.24<br>• As an IPv6 address; for instance, fd20:8b1e:b255:4071::100:1<br>• As an IPv4 address with a subnet mask expressed as a number of bits; for instance, 10.1.12.0/24<br>• As an IPv6 address with a subnet mask expressed as a number of bits; for instance, fd20:8b1e:b255:4071::/64<br>• As an IPv4 address with a network mask; for instance, 10.1.16.0/255.255.255.0<br>• As a netgroup, with the netgroup name preceded by the @ character; for instance, @eng<br>• As a domain name preceded by the . character; for instance, .example.com |

export_rule

| Name | Type | Description |
| --- | --- | --- |
| _links | _links | |
| anonymous_user | string | User ID To Which Anonymous Users Are Mapped. |
| clients | array[export_client] | Array of client matches |
| index | integer | Index of the rule within the export policy. |
| protocols | array[string] | |

| Name | Type | Description |
|---|---|---|
| ro_rule | array[string] | Authentication flavors that the read-only access rule governs |
| rw_rule | array[string] | Authentication flavors that the read/write access rule governs |
| superuser | array[string] | Authentication flavors that the superuser security type governs |

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 export policy rule

POST `/protocols/nfs/export-policies/{policy.id}/rules`

Creates an export policy rule.

### Required properties

- `policy.id` - Existing export policy for which to create an export rule.
- `clients.match` - List of clients (hostnames, ipaddresses, netgroups, domains) to which the export rule applies.
- `ro_rule` - Used to specify the security type for read-only access to volumes that use the export rule.
- `rw_rule` - Used to specify the security type for read-write access to volumes that use the export rule.

### Default property values

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

- `protocols` - *any*
- `anonymous_user` - *none*
- `superuser` - *any*

### Related ONTAP commands

- `vserver export-policy rule create`

### Learn more

- DOC /protocols/nfs/export-policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| return_records | boolean | query | False | The default is false. If set to true, the records are returned. |
| policy.id | integer | path | True | Export Policy ID |

### Request Body

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| anonymous_user | string | User ID To Which Anonymous Users Are Mapped. |
| clients | array[export_client] | Array of client matches |
| index | integer | Index of the rule within the export policy. |
| protocols | array[string] | |
| ro_rule | array[string] | Authentication flavors that the read-only access rule governs |
| rw_rule | array[string] | Authentication flavors that the read/write access rule governs |

| Name | Type | Description |
| --- | --- | --- |
| superuser | array[string] | Authentication flavors that the superuser security type governs |

**Example request**

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "anonymous_user": "string",
  "clients": [
    {
      "match": "0.0.0.0/0"
    }
  ],
  "index": 0,
  "protocols": [
    "string"
  ],
  "ro_rule": [
    "string"
  ],
  "rw_rule": [
    "string"
  ],
  "superuser": [
    "string"
  ]
}
```

**Response**

```
Status: 201, Created
```

| Name | Type | Description |
| --- | --- | --- |
| _links | _links | |
| num_records | integer | Number of Export Rule records |

| Name | Type | Description |
| --- | --- | --- |
| records | array[export_rule] | |

**Example response**


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "anonymous_user": "string",
      "clients": [
        {
          "match": "0.0.0.0/0"
        }
      ],
      "index": 0,
      "protocols": [
        "string"
      ],
      "ro_rule": [
        "string"
      ],
      "rw_rule": [
        "string"
      ],
      "superuser": [
        "string"
      ]
    }
  ]
}
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 1703954 | Export policy does not exist |
| 1704036 | Invalid clientmatch: missing domain name |
| 1704037 | Invalid clientmatch: missing network name |
| 1704038 | Invalid clientmatch: missing netgroup name |
| 1704039 | Invalid clientmatch |
| 1704040 | Invalid clientmatch: address bytes masked out by netmask are non-zero |
| 1704041 | Invalid clientmatch: address bytes masked to zero by netmask |
| 1704042 | Invalid clientmatch: too many bits in netmask |
| 1704043 | Invalid clientmatch: invalid netmask |
| 1704044 | Invalid clientmatch: invalid characters in host name |
| 1704045 | Invalid clientmatch: invalid characters in domain name |
| 1704050 | Invalid clientmatch: clientmatch list contains a duplicate string. Duplicate strings in a clientmatch list are not supported |
| 1704051 | Warning: Not adding any new strings to the clientmatch field for ruleindex. All of the match strings are already in the clientmatch list |
| 1704064 | Clientmatch host name too long |
| 1704065 | Clientmatch domain name too long |
| 3277000 | Upgrade all nodes to Data ONTAP 9.0.0 or above to use krb5p as a security flavor in export-policy rules |
| 3277083 | User ID is not valid. Enter a value for User ID from 0 to 4294967295 |

| 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 | |

export_client

| Name | Type | Description |
|---|---|---|
| match | string | Client Match Hostname, IP Address, Netgroup, or Domain. You can specify the match as a string value in any of the following formats:<br>• As a hostname; for instance, host1<br>• As an IPv4 address; for instance, 10.1.12.24<br>• As an IPv6 address; for instance, fd20:8b1e:b255:4071::100:1<br>• As an IPv4 address with a subnet mask expressed as a number of bits; for instance, 10.1.12.0/24<br>• As an IPv6 address with a subnet mask expressed as a number of bits; for instance, fd20:8b1e:b255:4071::/64<br>• As an IPv4 address with a network mask; for instance, 10.1.16.0/255.255.255.0<br>• As a netgroup, with the netgroup name preceded by the @ character; for instance, @eng<br>• As a domain name preceded by the . character; for instance, .example.com |

export_rule

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| anonymous_user | string | User ID To Which Anonymous Users Are Mapped. |
| clients | array[export_client] | Array of client matches |
| index | integer | Index of the rule within the export policy. |
| protocols | array[string] | |
| ro_rule | array[string] | Authentication flavors that the read-only access rule governs |
| rw_rule | array[string] | Authentication flavors that the read/write access rule governs |
| superuser | array[string] | Authentication flavors that the superuser security type governs |

_links

| Name | Type | Description |
|---|---|---|
| next | href | |
| self | href | |

error_arguments

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

error

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

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

## Delete an export policy rule

DELETE `/protocols/nfs/export-policies/{policy.id}/rules/{index}`

Deletes an export policy rule.

### Related ONTAP commands

- `vserver export-policy rule delete`

### Learn more

- DOC /protocols/nfs/export-policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| policy.id | integer | path | True | |
| index | integer | path | True | |

### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 1703945 | Ruleset is in use by a volume. It cannot be deleted until all volumes that refer to it are first deleted |
| 1703946 | Cannot determine if the ruleset is in use by a volume. It cannot be deleted until all volumes that refer to it are first deleted |
| 1703954 | Export policy does not exist |

| 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 an export policy rule

GET `/protocols/nfs/export-policies/{policy.id}/rules/{index}`

Retrieves an export policy rule

### Related ONTAP commands

- `vserver export-policy rule show`

### Learn more

- DOC /protocols/nfs/export-policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| policy.id | integer | path | True | Export Policy ID |
| index | integer | path | True | Export Rule Index |
| fields | array[string] | query | False | Specify the fields to return. |

### Response

```
Status: 200, Ok
```

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| anonymous_user | string | User ID To Which Anonymous Users Are Mapped. |
| clients | array[export_client] | Array of client matches |
| index | integer | Index of the rule within the export policy. |
| protocols | array[string] | |
| ro_rule | array[string] | Authentication flavors that the read-only access rule governs |
| rw_rule | array[string] | Authentication flavors that the read/write access rule governs |

| Name | Type | Description |
| --- | --- | --- |
| superuser | array[string] | Authentication flavors that the superuser security type governs |

**Example response**


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "anonymous_user": "string",
  "clients": [
    {
      "match": "0.0.0.0/0"
    }
  ],
  "index": 0,
  "protocols": [
    "string"
  ],
  "ro_rule": [
    "string"
  ],
  "rw_rule": [
    "string"
  ],
  "superuser": [
    "string"
  ]
}
```


**Error**

```
Status: Default, Error
```

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

### Example error


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


### Definitions

**See Definitions**

href

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

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

export_client

| Name | Type | Description |
|---|---|---|
| match | string | Client Match Hostname, IP Address, Netgroup, or Domain. You can specify the match as a string value in any of the following formats:<br>• As a hostname; for instance, host1<br>• As an IPv4 address; for instance, 10.1.12.24<br>• As an IPv6 address; for instance, fd20:8b1e:b255:4071::100:1<br>• As an IPv4 address with a subnet mask expressed as a number of bits; for instance, 10.1.12.0/24<br>• As an IPv6 address with a subnet mask expressed as a number of bits; for instance, fd20:8b1e:b255:4071::/64<br>• As an IPv4 address with a network mask; for instance, 10.1.16.0/255.255.255.0<br>• As a netgroup, with the netgroup name preceded by the @ character; for instance, @eng<br>• As a domain name preceded by the . character; for instance, .example.com |

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 the properties of an export policy rule

PATCH `/protocols/nfs/export-policies/{policy.id}/rules/{index}`

Updates the properties of an export policy rule to change an export policy rule's index or fields.

### Related ONTAP commands

- `vserver export-policy rule modify`
- `vserver export-policy rule setindex`

### Learn more

- DOC /protocols/nfs/export-policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| policy.id | integer | path | True | Export Policy ID |
| index | integer | path | True | Export Rule Index |
| new_index | integer | query | False | New Export Rule Index |

### Request Body

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| anonymous_user | string | User ID To Which Anonymous Users Are Mapped. |
| clients | array[export_client] | Array of client matches |
| index | integer | Index of the rule within the export policy. |
| protocols | array[string] | |
| ro_rule | array[string] | Authentication flavors that the read-only access rule governs |
| rw_rule | array[string] | Authentication flavors that the read/write access rule governs |
| superuser | array[string] | Authentication flavors that the superuser security type governs |

### Example request


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "anonymous_user": "string",
  "clients": [
    {
      "match": "0.0.0.0/0"
    }
  ],
  "index": 0,
  "protocols": [
    "string"
  ],
  "ro_rule": [
    "string"
  ],
  "rw_rule": [
    "string"
  ],
  "superuser": [
    "string"
  ]
}
```


### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
| --- | --- |
| 1703954 | Export policy does not exist |

| Error Code | Description |
| --- | --- |
| 1704036 | Invalid clientmatch: missing domain name |
| 1704037 | Invalid clientmatch: missing network name |
| 1704038 | Invalid clientmatch: missing netgroup name |
| 1704039 | Invalid clientmatch |
| 1704040 | Invalid clientmatch: address bytes masked out by netmask are non-zero |
| 1704041 | Invalid clientmatch: address bytes masked to zero by netmask |
| 1704042 | Invalid clientmatch: too many bits in netmask |
| 1704043 | Invalid clientmatch: invalid netmask |
| 1704044 | Invalid clientmatch: invalid characters in host name |
| 1704045 | Invalid clientmatch: invalid characters in domain name |
| 1704050 | Invalid clientmatch: clientmatch list contains a duplicate string. Duplicate strings in a clientmatch list are not supported |
| 1704051 | Warning: Not adding any new strings to the clientmatch field for ruleindex. All of the match strings are already in the clientmatch list |
| 1704064 | Clientmatch host name too long |
| 1704065 | Clientmatch domain name too long |
| 3277000 | Upgrade all nodes to Data ONTAP 9.0.0 or above to use krb5p as a security flavor in export-policy rules |
| 3277083 | User ID is not valid. Enter a value for User ID from 0 to 4294967295 |

| 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 | |

export_client

| Name | Type | Description |
|---|---|---|
| match | string | Client Match Hostname, IP Address, Netgroup, or Domain. You can specify the match as a string value in any of the following formats:<br>• As a hostname; for instance, host1<br>• As an IPv4 address; for instance, 10.1.12.24<br>• As an IPv6 address; for instance, fd20:8b1e:b255:4071::100:1<br>• As an IPv4 address with a subnet mask expressed as a number of bits; for instance, 10.1.12.0/24<br>• As an IPv6 address with a subnet mask expressed as a number of bits; for instance, fd20:8b1e:b255:4071::/64<br>• As an IPv4 address with a network mask; for instance, 10.1.16.0/255.255.255.0<br>• As a netgroup, with the netgroup name preceded by the @ character; for instance, @eng<br>• As a domain name preceded by the . character; for instance, .example.com |

export_rule

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| anonymous_user | string | User ID To Which Anonymous Users Are Mapped. |
| clients | array[export_client] | Array of client matches |
| index | integer | Index of the rule within the export policy. |
| protocols | array[string] | |
| ro_rule | array[string] | Authentication flavors that the read-only access rule governs |
| rw_rule | array[string] | Authentication flavors that the read/write access rule governs |
| superuser | array[string] | Authentication flavors that the superuser security type governs |

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 export policy rule clients

GET `/protocols/nfs/export-policies/{policy.id}/rules/{index}/clients`

Retrieves export policy rule clients.

### Learn more

- DOC /protocols/nfs/export-policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| 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. |
| return_timeout | integer | query | False | The number of seconds to allow the call to execute before returning. When iterating over a collection, the default is 15 seconds. ONTAP returns earlier if either max records or the end of the collection is reached. |
| order_by | array[string] | query | False | Order results by specified fields and optional [asc |
| desc] direction. Default direction is 'asc' for ascending. | policy.id | integer | path | True |
| Export Policy ID | index | integer | path | True |

### Response

```
Status: 200, Ok
```

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| num_records | integer | Number of export rule client records |
| records | array[export_client] | |

### Example response


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "match": "0.0.0.0/0"
    }
  ]
}
```


### 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 |
|---|---|---|
| next | href | |
| self | href | |

export_client

| Name | Type | Description |
| --- | --- | --- |
| match | string | Client Match Hostname, IP Address, Netgroup, or Domain. You can specify the match as a string value in any of the following formats:<br>• As a hostname; for instance, host1<br>• As an IPv4 address; for instance, 10.1.12.24<br>• As an IPv6 address; for instance, fd20:8b1e:b255:4071::100:1<br>• As an IPv4 address with a subnet mask expressed as a number of bits; for instance, 10.1.12.0/24<br>• As an IPv6 address with a subnet mask expressed as a number of bits; for instance, fd20:8b1e:b255:4071::/64<br>• As an IPv4 address with a network mask; for instance, 10.1.16.0/255.255.255.0<br>• As a netgroup, with the netgroup name preceded by the @ character; for instance, @eng<br>• As a domain name preceded by the . character; for instance, .example.com |

error_arguments

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

error

| Name | Type | Description |
| --- | --- | --- |
| arguments | array[error_arguments] | Message arguments |

| Name | Type | Description |
|---|---|---|
| code | string | Error code |
| message | string | Error message |
| target | string | The target parameter that caused the error. |

## Create an export policy rule client

POST `/protocols/nfs/export-policies/{policy.id}/rules/{index}/clients`

Creates an export policy rule client

### Required properties

- `policy.id` - Existing export policy that contains export policy rules for the client being added.
- `index` - Existing export policy rule for which to create an export client.
- `match` - Base name for the export policy client.

### Related ONTAP commands

- `vserver export-policy rule add-clientmatches`

### Learn more

- DOC /protocols/nfs/export-policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| return_records | boolean | query | False | The default is false. If set to true, the records are returned. |
| policy.id | integer | path | True | Export Policy ID |
| index | integer | path | True | Export Rule Index |

### Request Body

| Name | Type | Description |
| --- | --- | --- |
| match | string | Client Match Hostname, IP Address, Netgroup, or Domain. You can specify the match as a string value in any of the following formats:<br>• As a hostname; for instance, host1<br>• As an IPv4 address; for instance, 10.1.12.24<br>• As an IPv6 address; for instance, fd20:8b1e:b255:4071::100:1<br>• As an IPv4 address with a subnet mask expressed as a number of bits; for instance, 10.1.12.0/24<br>• As an IPv6 address with a subnet mask expressed as a number of bits; for instance, fd20:8b1e:b255:4071::/64<br>• As an IPv4 address with a network mask; for instance, 10.1.16.0/255.255.255.0<br>• As a netgroup, with the netgroup name preceded by the @ character; for instance, @eng<br>• As a domain name preceded by the . character; for instance, .example.com |

**Example request**

```
{
  "match": "0.0.0.0/0"
}
```

**Response**

```
Status: 201, Created
```

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| num_records | integer | Number of export rule client records |
| records | array[export_client] | |

**Example response**


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "match": "0.0.0.0/0"
    }
  ]
}
```


**Error**

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 1703954 | Export policy does not exist |
| 1704036 | Invalid clientmatch: missing domain name |
| 1704037 | Invalid clientmatch: missing network name |
| 1704038 | Invalid clientmatch: missing netgroup name |
| 1704039 | Invalid clientmatch |
| 1704040 | Invalid clientmatch: address bytes masked out by netmask are non-zero |

| Error Code | Description |
|---|---|
| 1704041 | Invalid clientmatch: address bytes masked to zero by netmask |
| 1704042 | Invalid clientmatch: too many bits in netmask |
| 1704043 | Invalid clientmatch: invalid netmask |
| 1704044 | Invalid clientmatch: invalid characters in host name |
| 1704045 | Invalid clientmatch: invalid characters in domain name |
| 1704050 | Invalid clientmatch: the clientmatch list contains a duplicate string. Duplicate strings in a clientmatch list are not supported |
| 1704051 | Warning: Not adding any new strings to the clientmatch field for ruleindex. All of the match strings are already in the clientmatch list |
| 1704064 | Clientmatch host name too long |
| 1704065 | Clientmatch domain name too long |

| 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**

export_client

| Name | Type | Description |
|---|---|---|
| match | string | Client Match Hostname, IP Address, Netgroup, or Domain. You can specify the match as a string value in any of the following formats:<br>• As a hostname; for instance, host1<br>• As an IPv4 address; for instance, 10.1.12.24<br>• As an IPv6 address; for instance, fd20:8b1e:b255:4071::100:1<br>• As an IPv4 address with a subnet mask expressed as a number of bits; for instance, 10.1.12.0/24<br>• As an IPv6 address with a subnet mask expressed as a number of bits; for instance, fd20:8b1e:b255:4071::/64<br>• As an IPv4 address with a network mask; for instance, 10.1.16.0/255.255.255.0<br>• As a netgroup, with the netgroup name preceded by the @ character; for instance, @eng<br>• As a domain name preceded by the . character; for instance, .example.com |

href

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

_links

| Name | Type | Description |
|---|---|---|
| next | href | |

| Name | Type | Description |
|---|---|---|
| self | href | |

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 an export policy client

DELETE `/protocols/nfs/export-policies/{policy.id}/rules/{index}/clients/{match}`

Deletes an export policy client

### Related ONTAP commands

- `vserver export-policy rule remove-clientmatches`

### Learn more

- DOC /protocols/nfs/export-policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| policy.id | integer | path | True | |
| index | integer | path | True | |
| match | string | path | True | |

### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 1703954 | Export policy does not exist |
| 1704036 | Invalid clientmatch: missing domain name |
| 1704037 | Invalid clientmatch: missing network name |
| 1704038 | Invalid clientmatch: missing netgroup name |
| 1704039 | Invalid clientmatch |
| 1704040 | Invalid clientmatch: address bytes masked out by netmask are non-zero |
| 1704041 | Invalid clientmatch: address bytes masked to zero by netmask |
| 1704042 | Invalid clientmatch: too many bits in netmask |
| 1704043 | Invalid clientmatch: invalid netmask |
| 1704044 | Invalid clientmatch: invalid characters in host name |
| 1704045 | Invalid clientmatch: invalid characters in domain name |
| 1704050 | Invalid clientmatch: the clientmatch list contains a duplicate string. Duplicate strings in a clientmatch list are not supported |
| 1704052 | Warning: Not removing any strings from the clientmatch field for ruleindex. None of the match strings were found in the clientmatch list |
| 1704064 | Clientmatch host name too long |
| 1704065 | Clientmatch domain name too long |

| 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. |

# View and update Kerberos interfaces

## Protocols NFS Kerberos interfaces endpoint overview

### Examples

#### Retrieving the Kerberos interface configuration details

```
# The API:
GET /api/protocols/nfs/kerberos/interfaces

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/nfs/kerberos/interfaces"
```

#### Updating the Kerberos interface configuration

```
# The API:
PATCH /api/protocols/nfs/kerberos/interfaces/{interface.uuid}

# The call:
curl -d "@test_patch_kerb_interface.txt" -X PATCH "https://<mgmt-
ip>/api/protocols/nfs/kerberos/interfaces/e62936de-7342-11e8-9eb4-
0050568be2b7"
test_patch_kerb_interface.txt(body):
{
 "enabled" : "true",
 "spn": "nfs/datalif1-vsim3-d1.sim.netapp.com@NFS-NSR-W01.RTP.NETAPP.COM",
 "user" :"administrator",
 "password" :"Hello123!"
}
```

## Retrieve Kerberos interfaces

GET `/protocols/nfs/kerberos/interfaces`

Retrieves Kerberos interfaces.

### Related ONTAP commands

- `vserver nfs kerberos interface show`

### Learn more

- DOC /protocols/nfs/kerberos/interfaces

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | query | False | Filter by svm.uuid |
| svm.name | string | query | False | Filter by svm.name |
| encryption_types | string | query | False | Filter by encryption_types |
| enabled | boolean | query | False | Filter by enabled |
| spn | string | query | False | Filter by spn |
| interface.name | string | query | False | Filter by interface.name |
| interface.ip.address | string | query | False | Filter by interface.ip.address |
| interface.uuid | string | query | False | Filter by interface.uuid |
| 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. |
| 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. |

| 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 | _links | |
| num_records | integer | Number of records |
| records | array[kerberos_interface] | |

### Example response

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "encryption_types": [
        "string"
      ],
      "interface": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "ip": {
          "address": "10.10.10.7"
        },
        "name": "lif1",
        "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
      },
      "spn": "string",
      "svm": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "svm1",
        "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
      }
    }
  ]
}
```

### 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 |
|---|---|---|
| next | href | |
| self | href | |

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

ip

IP information

| Name | Type | Description |
|---|---|---|
| address | string | IPv4 or IPv6 address |

interface

Network interface

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| ip | ip | IP information |
| name | string | The name of the interface. |
| uuid | string | The UUID that uniquely identifies the interface. |

svm

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

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

kerberos_interface

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| enabled | boolean | Specifies if Kerberos is enabled. |
| encryption_types | array[string] | |
| interface | interface | Network interface |
| spn | string | Service principal name. Valid in PATCH. |
| svm | svm | |

error_arguments

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

error

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

## Retrieve a Kerberos interface

GET `/protocols/nfs/kerberos/interfaces/{interface.uuid}`

Retrieves a Kerberos interface.

### Related ONTAP commands

- `vserver nfs kerberos interface show`

### Learn more

- DOC /protocols/nfs/kerberos/interfaces

### Parameters

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

### Response

```
Status: 200, Ok
```

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| enabled | boolean | Specifies if Kerberos is enabled. |
| encryption_types | array[string] | |
| interface | interface | Network interface |
| spn | string | Service principal name. Valid in PATCH. |
| svm | svm | |

### Example response


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "encryption_types": [
    "string"
  ],
  "interface": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "ip": {
      "address": "10.10.10.7"
    },
    "name": "lif1",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  },
  "spn": "string",
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  }
}
```


### 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 | |

ip

IP information

| Name | Type | Description |
|---|---|---|
| address | string | IPv4 or IPv6 address |

interface

Network interface

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| ip | ip | IP information |
| name | string | The name of the interface. |
| uuid | string | The UUID that uniquely identifies the interface. |

svm

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

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 Kerberos interface properties

PATCH `/protocols/nfs/kerberos/interfaces/{interface.uuid}`

Updates the properties of a Kerberos interface.

### Related ONTAP commands

- `vserver nfs kerberos interface modify`
- `vserver nfs kerberos interface enable`
- `vserver nfs kerberos interface disable`

### Learn more

- DOC /protocols/nfs/kerberos/interfaces

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| interface.uuid | string | path | True | Network interface UUID |

### Request Body

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

| Name | Type | Description |
| --- | --- | --- |
| enabled | boolean | Specifies if Kerberos is enabled. |
| encryption_types | array[string] | |
| interface | interface | Network interface |
| keytab_uri | string | Load keytab from URI |
| organizational_unit | string | Organizational unit |
| password | string | Account creation password |
| spn | string | Service principal name. Valid in PATCH. |
| svm | svm | |
| user | string | Account creation user name |

### Example request


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "encryption_types": [
    "string"
  ],
  "interface": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "ip": {
      "address": "10.10.10.7"
    },
    "name": "lif1",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  },
  "keytab_uri": "string",
  "organizational_unit": "string",
  "password": "string",
  "spn": "string",
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  },
  "user": "string"
}
```


### Response

```
Status: 200, Ok
```

**Error**

```
Status: Default
```

ONTAP Error Response codes

| Error codes | Description |
|---|---|
| 1966082 | LIF could not be found in database. Contact technical support for assistance. |
| 3276801 | Failed to bind service principal name on LIF. |
| 3276809 | Failed to disable NFS Kerberos on LIF. |
| 3276832 | Failed to insert Kerberos attributes to database. |
| 3276842 | Internal error. Failed to import Kerberos keytab file into the management databases. Contact technical support for assistance. |
| 3276861 | Kerberos is already enabled/disabled on this LIF. |
| 3276862 | Kerberos service principal name is required. |
| 3276889 | Failed to enable NFS Kerberos on LIF. |
| 3276937 | Failed to lookup the Vserver for the virtual interface. |
| 3276941 | Kerberos is a required field. |
| 3276942 | Service principal name is invalid. It must of the format:"nfs/<LIF-FQDN>@REALM"</LIF-FQDN> |
| 3276944 | Internal error. Reason: Failed to initialize the Kerberos context |
| 3276945 | Internal error. Reason: Failed to parse the service principal name |
| 3276951 | Warning: Skipping unsupported encryption type for service principal name |
| 3276952 | "organizational_unit" option cannot be used for "Other" vendor. |
| 3276965 | Account sharing across Vservers is not allowed. Use a different service principal name unique within the first 15 characters. |
| 3277019 | Cannot specify -force when enabling Kerberos. |
| 3277020 | Modifying the NFS Kerberos configuration for a LIF that is not configured for NFS is not supported. |
| 3277043 | Keytab import failed due to missing keys. Keys for encryption types are required for Vserver but found no matching keys for service principal name. Generate the keytab file with all required keys and try again. |

| 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 | |

ip

IP information

| Name | Type | Description |
|---|---|---|
| address | string | IPv4 or IPv6 address |

interface

Network interface

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| ip | ip | IP information |
| name | string | The name of the interface. |
| uuid | string | The UUID that uniquely identifies the interface. |

svm

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

kerberos_interface

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| enabled | boolean | Specifies if Kerberos is enabled. |
| encryption_types | array[string] | |
| interface | interface | Network interface |
| keytab_uri | string | Load keytab from URI |
| organizational_unit | string | Organizational unit |
| password | string | Account creation password |
| spn | string | Service principal name. Valid in PATCH. |
| svm | svm | |
| user | string | Account creation user name |

error_arguments

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

error

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

# Manage Kerberos realms

## Protocols NFS Kerberos realms endpoint overview

### Examples

#### Retrieving the Kerberos realm details

```
# The API:
GET /api/protocols/nfs/kerberos/realms

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/nfs/kerberos/realms"
```

#### Creating the Kerberos realm for an SVM

```
# The API:
POST /api/protocols/nfs/kerberos/realms

# The call:
curl -d "@test_post_kerb_realm.txt" -X POST "https://<mgmt-
ip>/api/protocols/nfs/kerberos/realms"
test_post_kerb_realm.txt(body):
{
"svm.uuid": "05c90dc2-7343-11e8-9eb4-0050568be2b7",
"name": "NFS-NSR-W02.RTP.NETAPP.COM",
  "kdc": {
    "vendor": "microsoft",
    "ip": "10.225.185.112",
    "port": 88
  },
  "comment": "realm",
  "ad_server": {
    "name": "nfs-nsr-w02.rtp.netapp.com",
    "address": "10.225.185.112"
  }
}
```

#### Updating the Kerberos realm for an SVM

```
# The API:
PATCH /api/protocols/nfs/kerberos/realms/{svm.uuid}/{name}

# The call:
curl -d "@test_patch_kerb_realm.txt" -X PATCH "https://<mgmt-
ip>/api/protocols/nfs/kerberos/realms/05c90dc2-7343-11e8-9eb4-
0050568be2b7/NFS-NSR-W02.RTP.NETAPP.COM"
test_patch_kerb_realm.txt(body):
{
"kdc": {
  "vendor": "Microsoft",
  "ip": "100.225.185.112",
  "port": 88
},
"comment": "realm modify",
"ad_server": {
  "name": "nfs.netapp.com",
  "address": "192.2.18.112"
}
}
```

#### Deleting the Kerberos realm for an SVM

```
# The API:
DELETE /api/protocols/nfs/kerberos/realms/{svm.uuid}/{name}

# The call:
curl -X DELETE "https://<mgmt-
ip>/api/protocols/nfs/kerberos/realms/05c90dc2-7343-11e8-9eb4-
0050568be2b7/NFS-NSR-W02.RTP.NETAPP.COM"
```

## Retrieve Kerberos realms

GET `/protocols/nfs/kerberos/realms`

Retrieves Kerberos realms.

#### Related ONTAP commands

- `vserver nfs kerberos realm show`

### Learn more

- DOC /protocols/nfs/kerberos/realms

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| encryption_types | string | query | False | Filter by encryption_types |
| comment | string | query | False | Filter by comment |
| name | string | query | False | Filter by name |
| ad_server.name | string | query | False | Filter by ad_server.name |
| ad_server.address | string | query | False | Filter by ad_server.address |
| kdc.vendor | string | query | False | Filter by kdc.vendor |
| kdc.ip | string | query | False | Filter by kdc.ip |
| kdc.port | integer | query | False | Filter by kdc.port |
| 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. |

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

### Response

```
Status: 200, Ok
```

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

**Example response**


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "ad_server": {
        "address": "1.2.3.4",
        "name": "string"
      },
      "comment": "string",
      "encryption_types": [
        "string"
      ],
      "kdc": {
        "ip": "1.2.3.4",
        "port": 88,
        "vendor": "string"
      },
      "name": "string",
      "svm": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "svm1",
        "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
      }
    }
  ]
}
```

### 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 |
|---|---|---|
| next | href | |
| self | href | |

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

ad_server

| Name | Type | Description |
|---|---|---|
| address | string | Active Directory server IP address |
| name | string | Active Directory server name |

kdc

| Name | Type | Description |
|---|---|---|
| ip | string | KDC IP address |
| port | integer | KDC port |
| vendor | string | Key Distribution Center (KDC) vendor. Following values are suported:<br>• microsoft - Microsoft Active Directory KDC<br>• other - MIT Kerberos KDC or other KDC |

svm

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

kerberos_realm

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| ad_server | ad_server | |
| comment | string | Comment |
| encryption_types | array[string] | |
| kdc | kdc | |
| name | string | Kerberos realm |
| svm | svm | |

error_arguments

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

error

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

## Create a Kerberos realm

POST `/protocols/nfs/kerberos/realms`

Creates a Kerberos realm.

### Required properties

- `svm.uuid` or `svm.name` - Existing SVM on which to create the Kerberos realm.
- `name` - Base name for the Kerberos realm.
- `kdc.vendor` - Vendor of the Key Distribution Center (KDC) server for this Kerberos realm. If the configuration uses a Microsoft Active Directory domain for authentication, this field nust be `microsoft`.
- `kdc.ip` - IP address of the KDC server for this Kerberos realm.

### Recommended optional properties

- `ad_server.name` - Host name of the Active Directory Domain Controller (DC). This is a mandatory parameter if the kdc-vendor is `microsoft`.
- `ad_server.address` - IP address of the Active Directory Domain Controller (DC). This is a mandatory parameter if the kdc-vendor is `microsoft`.

### Default property values

If not specified in POST, the following default property value is assigned:

- `kdc.port` - *88*

### Related ONTAP commands

- `vserver nfs kerberos realm create`

### Learn more

- DOC /protocols/nfs/kerberos/realms

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| return_records | boolean | query | False | The default is false. If set to true, the records are returned. |

### Request Body

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

| Name | Type | Description |
|---|---|---|
| ad_server | ad_server | |
| comment | string | Comment |
| encryption_types | array[string] | |
| kdc | kdc | |
| name | string | Kerberos realm |
| svm | svm | |

**Example request**


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "ad_server": {
    "address": "1.2.3.4",
    "name": "string"
  },
  "comment": "string",
  "encryption_types": [
    "string"
  ],
  "kdc": {
    "ip": "1.2.3.4",
    "port": 88,
    "vendor": "string"
  },
  "name": "string",
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  }
}
```

### Response

```
Status: 201, Created
```

### Error

```
Status: Default
```

ONTAP Error Response codes

| Error codes | Description |
|---|---|
| 2949121 | Active Directory server name required. |
| 2949122 | Active Directory server address required |
| 2949123 | Failed to create Kerberos realm. |
| 2949124 | Failed to create hosts file entry. |
| 3276949 | Kerberos realm creation failed. Reason: The parameters "ad_server.name" and "ad_server.address" are only valid when "kdc.vendor" is Microsoft |
| 3276976 | "realm" is a required input |
| 3276998 | Only the data Vservers can own NFS Kerberos realms. |

| 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 | |

ad_server

| Name | Type | Description |
|---|---|---|
| address | string | Active Directory server IP address |
| name | string | Active Directory server name |

kdc

| Name | Type | Description |
|---|---|---|
| ip | string | KDC IP address |
| port | integer | KDC port |
| vendor | string | Key Distribution Center (KDC) vendor. Following values are suported:<br>• microsoft - Microsoft Active Directory KDC<br>• other - MIT Kerberos KDC or other KDC |

svm

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

kerberos_realm

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| ad_server | ad_server | |
| comment | string | Comment |
| encryption_types | array[string] | |
| kdc | kdc | |
| name | string | Kerberos realm |
| svm | svm | |

error_arguments

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

error

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

## Delete a Kerberos realm

DELETE `/protocols/nfs/kerberos/realms/{svm.uuid}/{name}`

Deletes a Kerberos realm.

- `vserver nfs kerberos realm delete`

### Learn more

- DOC /protocols/nfs/kerberos/realms

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | |
| name | string | path | True | |

### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

ONTAP Error Response codes

| Error codes | Description |
|---|---|
| 1966125 | Failed to remove hosts entry. |
| 1966126 | Failed to lookup hosts entry. |
| 2949141 | Failed to lookup Kerberos realm. |
| 2949142 | Failed to remove Kerberos realm. |
| 3276942 | Service principal name is invalid. It must of the format:"nfs/<LIF-FQDN>@REALM\\\"</LIF-FQDN> |
| 3276976 | "realm" is a required input |
| 3276998 | Only the data Vservers can own NFS Kerberos realms. |

| 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 a Kerberos realm

GET `/protocols/nfs/kerberos/realms/{svm.uuid}/{name}`

Retrieves a Kerberos realm.

- `vserver nfs kerberos realm show`

### Learn more

- DOC /protocols/nfs/kerberos/realms

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | SVM UUID |
| name | string | path | True | Kerberos realm |
| fields | array[string] | query | False | Specify the fields to return. |

### Response

```
Status: 200, Ok
```

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| ad_server | ad_server | |
| comment | string | Comment |
| encryption_types | array[string] | |
| kdc | kdc | |
| name | string | Kerberos realm |
| svm | svm | |

### Example response


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "ad_server": {
    "address": "1.2.3.4",
    "name": "string"
  },
  "comment": "string",
  "encryption_types": [
    "string"
  ],
  "kdc": {
    "ip": "1.2.3.4",
    "port": 88,
    "vendor": "string"
  },
  "name": "string",
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  }
}
```


### 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 | |

ad_server

| Name | Type | Description |
|---|---|---|
| address | string | Active Directory server IP address |
| name | string | Active Directory server name |

kdc

| Name | Type | Description |
|---|---|---|
| ip | string | KDC IP address |
| port | integer | KDC port |
| vendor | string | Key Distribution Center (KDC) vendor. Following values are suported:<br>• microsoft - Microsoft Active Directory KDC<br>• other - MIT Kerberos KDC or other KDC |

svm

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

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 Kerberos realm properties

PATCH `/protocols/nfs/kerberos/realms/{svm.uuid}/{name}`

Updates the properties of a Kerberos realm.

- `vserver nfs kerberos realm modify`

### Learn more

- DOC /protocols/nfs/kerberos/realms

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | SVM UUID |
| name | string | path | True | Kerberos realm |

### Request Body

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

| Name | Type | Description |
|---|---|---|
| comment | string | Comment |
| encryption_types | array[string] | |
| kdc | kdc | |
| name | string | Kerberos realm |
| svm | svm | |

**Example request**


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "ad_server": {
    "address": "1.2.3.4",
    "name": "string"
  },
  "comment": "string",
  "encryption_types": [
    "string"
  ],
  "kdc": {
    "ip": "1.2.3.4",
    "port": 88,
    "vendor": "string"
  },
  "name": "string",
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  }
}
```

### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

ONTAP Error Response codes

| Error codes | Description |
|---|---|
| 1966125 | Failed to remove hosts entry. |
| 1966126 | Failed to lookup hosts entry. |
| 1966131 | Failed to create hosts entry. |
| 1966132 | Failed to modify hosts entry. |
| 2949121 | Active Directory server name required. |
| 2949122 | Active Directory server address required |
| 2949123 | Failed to create Kerberos realm. |
| 2949124 | Failed to create hosts file entry. |
| 2949141 | Failed to lookup Kerberos realm. |
| 2949148 | Failed to modify Kerberos realm. |
| 3276976 | "realm" is a required input |
| 3276998 | Only the data Vservers can own NFS Kerberos realms. |

| 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 | |

ad_server

| Name | Type | Description |
|---|---|---|
| address | string | Active Directory server IP address |
| name | string | Active Directory server name |

kdc

| Name | Type | Description |
|---|---|---|
| ip | string | KDC IP address |
| port | integer | KDC port |
| vendor | string | Key Distribution Center (KDC) vendor. Following values are suported:<br>• microsoft - Microsoft Active Directory KDC<br>• other - MIT Kerberos KDC or other KDC |

svm

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

kerberos_realm

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| ad_server | ad_server | |
| comment | string | Comment |
| encryption_types | array[string] | |
| kdc | kdc | |
| name | string | Kerberos realm |
| svm | svm | |

error_arguments

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

error

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

# Manage NFS services

## Protocols NFS services endpoint overview

#### Retrieving an NFS configuration

```
# The API:
GET /api/protocols/nfs/services

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/nfs/services"
```

#### Creating an NFS configuration for an SVM

```
# The API:
POST /api/protocols/nfs/services

# The call:
curl  -d "@test_nfs_post.txt" -X POST "https://<mgmt-
ip>/api/protocols/nfs/services"
test_nfs_post.txt(body):
{
"svm": {
  "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
},
"protocol": {
  "v4_id_domain": "nfs-nsr-w01.rtp.netapp.com"
},
"vstorage_enabled": "true"
}
```

#### Updating an  NFS configuration for an SVM

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

# The call:
curl -d "@test_nfs_patch.txt" -X PATCH "https://<mgmt-
ip>/api/protocols/nfs/services/4a415601-548c-11e8-a21d-0050568bcbc9"
test_nfs_patch.txt(body):
{
"protocol": {
  "v4_id_domain": "nfs-nsr-w01.rtp.netapp.com"
},
"vstorage_enabled": "false"
}
```

#### Deleting an NFS configuration for an SVM

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

# The call:
curl -X DELETE "https://<mgmt-ip>/api/protocols/nfs/services/4a415601-
548c-11e8-a21d-0050568bcbc9"
```

#### 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.

## Retrieve NFS configuration for SVMs

GET `/protocols/nfs/services`

Retrieves the NFS configuration of SVMs.

#### Expensive properties

There is an added 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 DOC Requesting specific fields to learn more.

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

#### Related ONTAP commands

- `vserver nfs show`
- `vserver nfs status`

#### Learn more

- DOC /protocols/nfs/services

#### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | query | False | Filter by svm.uuid |
| svm.name | string | query | False | Filter by svm.name |

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| enabled | boolean | query | False | Filter by enabled |
| statistics.v3.status | string | query | False | Filter by statistics.v3.status |
| statistics.v3.latency_raw.other | integer | query | False | Filter by statistics.v3.latency_raw.other |
| statistics.v3.latency_raw.write | integer | query | False | Filter by statistics.v3.latency_raw.write |
| statistics.v3.latency_raw.read | integer | query | False | Filter by statistics.v3.latency_raw.read |
| statistics.v3.latency_raw.total | integer | query | False | Filter by statistics.v3.latency_raw.total |
| statistics.v3.timestamp | string | query | False | Filter by statistics.v3.timestamp |
| statistics.v3.throughput_raw.read | integer | query | False | Filter by statistics.v3.throughput_raw.read |
| statistics.v3.throughput_raw.write | integer | query | False | Filter by statistics.v3.throughput_raw.write |
| statistics.v3.throughput_raw.total | integer | query | False | Filter by statistics.v3.throughput_raw.total |
| statistics.v3.iops_raw.other | integer | query | False | Filter by statistics.v3.iops_raw.other |
| statistics.v3.iops_raw.write | integer | query | False | Filter by statistics.v3.iops_raw.write |

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| statistics.v3.iops_raw.read | integer | query | False | Filter by statistics.v3.iops_raw.read |
| statistics.v3.iops_raw.total | integer | query | False | Filter by statistics.v3.iops_raw.total |
| metric.v3.duration | string | query | False | Filter by metric.v3.duration |
| metric.v3.latency.other | integer | query | False | Filter by metric.v3.latency.other |
| metric.v3.latency.write | integer | query | False | Filter by metric.v3.latency.write |
| metric.v3.latency.read | integer | query | False | Filter by metric.v3.latency.read |
| metric.v3.latency.total | integer | query | False | Filter by metric.v3.latency.total |
| metric.v3.throughput.read | integer | query | False | Filter by metric.v3.throughput.read |
| metric.v3.throughput.write | integer | query | False | Filter by metric.v3.throughput.write |
| metric.v3.throughput.total | integer | query | False | Filter by metric.v3.throughput.total |
| metric.v3.timestamp | string | query | False | Filter by metric.v3.timestamp |
| metric.v3.iops.other | integer | query | False | Filter by metric.v3.iops.other |
| metric.v3.iops.write | integer | query | False | Filter by metric.v3.iops.write |

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| metric.v3.iops.read | integer | query | False | Filter by metric.v3.iops.read |
| metric.v3.iops.total | integer | query | False | Filter by metric.v3.iops.total |
| metric.v3.status | string | query | False | Filter by metric.v3.status |
| state | string | query | False | Filter by state |
| transport.tcp_enabled | boolean | query | False | Filter by transport.tcp_enabled |
| transport.udp_enabled | boolean | query | False | Filter by transport.udp_enabled |
| vstorage_enabled | boolean | query | False | Filter by vstorage_enabled |
| protocol.v40_enabled | boolean | query | False | Filter by protocol.v40_enabled |
| protocol.v40_features.acl_enabled | boolean | query | False | Filter by protocol.v40_features.acl_enabled |
| protocol.v40_features.read_delegation_enabled | boolean | query | False | Filter by protocol.v40_features.read_delegation_enabled |
| protocol.v40_features.write_delegation_enabled | boolean | query | False | Filter by protocol.v40_features.write_delegation_enabled |
| protocol.v41_enabled | boolean | query | False | Filter by protocol.v41_enabled |
| protocol.v4_id_domain | string | query | False | Filter by protocol.v4_id_domain |

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| protocol.v41_features.pnfs_enabled | boolean | query | False | Filter by protocol.v41_features.pnfs_enabled |
| protocol.v41_features.read_delegation_enabled | boolean | query | False | Filter by protocol.v41_features.read_delegation_enabled |
| protocol.v41_features.write_delegation_enabled | boolean | query | False | Filter by protocol.v41_features.write_delegation_enabled |
| protocol.v41_features.acl_enabled | boolean | query | False | Filter by protocol.v41_features.acl_enabled |
| protocol.v3_enabled | boolean | query | False | Filter by protocol.v3_enabled |
| fields | array[string] | query | False | Specify the fields to return. |
| max_records | integer | query | False | Limit the number of records returned. |
| return_timeout | integer | query | False | The number of seconds to allow the call to execute before returning. When iterating over a collection, the default is 15 seconds. ONTAP returns earlier if either max records or the end of the collection is reached. |
| return_records | boolean | query | False | The default is true for GET calls. When set to false, only the number of records is returned. |

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| 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 NFS Server Records |
| records | array[nfs_service] | |

**Example response**


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "metric": {
        "v3": {
          "_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 UTC"
        }
      },
      "protocol": {
```

```
        "v4_id_domain": "string"
      },
      "state": "string",
      "statistics": {
        "v3": {
          "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 UTC"
        }
      },
      "svm": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "svm1",
        "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
      }
    }
  ]
}
```


### 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 |
|---|---|---|
| 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 | Peformance 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 | Peformance 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 | Peformance metric for write I/O operations. |

v3

The NFSv3 operations

| 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. |

metric

Historical performance numbers, such as IOPS latency and throughput, for SVM-NFS protocol.

| Name | Type | Description |
|---|---|---|
| v3 | v3 | The NFSv3 operations |

v40_features

| Name | Type | Description |
| --- | --- | --- |
| acl_enabled | boolean | Specifies whether NFSv4.0 ACLs is enabled. |
| read_delegation_enabled | boolean | Specifies whether NFSv4.0 Read Delegation is enabled. |
| write_delegation_enabled | boolean | Specifies whether NFSv4.0 Write Delegation is enabled. |

v41_features

| Name | Type | Description |
| --- | --- | --- |
| acl_enabled | boolean | Specifies whether NFSv4.1 ACLs is enabled. |
| pnfs_enabled | boolean | Specifies whether NFSv4.1 Parallel NFS is enabled. |
| read_delegation_enabled | boolean | Specifies whether NFSv4.1 Read Delegation is enabled. |
| write_delegation_enabled | boolean | Specifies whether NFSv4.1 Write Delegation is enabled. |

protocol

| Name | Type | Description |
| --- | --- | --- |
| v3_enabled | boolean | Specifies whether NFSv3 protocol is enabled. |
| v40_enabled | boolean | Specifies whether NFSv4.0 protocol is enabled. |
| v40_features | v40_features | |
| v41_enabled | boolean | Specifies whether NFSv4.1 protocol is enabled. |
| v41_features | v41_features | |
| v4_id_domain | string | Specifies the domain portion of the string form of user and group names as defined by the NFSv4 protocol. |

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. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Peformance 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 | Peformance 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 | Peformance metric for write I/O operations. |

v3

The NFSv3 operations

| 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. |

| 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_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. |

statistics

Realtime performance numbers, such as IOPS latency and throughput, for SVM-NFS protocol.

| Name | Type | Description |
| --- | --- | --- |
| v3 | v3 | The NFSv3 operations |

svm

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

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

transport

| Name | Type | Description |
|---|---|---|
| tcp_enabled | boolean | Specifies whether TCP transports are enabled on the server. |
| udp_enabled | boolean | Specifies whether UDP transports are enabled on the server. |

nfs_service

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| enabled | boolean | Specifies if the NFS service is administratively enabled. |
| metric | metric | Historical performance numbers, such as IOPS latency and throughput, for SVM-NFS protocol. |
| protocol | protocol | |
| state | string | Specifies the state of the NFS service on the SVM. The following values are supported: * online - NFS server is ready to accept client requests. * offline - NFS server is not ready to accept client requests. |
| statistics | statistics | Realtime performance numbers, such as IOPS latency and throughput, for SVM-NFS protocol. |
| svm | svm | |
| transport | transport | |
| vstorage_enabled | boolean | Specifies whether VMware vstorage feature is enabled. |

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 NFS configuration for an SVM

POST `/protocols/nfs/services`

Creates an NFS configuration for an SVM.

### Required properties

- `svm.uuid` or `svm.name` - Existing SVM for which to create the NFS configuration.

### Default property values

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

- `enabled` - *true*
- `state` - online
- `transport.udp_enabled` - *true*
- `transport.tcp_enabled` - *true*
- `protocol.v3_enabled` - *true*
- `protocol.v4_id_domain` - defaultv4iddomain.com
- `protocol.v4_enabled` - *false*
- `protocol.v41_enabled` - *false*
- `protocol.v40_features.acl_enabled` - *false*

- `protocol.v40_features.read_delegation_enabled` - *false*
- `protocol.v40_features.write_delegation_enabled` - *false*
- `protocol.v41_features.acl_enabled` - *false*
- `protocol.v41_features.read_delegation_enabled` - *false*
- `protocol.v41_features.write_delegation_enabled` - *false*
- `protocol.v41_features.pnfs_enabled` - *false*
- `vstorage_enabled` - *false*

### Related ONTAP commands

- `vserver nfs create`

### Learn more

- DOC /protocols/nfs/services

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| return_records | boolean | query | False | The default is false. If set to true, the records are returned. |

### Request Body

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| enabled | boolean | Specifies if the NFS service is administratively enabled. |
| metric | metric | Historical performance numbers, such as IOPS latency and throughput, for SVM-NFS protocol. |
| protocol | protocol | |
| state | string | Specifies the state of the NFS service on the SVM. The following values are supported: * online - NFS server is ready to accept client requests. * offline - NFS server is not ready to accept client requests. |

| Name | Type | Description |
| --- | --- | --- |
| statistics | statistics | Realtime performance numbers, such as IOPS latency and throughput, for SVM-NFS protocol. |
| svm | svm | |
| transport | transport | |
| vstorage_enabled | boolean | Specifies whether VMware vstorage feature is enabled. |

**Example request**


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "metric": {
    "v3": {
      "_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 UTC"
    }
  },
  "protocol": {
    "v4_id_domain": "string"
  },
  "state": "string",
  "statistics": {
    "v3": {
      "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 UTC"
    }
  },
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  }
}
```


**Response**

```
Status: 201, Created
```

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| num_records | integer | Number of NFS Server Records |
| records | array[nfs_service] | |

**Example response**


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "metric": {
        "v3": {
          "_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 UTC"
        }
      },
      "protocol": {
```

```
        "v4_id_domain": "string"
      },
      "state": "string",
      "statistics": {
        "v3": {
          "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 UTC"
        }
      },
      "svm": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "svm1",
        "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
      }
    }
  ]
}
```


**Error**

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
| --- | --- |
| 3276916 | Vserver is not running |
| 3276994 | Kerberos must be disabled on all LIFs on Vserver before adding or removing AES encryption. Disable Kerberos on the LIF and try again |
| 3277038 | Cannot enable \"showmount\" feature because it requires an effective cluster version of Data ONTAP 8.3.0 or later |
| 3277049 | Cannot enable \"showmount\" feature on ID-Discard Vserver. Ensure that the Vserver is initialized and retry the command |
| 3277052 | NFSv4.x access to transitioned volumes in this Vserver could trigger conversion of non-Unicode directories to Unicode, which might impact data-serving performance. Before enabling NFSv4.x for this Vserver, refer to the Data and Configuration Transition Guide |
| 3277069 | Cannot disable TCP because the SnapDiff RPC server is in the \"on\" state |
| 3277089 | Attempting to create an NFS server using 64-bits for NFSv3 FSIDs and File IDs on Vserver. Older client software might not work with 64-bit identifiers |
| 3277099 | Domain name contains invalid characters or it is too short. Allowed characters are: alphabetical characters (A-Za-z), numeric characters (0-9), minus sign (-), and the period (.). The first character must be alphabetical or numeric, last character must not be a minus sign or a period. Minimum supported length: 2 characters, maximum of 256 characters |

| 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 | |

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 | Peformance 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 | Peformance 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 | Peformance metric for write I/O operations. |

v3

The NFSv3 operations

| 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. |

metric

Historical performance numbers, such as IOPS latency and throughput, for SVM-NFS protocol.

| Name | Type | Description |
| --- | --- | --- |
| v3 | v3 | The NFSv3 operations |

v40_features

| Name | Type | Description |
| --- | --- | --- |
| acl_enabled | boolean | Specifies whether NFSv4.0 ACLs is enabled. |
| read_delegation_enabled | boolean | Specifies whether NFSv4.0 Read Delegation is enabled. |

| Name | Type | Description |
|---|---|---|
| write_delegation_enabled | boolean | Specifies whether NFSv4.0 Write Delegation is enabled. |

v41_features

| Name | Type | Description |
|---|---|---|
| acl_enabled | boolean | Specifies whether NFSv4.1 ACLs is enabled. |
| pnfs_enabled | boolean | Specifies whether NFSv4.1 Parallel NFS is enabled. |
| read_delegation_enabled | boolean | Specifies whether NFSv4.1 Read Delegation is enabled. |
| write_delegation_enabled | boolean | Specifies whether NFSv4.1 Write Delegation is enabled. |

protocol

| Name | Type | Description |
|---|---|---|
| v3_enabled | boolean | Specifies whether NFSv3 protocol is enabled. |
| v40_enabled | boolean | Specifies whether NFSv4.0 protocol is enabled. |
| v40_features | v40_features | |
| v41_enabled | boolean | Specifies whether NFSv4.1 protocol is enabled. |
| v41_features | v41_features | |
| v4_id_domain | string | Specifies the domain portion of the string form of user and group names as defined by the NFSv4 protocol. |

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. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Peformance 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 | Peformance 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. |

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

v3

The NFSv3 operations

| 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. |

| 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_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. |

statistics

Realtime performance numbers, such as IOPS latency and throughput, for SVM-NFS protocol.

| Name | Type | Description |
|---|---|---|
| v3 | v3 | The NFSv3 operations |

svm

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

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

transport

| Name | Type | Description |
|---|---|---|
| tcp_enabled | boolean | Specifies whether TCP transports are enabled on the server. |
| udp_enabled | boolean | Specifies whether UDP transports are enabled on the server. |

nfs_service

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| enabled | boolean | Specifies if the NFS service is administratively enabled. |
| metric | metric | Historical performance numbers, such as IOPS latency and throughput, for SVM-NFS protocol. |
| protocol | protocol | |
| state | string | Specifies the state of the NFS service on the SVM. The following values are supported: * online - NFS server is ready to accept client requests. * offline - NFS server is not ready to accept client requests. |
| statistics | statistics | Realtime performance numbers, such as IOPS latency and throughput, for SVM-NFS protocol. |
| svm | svm | |
| transport | transport | |
| vstorage_enabled | boolean | Specifies whether VMware vstorage feature is enabled. |

_links

| Name | Type | Description |
|---|---|---|
| next | href | |
| self | href | |

nfs_service

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| enabled | boolean | Specifies if the NFS service is administratively enabled. |
| metric | metric | Historical performance numbers, such as IOPS latency and throughput, for SVM-NFS protocol. |
| protocol | protocol | |
| state | string | Specifies the state of the NFS service on the SVM. The following values are supported:<br>• online - NFS server is ready to accept client requests.<br>• offline - NFS server is not ready to accept client requests. |
| statistics | statistics | Realtime performance numbers, such as IOPS latency and throughput, for SVM-NFS protocol. |
| svm | svm | |
| transport | transport | |
| vstorage_enabled | boolean | Specifies whether VMware vstorage feature is enabled. |

error_arguments

| Name | Type | Description |
|---|---|---|
| code | string | Argument code |

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

error

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

## Delete NFS configuration for an SVM

DELETE `/protocols/nfs/services/{svm.uuid}`

Deletes the NFS configuration of an SVM.

### Related ONTAP commands

- `vserver nfs delete`

### Learn more

- DOC /protocols/nfs/services

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | |

### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 3276916 | Vserver is not running |
| 3277008 | NFS Kerberos must be disabled on all LIFs of Vserver before deleting the NFS configuration. When all LIFs are disabled, try the operation |
| 3277009 | NFS Kerberos realms associated with the Vserver are deleted |
| 3277111 | Internal error. Failed to remove NFS-specific security trace filter for Vserver |
| 3277112 | Internal error. Failed to modify the protocols field of a security trace filter for Vserver |

| 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 NFS configuration for an SVM

GET `/protocols/nfs/services/{svm.uuid}`

Retrieves the NFS configuration of an SVM.

#### Related ONTAP commands

- `vserver nfs show`
- `vserver nfs status`

#### Learn more

- DOC /protocols/nfs/services

#### Parameters

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

### Response

```
Status: 200, Ok
```

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| enabled | boolean | Specifies if the NFS service is administratively enabled. |
| metric | metric | Historical performance numbers, such as IOPS latency and throughput, for SVM-NFS protocol. |
| protocol | protocol | |
| state | string | Specifies the state of the NFS service on the SVM. The following values are supported:<br>• online - NFS server is ready to accept client requests.<br>• offline - NFS server is not ready to accept client requests. |
| statistics | statistics | Realtime performance numbers, such as IOPS latency and throughput, for SVM-NFS protocol. |
| svm | svm | |
| transport | transport | |
| vstorage_enabled | boolean | Specifies whether VMware vstorage feature is enabled. |

**Example response**


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "metric": {
    "v3": {
      "_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 UTC"
    }
  },
  "protocol": {
    "v4_id_domain": "string"
  },
  "state": "string",
  "statistics": {
    "v3": {
      "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 UTC"
    }
  },
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  }
}
```


### 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 | |

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 | Peformance 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 | Peformance 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 | Peformance metric for write I/O operations. |

v3

The NFSv3 operations

| 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. |

metric

Historical performance numbers, such as IOPS latency and throughput, for SVM-NFS protocol.

| Name | Type | Description |
|---|---|---|
| v3 | v3 | The NFSv3 operations |

v40_features

| Name | Type | Description |
|---|---|---|
| acl_enabled | boolean | Specifies whether NFSv4.0 ACLs is enabled. |
| read_delegation_enabled | boolean | Specifies whether NFSv4.0 Read Delegation is enabled. |

| Name | Type | Description |
| --- | --- | --- |
| write_delegation_enabled | boolean | Specifies whether NFSv4.0 Write Delegation is enabled. |

v41_features

| Name | Type | Description |
| --- | --- | --- |
| acl_enabled | boolean | Specifies whether NFSv4.1 ACLs is enabled. |
| pnfs_enabled | boolean | Specifies whether NFSv4.1 Parallel NFS is enabled. |
| read_delegation_enabled | boolean | Specifies whether NFSv4.1 Read Delegation is enabled. |
| write_delegation_enabled | boolean | Specifies whether NFSv4.1 Write Delegation is enabled. |

protocol

| Name | Type | Description |
| --- | --- | --- |
| v3_enabled | boolean | Specifies whether NFSv3 protocol is enabled. |
| v40_enabled | boolean | Specifies whether NFSv4.0 protocol is enabled. |
| v40_features | v40_features | |
| v41_enabled | boolean | Specifies whether NFSv4.1 protocol is enabled. |
| v41_features | v41_features | |
| v4_id_domain | string | Specifies the domain portion of the string form of user and group names as defined by the NFSv4 protocol. |

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. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Peformance 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 | Peformance 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. |

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

v3

The NFSv3 operations

| 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. |

| 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_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. |

statistics

Realtime performance numbers, such as IOPS latency and throughput, for SVM-NFS protocol.

| Name | Type | Description |
| --- | --- | --- |
| v3 | v3 | The NFSv3 operations |

svm

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

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

transport

| Name | Type | Description |
|---|---|---|
| tcp_enabled | boolean | Specifies whether TCP transports are enabled on the server. |
| udp_enabled | boolean | Specifies whether UDP transports are enabled on the server. |

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 NFS configuration for an SVM

PATCH `/protocols/nfs/services/{svm.uuid}`

Updates the NFS configuration of an SVM.

### Related ONTAP commands

- `vserver nfs modify`

- `vserver nfs on`
- `vserver nfs off`
- `vserver nfs start`
- `vserver nfs stop`

### Learn more

- DOC /protocols/nfs/services

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | |

### Request Body

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| enabled | boolean | Specifies if the NFS service is administratively enabled. |
| metric | metric | Historical performance numbers, such as IOPS latency and throughput, for SVM-NFS protocol. |
| protocol | protocol | |
| state | string | Specifies the state of the NFS service on the SVM. The following values are supported:<br>• online - NFS server is ready to accept client requests.<br>• offline - NFS server is not ready to accept client requests. |
| statistics | statistics | Realtime performance numbers, such as IOPS latency and throughput, for SVM-NFS protocol. |
| svm | svm | |
| transport | transport | |
| vstorage_enabled | boolean | Specifies whether VMware vstorage feature is enabled. |

**Example request**


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "metric": {
    "v3": {
      "_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 UTC"
    }
  },
  "protocol": {
    "v4_id_domain": "string"
  },
  "state": "string",
  "statistics": {
    "v3": {
      "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 UTC"
    }
  },
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  }
}
```


**Response**

```
Status: 200, Ok
```

**Error**

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 3276916 | Vserver is not running |
| 3277069 | Cannot disable TCP because the SnapDiff RPC server is in the \"on\" state |

| Error Code | Description |
| --- | --- |
| 3277087 | Attempting to reduce the number of bits used for NFSv3 FSIDs and File IDs from 64 to 32 on Vserver. This could result in collisions between different File IDs and is not recommended |
| 3277088 | Attempting to increase the number of bits used for NFSv3 FSIDs and File IDs from 32 to 64 on Vserver. This could result in older client software no longer working with the volumes owned by Vserver |
| 3277090 | Attempting to disallow multiple FSIDs per mount point on Vserver. Since this Vserver currently uses 32-bit NFSv3 FSIDs and File IDs, this could result in collisions between different File IDs and is not recommended |
| 3277099 | Domain name contains invalid characters or its too short. Allowed characters are: alphabetical characters (A-Za-z), numeric characters (0-9), minus sign (-), and the period (.). The first character must be alphabetical or numeric, last character must not be a minus sign or a period. Minimum supported length: 2 characters, maximum of 256 characters |

| 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 | |

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 | Peformance 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 | Peformance 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 | Peformance metric for write I/O operations. |

v3

The NFSv3 operations

| 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. |

metric

Historical performance numbers, such as IOPS latency and throughput, for SVM-NFS protocol.

| Name | Type | Description |
| --- | --- | --- |
| v3 | v3 | The NFSv3 operations |

v40_features

| Name | Type | Description |
| --- | --- | --- |
| acl_enabled | boolean | Specifies whether NFSv4.0 ACLs is enabled. |
| read_delegation_enabled | boolean | Specifies whether NFSv4.0 Read Delegation is enabled. |

| Name | Type | Description |
| --- | --- | --- |
| write_delegation_enabled | boolean | Specifies whether NFSv4.0 Write Delegation is enabled. |

v41_features

| Name | Type | Description |
| --- | --- | --- |
| acl_enabled | boolean | Specifies whether NFSv4.1 ACLs is enabled. |
| pnfs_enabled | boolean | Specifies whether NFSv4.1 Parallel NFS is enabled. |
| read_delegation_enabled | boolean | Specifies whether NFSv4.1 Read Delegation is enabled. |
| write_delegation_enabled | boolean | Specifies whether NFSv4.1 Write Delegation is enabled. |

protocol

| Name | Type | Description |
| --- | --- | --- |
| v3_enabled | boolean | Specifies whether NFSv3 protocol is enabled. |
| v40_enabled | boolean | Specifies whether NFSv4.0 protocol is enabled. |
| v40_features | v40_features | |
| v41_enabled | boolean | Specifies whether NFSv4.1 protocol is enabled. |
| v41_features | v41_features | |
| v4_id_domain | string | Specifies the domain portion of the string form of user and group names as defined by the NFSv4 protocol. |

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. |
| total | integer | Performance metric aggregated over all types of I/O operations. |
| write | integer | Peformance 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 | Peformance 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. |

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

v3

The NFSv3 operations

| 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. |

| 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_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. |

statistics

Realtime performance numbers, such as IOPS latency and throughput, for SVM-NFS protocol.

| Name | Type | Description |
| --- | --- | --- |
| v3 | v3 | The NFSv3 operations |

svm

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

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

transport

| Name | Type | Description |
|---|---|---|
| tcp_enabled | boolean | Specifies whether TCP transports are enabled on the server. |
| udp_enabled | boolean | Specifies whether UDP transports are enabled on the server. |

nfs_service

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| enabled | boolean | Specifies if the NFS service is administratively enabled. |
| metric | metric | Historical performance numbers, such as IOPS latency and throughput, for SVM-NFS protocol. |
| protocol | protocol | |
| state | string | Specifies the state of the NFS service on the SVM. The following values are supported:<br>• online - NFS server is ready to accept client requests.<br>• offline - NFS server is not ready to accept client requests. |
| statistics | statistics | Realtime performance numbers, such as IOPS latency and throughput, for SVM-NFS protocol. |
| svm | svm | |
| transport | transport | |

| Name | Type | Description |
|---|---|---|
| vstorage_enabled | boolean | Specifies whether VMware vstorage feature is enabled. |

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 NFS protocol historical performance metrics

GET `/protocols/nfs/services/{svm.uuid}/metrics`

Retrieves historical performance metrics for the NFS protocol of an SVM.

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| timestamp | string | query | False | Filter by timestamp |
| v3.iops.other | integer | query | False | Filter by v3.iops.other |
| v3.iops.write | integer | query | False | Filter by v3.iops.write |
| v3.iops.read | integer | query | False | Filter by v3.iops.read |

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| v3.iops.total | integer | query | False | Filter by v3.iops.total |
| v3.status | string | query | False | Filter by v3.status |
| v3.latency.other | integer | query | False | Filter by v3.latency.other |
| v3.latency.write | integer | query | False | Filter by v3.latency.write |
| v3.latency.read | integer | query | False | Filter by v3.latency.read |
| v3.latency.total | integer | query | False | Filter by v3.latency.total |
| v3.duration | string | query | False | Filter by v3.duration |
| v3.throughput.read | integer | query | False | Filter by v3.throughput.read |
| v3.throughput.write | integer | query | False | Filter by v3.throughput.write |
| v3.throughput.total | integer | query | False | Filter by v3.throughput.total |
| 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.<br>• Default value: 1 |
| 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. |
| 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 |
| The default is true for GET calls. When set to false, only the number of records is returned.<br>• Default value: 1 | svm.uuid | string | path | True |
| Unique identifier of the SVM. | interval | string | 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"
    }
  },
  "records": [
    {
      "v3": {
        "_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 UTC"
      }
    }
  ]
}
```

### 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 |
|---|---|---|
| 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 | Peformance 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 | Peformance 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 | Peformance metric for write I/O operations. |

v3

The NFSv3 operations

| 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. |

records

Historical performance numbers, such as IOPS latency and throughput, for SVM-NFS protocol.

| Name | Type | Description |
|---|---|---|
| v3 | v3 | The NFSv3 operations |

error_arguments

| Name | Type | Description |
|---|---|---|
| code | string | Argument code |

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

error

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

# View and create Vscan configuration

## Protocols Vscan endpoint overview

### Overview

Use Vscan to protect data from being compromised by viruses or other malicious code. Vscan combines best-in-class third party antivirus software with ONTAP features that give you the flexibility you need to control which files get scanned and when. Storage systems offload scanning operations to external servers hosting antivirus software from third party vendors. An Antivirus Connector on the external server handles communications between the storage system and the antivirus software.

### Examples

#### Retrieving all of the Vscan configurations

```
# The API:
/api/protocols/vscan

# The call:
curl -X GET "https://<mgmt-
ip>/api/protocols/vscan?fields=*&return_records=true&return_timeout=15" -H
"accept: application/json"

# The response:
{
"records": [
  {
    "svm": {
```

```
      "uuid": "03ce5c36-f269-11e8-8852-0050568e5298",
      "name": "vs1"
    },
    "enabled": true,
    "scanner_pools": [
      {
        "name": "scanner-1",
        "servers": [
          "1.1.1.1",
          "10.72.204.27"
        ],
        "privileged_users": [
          "cifs\\u1",
          "cifs\\u2"
        ],
        "role": "primary",
        "cluster": {
          "name": "Cluster1",
          "uuid": "0228714d-f268-11e8-8851-0050568e5298"
        }
      },
      {
        "name": "scanner-2",
        "servers": [
          "1.1.1.1",
          "10.72.204.27"
        ],
        "privileged_users": [
          "cifs\\u1",
          "cifs\\u2"
        ],
        "role": "primary",
        "cluster": {
          "name": "Cluster1",
          "uuid": "0228714d-f268-11e8-8851-0050568e5298"
        }
      }
    ],
    "on_access_policies": [
      {
        "name": "default_CIFS",
        "vsName": "vs1",
        "enabled": true,
        "mandatory": true,
        "scope": {
          "max_file_size": 2147483648,
```

```
        "include_extensions": [
          "*"
        ],
        "scan_without_extension": true,
        "scan_readonly_volumes": false,
        "only_execute_access": false
      }
    },
    {
      "name": "on-access-test1",
      "vsName": "vs1",
      "enabled": false,
      "mandatory": true,
      "scope": {
        "max_file_size": 10000,
        "exclude_paths": [
          "\dir"
        ],
        "include_extensions": [
          "mp*",
          "txt"
        ],
        "exclude_extensions": [
          "mp*",
          "txt"
        ],
        "scan_without_extension": true,
        "scan_readonly_volumes": false,
        "only_execute_access": false
      }
    },
    {
      "name": "on-access-test2",
      "vsName": "vs1",
      "enabled": false,
      "mandatory": true,
      "scope": {
        "max_file_size": 10000,
        "exclude_paths": [
          "\dir"
        ],
        "include_extensions": [
          "mp*",
          "txt"
        ],
        "exclude_extensions": [
```

```
            "mp*",
            "txt"
          ],
          "scan_without_extension": true,
          "scan_readonly_volumes": false,
          "only_execute_access": false
        }
      }
    ],
    "on_demand_policies": [
      {
        "name": "task-1",
        "scan_paths": [
          "/vol1"
        ],
        "log_path": "/vol1",
        "scope": {
          "max_file_size": 10000,
          "exclude_paths": [
            "/vol1"
          ],
          "include_extensions": [
            "vmdk",
            "mp*"
          ],
          "exclude_extensions": [
            "mp3",
            "mp4"
          ],
          "scan_without_extension": true
        }
      },
      {
        "name": "task-2",
        "scan_paths": [
          "/vol1"
        ],
        "log_path": "/vol2",
        "scope": {
          "max_file_size": 10000,
          "exclude_paths": [
            "/vol2"
          ],
          "include_extensions": [
            "vmdk",
            "mp*"
```

```
        ],
        "exclude_extensions": [
          "mp3",
          "mp4"
        ],
        "scan_without_extension": true
      }
    }
  ]
},
{
  "svm": {
    "uuid": "24c2567a-f269-11e8-8852-0050568e5298",
    "name": "vs2"
  },
  "enabled": false,
  "scanner_pools": [
    {
      "name": "sp2",
      "servers": [
        "1.1.1.1"
      ],
      "privileged_users": [
        "cifs\\u1"
      ],
      "role": "idle"
    }
  ],
  "on_access_policies": [
    {
      "name": "default_CIFS",
      "vsName": "vs2",
      "enabled": true,
      "mandatory": true,
      "scope": {
        "max_file_size": 2147483648,
        "include_extensions": [
          "*"
        ],
        "scan_without_extension": true,
        "scan_readonly_volumes": false,
        "only_execute_access": false
      }
    },
    {
      "name": "ap1",
```

```
        "vsName": "vs2",
        "enabled": false,
        "mandatory": true,
        "scope": {
          "max_file_size": 2147483648,
          "include_extensions": [
            "*"
          ],
          "scan_without_extension": true,
          "scan_readonly_volumes": false,
          "only_execute_access": false
        }
      }
    ],
    "on_demand_policies": [
      {
        "name": "t1",
        "scan_paths": [
          "/vol1"
        ],
        "log_path": "/vol1",
        "scope": {
          "max_file_size": 10737418240,
          "include_extensions": [
            "*"
          ],
          "scan_without_extension": true
        }
      }
    ]
  }
],
"num_records": 2
}
```

**Retrieving all Vscan configurations for a particular SVM**

```
# The API:
/api/protocols/vscan/{svm.uuid}

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/vscan/24c2567a-f269-11e8-
8852-0050568e5298?fields=*" -H "accept: application/json"

# The response:
```

```
{
"svm": {
  "uuid": "24c2567a-f269-11e8-8852-0050568e5298",
  "name": "vs2"
},
"enabled": false,
"scanner_pools": [
  {
    "name": "sp2",
    "servers": [
      "1.1.1.1"
    ],
    "privileged_users": [
      "cifs\\u1"
    ],
    "role": "idle"
  }
],
"on_access_policies": [
  {
    "name": "default_CIFS",
    "vsName": "vs2",
    "enabled": true,
    "mandatory": true,
    "scope": {
      "max_file_size": 2147483648,
      "include_extensions": [
        "*"
      ],
      "scan_without_extension": true,
      "scan_readonly_volumes": false,
      "only_execute_access": false
    }
  },
  {
    "name": "ap1",
    "vsName": "vs2",
    "enabled": false,
    "mandatory": true,
    "scope": {
      "max_file_size": 2147483648,
      "include_extensions": [
        "*"
      ],
      "scan_without_extension": true,
      "scan_readonly_volumes": false,
```

```
      "only_execute_access": false
    }
  }
],
"on_demand_policies": [
  {
    "name": "t1",
    "scan_paths": [
      "/vol1"
    ],
    "log_path": "/vol1",
    "scope": {
      "max_file_size": 10737418240,
      "include_extensions": [
        "*"
      ],
      "scan_without_extension": true
    }
  }
]
}
```

**Creating a Vscan configuration**

```
# The API:
/api/protocols/vscan

# The call:
curl -X POST "https://<mgmt-ip>/api/protocols/vscan?return_records=true"
-H "accept: appication/json" -H "Content-Type: application/json" -d "{
\"enabled\": true, \"on_access_policies\": [ { \"enabled\": true,
\"mandatory\": true, \"name\": \"on-access-test\", \"scope\": {
\"exclude_extensions\": [ \"mp*\", \"txt\" ], \"exclude_paths\": [
\"\\vol\" ], \"include_extensions\": [ \"mp*\", \"txt\" ],
\"max_file_size\": 21474, \"only_execute_access\": false,
\"scan_readonly_volumes\": false, \"scan_without_extension\": true } } ],
\"on_demand_policies\": [ { \"log_path\": \"/vol\", \"name\": \"task-1\",
\"scan_paths\": [ \"/vol\" ], \"schedule\": { \"name\": \"daily\",
\"uuid\": \"d4984822-17b7-11e9-b450-0050568ecd85\" }, \"scope\": {
\"exclude_extensions\": [ \"mp3\", \"mp4\" ], \"exclude_paths\": [
\"/vol\" ], \"include_extensions\": [ \"vmdk\", \"mp*\" ],
\"max_file_size\": 10737, \"scan_without_extension\": true } } ],
\"scanner_pools\": [ { \"cluster\": { \"name\": \"Cluster1\", \"uuid\":
\"ab746d77-17b7-11e9-b450-0050568ecd85\" }, \"name\": \"scanner-1\",
\"privileged_users\": [ \"cifs\\\\u1\", \"cifs\\\\u2\" ], \"role\":
```

```
\"primary\", \"servers\": [ \"1.1.1.1\", \"10.72.204.27\" ] } ], \"svm\":
{ \"name\": \"vs1\", \"uuid\": \"b103be27-17b8-11e9-b451-0050568ecd85\"
}}"

# The response:
{
"num_records": 1,
"records": [
  {
    "svm": {
    "uuid": "b103be27-17b8-11e9-b451-0050568ecd85",
    "name": "vs1"
    },
    "enabled": true,
    "scanner_pools": [
      {
        "name": "scanner-1",
        "servers": [
          "1.1.1.1",
          "10.72.204.27"
        ],
        "privileged_users": [
          "cifs\\u1",
          "cifs\\u2"
        ],
        "role": "primary",
        "cluster": {
          "name": "Cluster1",
          "uuid": "ab746d77-17b7-11e9-b450-0050568ecd85"
        }
      }
    ],
    "on_access_policies": [
      {
        "name": "on-access-test",
        "enabled": true,
        "mandatory": true,
        "scope": {
          "max_file_size": 21474,
          "exclude_paths": [
            "\\vol"
          ],
          "include_extensions": [
            "mp*",
            "txt"
          ],
```

```
          "exclude_extensions": [
            "mp*",
            "txt"
          ],
          "scan_without_extension": true,
          "scan_readonly_volumes": false,
          "only_execute_access": false
        }
      }
    ],
    "on_demand_policies": [
      {
        "name": "task-1",
        "scan_paths": [
          "/vol"
        ],
        "log_path": "/vol",
        "schedule": {
          "uuid": "d4984822-17b7-11e9-b450-0050568ecd85",
          "name": "daily"
        },
        "scope": {
          "max_file_size": 10737,
          "exclude_paths": [
            "//"
          ],
          "include_extensions": [
            "vmdk",
            "mp*"
          ],
          "exclude_extensions": [
            "mp3",
            "mp4"
          ],
          "scan_without_extension": true
        }
      }
    ]
  }
]
}
```

**Creating multiple Vscan scanner-pools for the specified SVM**

```
# The API:
```

```
/api/protocols/vscan

# The call:
curl -X POST "https://<mgmt-ip>/api/protocols/vscan?return_records=true"
-H "accept: appication/json" -H "Content-Type: application/json" -d "{
\"scanner_pools\": [ { \"cluster\": { \"name\": \"Cluster1\", \"uuid\":
\"ab746d77-17b7-11e9-b450-0050568ecd85\" }, \"name\": \"scanner-1\",
\"privileged_users\": [ \"cifs\\\\u1\", \"cifs\\\\u2\" ], \"role\":
\"primary\", \"servers\": [ \"1.1.1.1\", \"10.72.204.27\" ] }, {
\"cluster\": { \"name\": \"Cluster1\", \"uuid\": \"ab746d77-17b7-11e9-
b450-0050568ecd85\" }, \"name\": \"scanner-2\", \"privileged_users\": [
\"cifs\\\\u3\", \"cifs\\\\u4\" ], \"role\": \"primary\", \"servers\": [
\"1.1.1.5\", \"10.72.3.27\" ] } ], \"svm\": { \"name\": \"vs1\", \"uuid\":
\"b103be27-17b8-11e9-b451-0050568ecd85\" }}"

# The response:
{
"num_records": 1,
"records": [
  {
    "svm": {
    "uuid": "b103be27-17b8-11e9-b451-0050568ecd85",
    "name": "vs1"
    },
    "scanner_pools": [
      {
        "name": "scanner-1",
        "servers": [
          "1.1.1.1",
          "10.72.204.27"
        ],
        "privileged_users": [
          "cifs\\u1",
          "cifs\\u2"
        ],
        "role": "primary",
        "cluster": {
          "name": "Cluster1",
          "uuid": "ab746d77-17b7-11e9-b450-0050568ecd85"
        }
      },
      {
        "name": "scanner-2",
        "servers": [
          "1.1.1.5",
          "10.72.3.27"
```

```
        ],
        "privileged_users": [
          "cifs\\u3",
          "cifs\\u4"
        ],
        "role": "primary",
        "cluster": {
          "name": "Cluster1",
          "uuid": "ab746d77-17b7-11e9-b450-0050568ecd85"
        }
      }
    ]
  }
]
}
```

#### Creating multiple Vscan On-access policies for a specified SVM

```
# The API:
/api/protocols/vscan

# The call:
curl -X POST "https://<mgmt-ip>/api/protocols/vscan?return_records=true"
-H "accept: application/json" -H "Content-Type: application/json" -d "{
\"on_access_policies\": [ { \"enabled\": false, \"mandatory\": true,
\"name\": \"on-access-test11\", \"scope\": { \"exclude_extensions\": [
\"mp*\", \"txt\" ], \"exclude_paths\": [ \"\\\\vol\" ],
\"include_extensions\": [ \"mp*\", \"txt\" ], \"max_file_size\": 214748,
\"only_execute_access\": false, \"scan_readonly_volumes\": false,
\"scan_without_extension\": true } }, { \"enabled\": false, \"mandatory\":
true, \"name\": \"on-access-test10\", \"scope\": { \"exclude_extensions\":
[ \"mp*\", \"txt\" ], \"exclude_paths\": [ \"\\\\vol\" ],
\"include_extensions\": [ \"mp*\", \"txt\" ], \"max_file_size\": 21474,
\"only_execute_access\": false, \"scan_readonly_volumes\": false,
\"scan_without_extension\": true } } ], \"svm\": { \"name\": \"vs1\",
\"uuid\": \"b103be27-17b8-11e9-b451-0050568ecd85\" }}"

# The response:
{
"num_records": 1,
"records": [
  {
    "svm": {
      "uuid": "b103be27-17b8-11e9-b451-0050568ecd85",
      "name": "vs1"
```

```
    },
    "on_access_policies": [
      {
        "name": "on-access-test11",
        "enabled": false,
        "mandatory": true,
        "scope": {
          "max_file_size": 214748,
          "exclude_paths": [
            "\\vol"
          ],
          "include_extensions": [
            "mp*",
            "txt"
          ],
          "exclude_extensions": [
            "mp*",
            "txt"
          ],
          "scan_without_extension": true,
          "scan_readonly_volumes": false,
          "only_execute_access": false
        }
      },
      {
        "name": "on-access-test10",
        "enabled": false,
        "mandatory": true,
        "scope": {
          "max_file_size": 21474,
          "exclude_paths": [
            "\\vol"
          ],
          "include_extensions": [
            "mp*",
            "txt"
          ],
          "exclude_extensions": [
            "mp*",
            "txt"
          ],
          "scan_without_extension": true,
          "scan_readonly_volumes": false,
          "only_execute_access": false
        }
      }
```

```
    ]
  }
]
}
```

**Creating multiple Vscan On-demand policies for a specified SVM**

```
# The API:
/api/protocols/vscan

# The call:
curl -X POST "https://<mgmt-ip>/api/protocols/vscan?return_records=true"
-H "accept: application/json" -H "Content-Type: application/json" -d "{
\"on_demand_policies\": [ { \"log_path\": \"/vol\", \"name\": \"task-1\",
\"scan_paths\": [ \"/vol\" ], \"schedule\": { \"name\": \"daily\",
\"uuid\": \"d4984822-17b7-11e9-b450-0050568ecd85\" }, \"scope\": {
\"exclude_extensions\": [ \"mp3\", \"mp4\" ], \"exclude_paths\": [
\"/vol1\" ], \"include_extensions\": [ \"vmdk\", \"mp*\" ],
\"max_file_size\": 107374, \"scan_without_extension\": true } }, {
\"log_path\": \"/vol\", \"name\": \"task-2\", \"scan_paths\": [ \"/vol\"
], \"scope\": { \"exclude_extensions\": [ \"mp3\", \"mp4\" ],
\"exclude_paths\": [ \"/vol1\" ], \"include_extensions\": [ \"vmdk\",
\"mp*\" ], \"max_file_size\": 107374, \"scan_without_extension\": true } }
], \"svm\": { \"name\": \"vs1\", \"uuid\": \"b103be27-17b8-11e9-b451-
0050568ecd85\" }}"

# The response:
{
"num_records": 1,
"records": [
  {
    "svm": {
      "uuid": "b103be27-17b8-11e9-b451-0050568ecd85",
      "name": "vs1"
    },
    "on_demand_policies": [
      {
        "name": "task-1",
        "scan_paths": [
          "/vol"
        ],
        "log_path": "/vol",
        "schedule": {
          "uuid": "d4984822-17b7-11e9-b450-0050568ecd85",
          "name": "daily"
```

```
        },
        "scope": {
          "max_file_size": 107374,
          "exclude_paths": [
            "/vol1"
          ],
          "include_extensions": [
            "vmdk",
            "mp*"
          ],
          "exclude_extensions": [
            "mp3",
            "mp4"
          ],
          "scan_without_extension": true
        }
      },
      {
        "name": "task-2",
        "scan_paths": [
          "/vol"
        ],
        "log_path": "/vol",
        "scope": {
          "max_file_size": 107374,
          "exclude_paths": [
            "/vol1"
          ],
          "include_extensions": [
            "vmdk",
            "mp*"
          ],
          "exclude_extensions": [
            "mp3",
            "mp4"
          ],
          "scan_without_extension": true
        }
      }
    ]
  }
]
}
```

#### Enabling Vscan for a specified SVM

```
# The API:
/api/protocols/vscan/{svm.uuid}

# The call:
curl -X PATCH "https://<mgmt-ip>/api/protocols/vscan/03ce5c36-f269-11e8-
8852-0050568e5298" -H "accept: application/json" -H "Content-Type:
application/json" -d "{ \"enabled\": true}"
```

#### Clearing the Vscan cache for the specified SVM

```
# The call:
curl -X PATCH "https://<mgmt-ip>/api/protocols/vscan/03ce5c36-f269-11e8-
8852-0050568e5298" -H "accept: application/json" -H "Content-Type:
application/json" -d "{ \"cache_clear\": true}"
```

#### Deleting the Vscan configuration for a specified SVM

```
# The API:
/api/protocols/vscan/{svm.uuid}

# The call:
curl -X DELETE "https://<mgmt-ip>/api/protocols/vscan/03ce5c36-f269-11e8-
8852-0050568e5298" -H "accept: application/json"
```

## Retrieve the Vscan configuration

GET `/protocols/vscan`

Retrieves the Vscan configuration. This includes scanner-pools, On-Access policies, On-Demand policies, and information about whether a Vscan is enabled or disabled on an SVM.

Important notes:

- You can enable only one Vscan configuration at a time for an SVM.
- You can only query using `svm.uuid` or `svm.name`.

### Related ONTAP commands

- `vserver vscan show`
- `vserver vscan scanner-pool show`
- `vserver vscan scanner-pool servers show`
- `vserver vscan scanner-pool privileged-users show`

- `vserver vscan scanner-pool show-active`
- `vserver vscan on-access-policy show`
- `vserver vscan on-access-policy file-ext-to-exclude show`
- `vserver vscan on-access-policy file-ext-to-include show`
- `vserver vscan on-access-policy paths-to-exclude show`
- `vserver vscan on-demand-task show`

### Learn more

- DOC /protocols/vscan
- DOC /protocols/vscan/{svm.uuid}/scanner-pools

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | query | False | Filter by svm.uuid |
| svm.name | string | query | False | Filter by svm.name |
| on_demand_policies.scope.include_extensions | string | query | False | Filter by on_demand_policies.scope.include_extensions |
| on_demand_policies.scope.max_file_size | integer | query | False | Filter by on_demand_policies.scope.max_file_size |
| on_demand_policies.scope.exclude_extensions | string | query | False | Filter by on_demand_policies.scope.exclude_extensions |
| on_demand_policies.scope.exclude_paths | string | query | False | Filter by on_demand_policies.scope.exclude_paths |
| on_demand_policies.scope.scan_without_extension | boolean | query | False | Filter by on_demand_policies.scope.scan_without_extension |

| Name | Type | In | Required | Description |
| --- | --- | --- | --- | --- |
| on_demand_policies.log_path | string | query | False | Filter by on_demand_policies.log_path |
| on_demand_policies.scan_paths | string | query | False | Filter by on_demand_policies.scan_paths |
| on_demand_policies.name | string | query | False | Filter by on_demand_policies.name |
| on_demand_policies.schedule.uuid | string | query | False | Filter by on_demand_policies.schedule.uuid |
| on_demand_policies.schedule.name | string | query | False | Filter by on_demand_policies.schedule.name |
| scanner_pools.name | string | query | False | Filter by scanner_pools.name |
| scanner_pools.servers | string | query | False | Filter by scanner_pools.servers |
| scanner_pools.cluster.name | string | query | False | Filter by scanner_pools.cluster.name |
| scanner_pools.cluster.uuid | string | query | False | Filter by scanner_pools.cluster.uuid |
| scanner_pools.role | string | query | False | Filter by scanner_pools.role |
| scanner_pools.privileged_users | string | query | False | Filter by scanner_pools.privileged_users |
| on_access_policies.mandatory | boolean | query | False | Filter by on_access_policies.mandatory |

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| on_access_policies.name | string | query | False | Filter by on_access_policies.name |
| on_access_policies.scope.scan_without_extension | boolean | query | False | Filter by on_access_policies.scope.scan_without_extension |
| on_access_policies.scope.only_execute_access | boolean | query | False | Filter by on_access_policies.scope.only_execute_access |
| on_access_policies.scope.exclude_paths | string | query | False | Filter by on_access_policies.scope.exclude_paths |
| on_access_policies.scope.scan_readonly_volumes | boolean | query | False | Filter by on_access_policies.scope.scan_readonly_volumes |
| on_access_policies.scope.exclude_extensions | string | query | False | Filter by on_access_policies.scope.exclude_extensions |
| on_access_policies.scope.max_file_size | integer | query | False | Filter by on_access_policies.scope.max_file_size |
| on_access_policies.scope.include_extensions | string | query | False | Filter by on_access_policies.scope.include_extensions |
| on_access_policies.enabled | boolean | query | False | Filter by on_access_policies.enabled |
| enabled | boolean | query | False | Filter by enabled |
| 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. |
| return_timeout | integer | query | False | The number of seconds to allow the call to execute before returning. When iterating over a collection, the default is 15 seconds. ONTAP returns earlier if either max records or the end of the collection is reached. |
| order_by | array[string] | query | False | Order results by specified fields and optional [asc |

### Response

```
Status: 200, Ok
```

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

**Example response**


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "on_access_policies": [
        {
          "name": "on-access-test",
          "scope": {
            "exclude_extensions": [
              "mp*",
              "txt"
            ],
            "exclude_paths": [
              "\\dir1\\dir2\\name",
              "\\vol\\a b",
              "\\vol\\a,b\\"
            ],
            "include_extensions": [
              "mp*",
              "txt"
            ],
            "max_file_size": 2147483648
          }
        }
      ],
      "on_demand_policies": [
        {
          "log_path": "/vol0/report_dir",
          "name": "task-1",
          "scan_paths": [
            "/vol1/",
            "/vol2/cifs/"
```

```
        ],
        "schedule": {
          "_links": {
            "self": {
              "href": "/api/resourcelink"
            }
          },
          "name": "weekly",
          "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
        },
        "scope": {
          "exclude_extensions": [
            "mp3",
            "mp4"
          ],
          "exclude_paths": [
            "/vol1/cold-files/",
            "/vol1/cifs/names"
          ],
          "include_extensions": [
            "vmdk",
            "mp*"
          ],
          "max_file_size": 10737418240
        }
      }
    ],
    "scanner_pools": [
      {
        "cluster": {
          "_links": {
            "self": {
              "href": "/api/resourcelink"
            }
          },
          "name": "cluster1",
          "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
        },
        "name": "scanner-1",
        "privileged_users": [
          "cifs\\u1",
          "cifs\\u2"
        ],
        "role": "string",
        "servers": [
          "1.1.1.1",
```

```
            "10.72.204.27",
            "vmwin204-27.fsct.nb"
          ]
        }
      ],
      "svm": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "svm1",
        "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
      }
    }
  ]
}
```


### 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 |
|---|---|---|
| next | href | |
| self | href | |

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

scope

| Name | Type | Description |
|---|---|---|
| exclude_extensions | array[string] | List of file extensions for which scanning is not performed. |
| exclude_paths | array[string] | List of file paths for which scanning must not be performed. |
| include_extensions | array[string] | List of file extensions to be scanned. |
| max_file_size | integer | Maximum file size, in bytes, allowed for scanning. |
| only_execute_access | boolean | Scan only files opened with execute-access. |
| scan_readonly_volumes | boolean | Specifies whether or not read-only volume can be scanned. |
| scan_without_extension | boolean | Specifies whether or not files without any extension can be scanned. |

vscan_on_access

An On-Access policy that defines the scope of an On-Access scan. Use On-Access scanning to check for

viruses when clients open, read, rename, or close files over CIFS. By default, ONTAP creates an On-Access policy named "default_CIFS" and enables it for all the SVMs in a cluster.

| Name | Type | Description |
|---|---|---|
| enabled | boolean | Status of the On-Access Vscan policy |
| mandatory | boolean | Specifies if scanning is mandatory. File access is denied if there are no external virus-scanning servers available for virus scanning. |
| name | string | On-Access policy ame |
| scope | scope | |

schedule

Schedule of the task.

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

scope

| Name | Type | Description |
|---|---|---|
| exclude_extensions | array[string] | List of file extensions for which scanning is not performed. |
| exclude_paths | array[string] | List of file paths for which scanning must not be performed. |
| include_extensions | array[string] | List of file extensions to be scanned. |
| max_file_size | integer | Maximum file size, in bytes, allowed for scanning. |
| scan_without_extension | boolean | Specifies whether or not files without any extension can be scanned. |

vscan_on_demand

Use On-Demand scanning to check files for viruses on a schedule. An On-Demand policy defines the scope of an On-Demand scan.

| Name | Type | Description |
|---|---|---|
| log_path | string | The path from the Vserver root where the task report is created. |
| name | string | On-Demand task name |
| scan_paths | array[string] | List of paths that need to be scanned. |
| schedule | schedule | Schedule of the task. |
| scope | scope | |

cluster_reference

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | |
| uuid | string | |

vscan_scanner_pool

Scanner pool is a set of attributes which are used to validate and manage connections between clustered ONTAP and external virus-scanning server, or "Vscan server".

| Name | Type | Description |
|---|---|---|
| cluster | cluster_reference | |
| name | string | Specifies the name of the scanner pool. Scanner pool name can be up to 256 characters long and is a string that can only contain any combination of ASCII-range alphanumeric characters a-z, A-Z, 0-9), "_", "-" and ".". |

| Name | Type | Description |
|---|---|---|
| privileged_users | array[string] | Specifies a list of privileged users. A valid form of privileged user-name is "domain-name\user-name". Privileged user-names are stored and treated as case-insensitive strings. Virus scanners must use one of the registered privileged users for connecting to clustered Data ONTAP for exchanging virus-scanning protocol messages and to access file for scanning, remedying and quarantining operations.<br>• example: ["cifs\u1", "cifs\u2"] |
| role | string | Specifies the role of the scanner pool. The possible values are:<br>• primary - Always active.<br>• secondary - Active only when none of the primary external virus-scanning servers are connected.<br>• idle - Always inactive. |
| servers | array[string] | Specifies a list of IP addresses or FQDN for each Vscan server host names which are allowed to connect to clustered ONTAP.<br>• example: ["1.1.1.1", "10.72.204.27", "vmwin204-27.fsct.nb"] |

svm

SVM, applies only to SVM-scoped objects.

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

vscan

Vscan can be used to protect data from being compromised by viruses or other malicious code. This combines best-in-class third-party antivirus software with ONTAP features that give you the flexibility you need to control which files get scanned and when. Storage systems offload scanning operations to external servers hosting antivirus software from thirdparty vendors. An Antivirus Connector on the external server handles communications between the storage system and the antivirus software.

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| cache_clear | boolean | Discards the cached information of the files that have been successfully scanned. Once the cache is cleared, files are scanned again when they are accessed. PATCH only |
| enabled | boolean | Specifies whether or not Vscan is enabled on the SVM. |
| on_access_policies | array[vscan_on_access] | |
| on_demand_policies | array[vscan_on_demand] | |
| scanner_pools | array[vscan_scanner_pool] | |
| svm | svm | SVM, applies only to SVM-scoped objects. |

error_arguments

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

error

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

## Create a Vscan configuration

POST `/protocols/vscan`

Creates a Vscan configuration, which includes a list of scanner-pools, Vscan On-Access policies and Vscan On-Demand policies. Defines whether the Vscan configuration you create is enabled or disabled for a specified SVM.

Important notes:

- You can enable only one Vscan configuration at a time for an SVM.
- There needs to be at least one active scanner-pool and one enabled On-Access policy to enable Vscan successfully.
- By default, a Vscan is enabled when it's created.
- By default, the Vscan On-Access policies created from this endpoint are in the disabled state. You can use the On-Access policy PATCH endpoint to enable a particular On-Access policy. In ONTAP 9.6, only one Vscan On-Access policy can be enabled and only one Vscan On-Demand policy can be scheduled on an SVM.

### Required properties

- `svm.uuid` or `svm.name` - Existing SVM in which to create the Vscan configuration.

### Recommended optional properties

- `scanner_pools` - There must be at least one active scanner-pool for Vscan configuration. Created either through Vscan POST operation or scanner-pools POST operation.

### Default property values

If not specified in POST, the following default property value is assigned:

- `enabled` - *true*

### Related ONTAP commands

- `vserver vscan enable`
- `vserver vscan scanner-pool create`
- `vserver vscan scanner-pool apply-policy`
- `vserver vscan scanner-pool servers add`
- `vserver vscan scanner-pool privileged-users add`
- `vserver vscan on-access-policy create`
- `vserver vscan on-access-policy file-ext-to-exclude add`
- `vserver vscan on-access-policy file-ext-to-include add`
- `vserver vscan on-access-policy paths-to-exclude add`
- `vserver vscan on-demand-task create`

### Learn more

- DOC /protocols/vscan
- DOC /protocols/vscan/{svm.uuid}/scanner-pools

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| return_records | boolean | query | False | The default is false. If set to true, the records are returned. |

### Request Body

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| cache_clear | boolean | Discards the cached information of the files that have been successfully scanned. Once the cache is cleared, files are scanned again when they are accessed. PATCH only |
| enabled | boolean | Specifies whether or not Vscan is enabled on the SVM. |
| on_access_policies | array[vscan_on_access] | |
| on_demand_policies | array[vscan_on_demand] | |
| scanner_pools | array[vscan_scanner_pool] | |
| svm | svm | SVM, applies only to SVM-scoped objects. |

**Example request**

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "on_access_policies": [
    {
      "name": "on-access-test",
      "scope": {
        "exclude_extensions": [
          "mp*",
          "txt"
        ],
        "exclude_paths": [
          "\\dir1\\dir2\\name",
          "\\vol\\a b",
          "\\vol\\a,b\\"
        ],
        "include_extensions": [
          "mp*",
          "txt"
        ],
        "max_file_size": 2147483648
      }
    }
  ],
  "on_demand_policies": [
    {
      "log_path": "/vol0/report_dir",
      "name": "task-1",
      "scan_paths": [
        "/vol1/",
        "/vol2/cifs/"
      ],
      "schedule": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "weekly",
        "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
      },
```

```
      "scope": {
        "exclude_extensions": [
          "mp3",
          "mp4"
        ],
        "exclude_paths": [
          "/vol1/cold-files/",
          "/vol1/cifs/names"
        ],
        "include_extensions": [
          "vmdk",
          "mp*"
        ],
        "max_file_size": 10737418240
      }
    }
  ],
  "scanner_pools": [
    {
      "cluster": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "cluster1",
        "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
      },
      "name": "scanner-1",
      "privileged_users": [
        "cifs\\u1",
        "cifs\\u2"
      ],
      "role": "string",
      "servers": [
        "1.1.1.1",
        "10.72.204.27",
        "vmwin204-27.fsct.nb"
      ]
    }
  ],
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
```

```
      },
      "name": "svm1",
      "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
    }
  }
```


### Response

```
Status: 201, Created
```

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

**Example response**


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "on_access_policies": [
        {
          "name": "on-access-test",
          "scope": {
            "exclude_extensions": [
              "mp*",
              "txt"
            ],
            "exclude_paths": [
              "\\dir1\\dir2\\name",
              "\\vol\\a b",
              "\\vol\\a,b\\"
            ],
            "include_extensions": [
              "mp*",
              "txt"
            ],
            "max_file_size": 2147483648
          }
        }
      ],
      "on_demand_policies": [
        {
          "log_path": "/vol0/report_dir",
          "name": "task-1",
          "scan_paths": [
            "/vol1/",
            "/vol2/cifs/"
```

```
        ],
        "schedule": {
          "_links": {
            "self": {
              "href": "/api/resourcelink"
            }
          },
          "name": "weekly",
          "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
        },
        "scope": {
          "exclude_extensions": [
            "mp3",
            "mp4"
          ],
          "exclude_paths": [
            "/vol1/cold-files/",
            "/vol1/cifs/names"
          ],
          "include_extensions": [
            "vmdk",
            "mp*"
          ],
          "max_file_size": 10737418240
        }
      }
    ],
    "scanner_pools": [
      {
        "cluster": {
          "_links": {
            "self": {
              "href": "/api/resourcelink"
            }
          },
          "name": "cluster1",
          "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
        },
        "name": "scanner-1",
        "privileged_users": [
          "cifs\\u1",
          "cifs\\u2"
        ],
        "role": "string",
        "servers": [
          "1.1.1.1",
```

```
            "10.72.204.27",
            "vmwin204-27.fsct.nb"
          ]
        }
      ],
      "svm": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "svm1",
        "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
      }
    }
  ]
}
```


### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 10027259 | A scanner-pool, an On-Access policy, or an On-Demand policy might fail to get created due to either a systematic error or some hardware failure. The error code returned details the failure along with the reason for the failure. For example, if a scanner-pool fails due to an incorrect cluster name, then the error might read: "Failed to create scanner-pool "scanner-1". Reason: "Cluster uuid points to different cluster name instead of the cluster-name supplied.". Retry the operation." |
| 10027260 | If a scanner-pool, an On-Access policy or an On-Demand policy specified in the input already exists, then a duplicate error is returned. For example, if a scanner-pool "scanner-1" already exists for an SVM and is again specified in the input, the error message will read: " Failed to create scanner-pool "scanner-1" as the specified entry already exists. Delete the entry and retry the POST operation." |
| 2621462 | The specified SVM name is invalid |

| Error Code | Description |
| --- | --- |
| 2621706 | The specified svm.uuid is either invalid or belongs to a different SVM |
| 10027015 | Attempting to enable a Vscan but no active scanner-pool exists for the specified SVM |
| 10027011 | Attempting to enable a Vscan for an SVM for which no CIFS server exists |
| 10027023 | Attempting to enable a Vscan for an SVM for which no active Vscan On-Access policy exist |

| 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 | |

scope

| Name | Type | Description |
|---|---|---|
| exclude_extensions | array[string] | List of file extensions for which scanning is not performed. |
| exclude_paths | array[string] | List of file paths for which scanning must not be performed. |
| include_extensions | array[string] | List of file extensions to be scanned. |
| max_file_size | integer | Maximum file size, in bytes, allowed for scanning. |
| only_execute_access | boolean | Scan only files opened with execute-access. |
| scan_readonly_volumes | boolean | Specifies whether or not read-only volume can be scanned. |
| scan_without_extension | boolean | Specifies whether or not files without any extension can be scanned. |

vscan_on_access

An On-Access policy that defines the scope of an On-Access scan. Use On-Access scanning to check for viruses when clients open, read, rename, or close files over CIFS. By default, ONTAP creates an On-Access policy named "default_CIFS" and enables it for all the SVMs in a cluster.

| Name | Type | Description |
|---|---|---|
| enabled | boolean | Status of the On-Access Vscan policy |

| Name | Type | Description |
|---|---|---|
| mandatory | boolean | Specifies if scanning is mandatory. File access is denied if there are no external virus-scanning servers available for virus scanning. |
| name | string | On-Access policy ame |
| scope | scope | |

schedule

Schedule of the task.

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

scope

| Name | Type | Description |
|---|---|---|
| exclude_extensions | array[string] | List of file extensions for which scanning is not performed. |
| exclude_paths | array[string] | List of file paths for which scanning must not be performed. |
| include_extensions | array[string] | List of file extensions to be scanned. |
| max_file_size | integer | Maximum file size, in bytes, allowed for scanning. |
| scan_without_extension | boolean | Specifies whether or not files without any extension can be scanned. |

vscan_on_demand

Use On-Demand scanning to check files for viruses on a schedule. An On-Demand policy defines the scope of an On-Demand scan.

| Name | Type | Description |
|---|---|---|
| log_path | string | The path from the Vserver root where the task report is created. |
| name | string | On-Demand task name |
| scan_paths | array[string] | List of paths that need to be scanned. |
| schedule | schedule | Schedule of the task. |
| scope | scope | |

cluster_reference

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | |
| uuid | string | |

vscan_scanner_pool

Scanner pool is a set of attributes which are used to validate and manage connections between clustered ONTAP and external virus-scanning server, or "Vscan server".

| Name | Type | Description |
|---|---|---|
| cluster | cluster_reference | |
| name | string | Specifies the name of the scanner pool. Scanner pool name can be up to 256 characters long and is a string that can only contain any combination of ASCII-range alphanumeric characters a-z, A-Z, 0-9), "_", "-" and ".". |

| Name | Type | Description |
|---|---|---|
| privileged_users | array[string] | Specifies a list of privileged users. A valid form of privileged user-name is "domain-name\user-name". Privileged user-names are stored and treated as case-insensitive strings. Virus scanners must use one of the registered privileged users for connecting to clustered Data ONTAP for exchanging virus-scanning protocol messages and to access file for scanning, remedying and quarantining operations.<br>• example: ["cifs\u1", "cifs\u2"] |
| role | string | Specifies the role of the scanner pool. The possible values are:<br>• primary - Always active.<br>• secondary - Active only when none of the primary external virus-scanning servers are connected.<br>• idle - Always inactive. |
| servers | array[string] | Specifies a list of IP addresses or FQDN for each Vscan server host names which are allowed to connect to clustered ONTAP.<br>• example: ["1.1.1.1", "10.72.204.27", "vmwin204-27.fsct.nb"] |

svm

SVM, applies only to SVM-scoped objects.

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

vscan

Vscan can be used to protect data from being compromised by viruses or other malicious code. This combines best-in-class third-party antivirus software with ONTAP features that give you the flexibility you need to control which files get scanned and when. Storage systems offload scanning operations to external servers hosting antivirus software from thirdparty vendors. An Antivirus Connector on the external server handles communications between the storage system and the antivirus software.

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| cache_clear | boolean | Discards the cached information of the files that have been successfully scanned. Once the cache is cleared, files are scanned again when they are accessed. PATCH only |
| enabled | boolean | Specifies whether or not Vscan is enabled on the SVM. |
| on_access_policies | array[vscan_on_access] | |
| on_demand_policies | array[vscan_on_demand] | |
| scanner_pools | array[vscan_scanner_pool] | |
| svm | svm | SVM, applies only to SVM-scoped objects. |

_links

| Name | Type | Description |
|---|---|---|
| next | href | |
| self | href | |

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 |

| Name | Type | Description |
|---|---|---|
| message | string | Error message |
| target | string | The target parameter that caused the error. |

# Manage Vscan configuration

## Protocols Vscan server-status endpoint overview

### Overview

This API is used to display connection status information for the external virus-scanning servers or "Vscan servers".

### Examples

#### Retrieving all fields for the Vscan server status

```
# The API:
/api/protocols/vscan/server_status/

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/vscan/server_status?fields=*"
-H "accept: application/hal+json"

# The response:
{
"records": [
  {
    "svm": {
      "uuid": "86fbc414-f140-11e8-8e22-0050568e0945",
      "name": "vs1",
      "_links": {
        "self": {
          "href": "/api/svm/svms/86fbc414-f140-11e8-8e22-0050568e0945"
        }
      }
    },
    "node": {
      "uuid": "fe696362-f138-11e8-8e22-0050568e0945",
      "name": "Cluster-01",
      "_links": {
```

```
        "self": {
          "href": "/api/cluster/nodes/fe696362-f138-11e8-8e22-
0050568e0945"
        }
      }
    },
    "ip": "10.141.46.173",
    "type": "primary",
    "state": "disconnected",
    "disconnected_reason": "unknown",
    "_links": {
      "self": {
        "href": "/api/protocols/vscan/server_status/86fbc414-f140-11e8-
8e22-0050568e0945/Cluster-01/10.141.46.173"
      }
    }
  },
  {
    "svm": {
      "uuid": "86fbc414-f140-11e8-8e22-0050568e0945",
      "name": "vs1",
      "_links": {
        "self": {
          "href": "/api/svm/svms/86fbc414-f140-11e8-8e22-0050568e0945"
        }
      }
    },
    "node": {
      "uuid": "fe696362-f138-11e8-8e22-0050568e0945",
      "name": "Cluster-01",
      "_links": {
        "self": {
          "href": "/api/cluster/nodes/fe696362-f138-11e8-8e22-
0050568e0945"
        }
      }
    },
    "ip": "fd20:8b1e:b255:5053::46:173",
    "type": "primary",
    "state": "disconnected",
    "disconnected_reason": "remote_closed",
    "_links": {
      "self": {
        "href": "/api/protocols/vscan/server_status/86fbc414-f140-11e8-
8e22-0050568e0945/Cluster-01/fd20%3A8b1e%3Ab255%3A5053%3A%3A46%3A173"
      }
```

```
    }
  }
],
"num_records": 2,
"_links": {
  "self": {
    "href": "/api/protocols/vscan/server_status?fields=*"
  }
}
}
```

#### Retrieving the server status information for the server with IP address 10.141.46.173

```
# The API:
/api/protocols/vscan/server_status

# The call:
curl -X GET "https://<mgmt-
ip>/api/protocols/vscan/server_status?ip=10.141.46.173&fields=*" -H
"accept: application/hal+json"

# The response:
{
"records": [
  {
    "svm": {
      "uuid": "86fbc414-f140-11e8-8e22-0050568e0945",
      "name": "vs1",
      "_links": {
        "self": {
          "href": "/api/svm/svms/86fbc414-f140-11e8-8e22-0050568e0945"
        }
      }
    },
    "node": {
      "uuid": "fe696362-f138-11e8-8e22-0050568e0945",
      "name": "Cluster-01",
      "_links": {
        "self": {
          "href": "/api/cluster/nodes/fe696362-f138-11e8-8e22-
0050568e0945"
        }
```

```
      }
    },
    "ip": "10.141.46.173",
    "type": "primary",
    "state": "connected",
    "update_time": "2018-12-19T08:03:40.988Z",
    "vendor": "XYZ",
    "version": "1.12.2",
    "_links": {
      "self": {
        "href": "/api/protocols/vscan/server_status/86fbc414-f140-11e8-
8e22-0050568e0945/Cluster-01/10.141.46.173"
      }
],
"num_records": 1,
"_links": {
  "self": {
    "href": "/api/protocols/vscan/server_status?ip=10.141.46.173&fields=*"
  }
}
}
```


## Retrieve Vscan server status

GET `/protocols/vscan/server-status`

Retrieves a Vscan server status.

### Related ONTAP commands

- `vserver vscan connection-status show-all`

### Learn more

- DOC /protocols/vscan/server-status

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| vendor | string | query | False | Filter by vendor |
| version | string | query | False | Filter by version |
| state | string | query | False | Filter by state |

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| ip | string | query | False | Filter by ip |
| type | string | query | False | Filter by type |
| svm.uuid | string | query | False | Filter by svm.uuid |
| svm.name | string | query | False | Filter by svm.name |
| node.uuid | string | query | False | Filter by node.uuid |
| node.name | string | query | False | Filter by node.name |
| disconnected_reason | string | query | False | Filter by disconnected_reason |
| update_time | string | query | False | Filter by update_time |
| 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. |
| 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. |

| 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 | _links | |
| num_records | integer | Number of records |
| records | array[vscan_server_status] | |

**Example response**


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "disconnected_reason": "string",
      "ip": "string",
      "node": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "node1",
        "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
      },
      "state": "string",
      "svm": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "svm1",
        "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
      },
      "type": "string",
      "update_time": "string",
      "vendor": "string",
      "version": "string"
    }
  ]
}
```

### Error

```
Status: Default, Error
```

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

### Example error


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


### Definitions

**See Definitions**

href

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

_links

| Name | Type | Description |
|---|---|---|
| next | href | |
| self | href | |

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

node

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | |
| uuid | string | |

svm

SVM, applies only to SVM-scoped objects.

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

vscan_server_status

Displays the connection status information of the external virus-scanning servers.

| Name | Type | Description |
| --- | --- | --- |
| disconnected_reason | string | Specifies the server disconnected reason. The following is a list of the possible reasons:<br>• unknown - Disconnected, unknown reason.<br>• vscan_disabled - Disconnected, Vscan is disabled on the SVM.<br>• no_data_lif - Disconnected, SVM does not have data LIF.<br>• session_uninitialized - Disconnected, session is not initialized.<br>• remote_closed - Disconnected, server has closed the connection.<br>• invalid_protocol_msg - Disconnected, invalid protocol message received.<br>• invalid_session_id - Disconnected, invalid session ID received.<br>• inactive_connection - Disconnected, no activity on connection.<br>• invalid_user - Connection request by an invalid user.<br>• server_removed - Disconnected, server has been removed from the active Scanners List. enum:<br>• unknown<br>• vscan_disabled<br>• no_data_lif<br>• session_uninitialized<br>• remote_closed<br>• invalid_protocol_msg<br>• invalid_session_id<br>• inactive_connection<br>• invalid_user<br>• server_removed |

| Name | Type | Description |
| --- | --- | --- |
| ip | string | IP address of the Vscan server. |
| node | node | |
| state | string | Specifies the server connection state indicating if it is in the connected or disconnected state. The following is a list of the possible states:<br>• connected - Connected<br>• disconnected - Disconnected enum:<br>• connected<br>• disconnected |
| svm | svm | SVM, applies only to SVM-scoped objects. |
| type | string | Server type. The possible values are:<br>• primary - Primary server<br>• backup - Backup server |
| update_time | string | Specifies the time the server is in the connected or disconnected state. |
| vendor | string | Name of the connected virus-scanner vendor. |
| version | string | Version of the connected virus-scanner. |

error_arguments

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

error

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

## Delete a Vscan configuration

DELETE `/protocols/vscan/{svm.uuid}`

Deletes a Vscan configuration.

Important notes:

- The Vscan DELETE endpoint deletes all of the Vscan configuration of an SVM. It first disables the Vscan and then deletes all of the SVM scanner-pools, On-Access policies, and On-Demand policies.
- Disable the active Vscan On-Access policy on an SVM before performing the Vscan delete operation on that SVM.

### Related ONTAP commands

- `vserver vscan scanner-pool delete`
- `vserver vscan on-access-policy delete`
- `vserver vscan on-demand-policy delete`

### Learn more

- DOC /protocols/vscan
- DOC /protocols/vscan/{svm.uuid}/scanner-pools

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |

### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 10027259 | A scanner-pool, an On-Access policy, or an On-Demand policy might fail to get deleted due to either a systematic error or some hardware failure. The error code returned details the failure along with the reason for the failure. For example, "Failed to delete On-Access policy "sp1". Reason: "Failed to delete policy. Reason: policy must be disabled before being deleted.". Retry the operation." |

| 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 the Vscan configuration for an SVM

GET `/protocols/vscan/{svm.uuid}`

Retrieves the Vscan configuration for a specified SVM. This includes scanner-pools, On-Access policies, On-Demand policies, and information about whether a Vscan is enabled or disabled on an SVM.

Important note:

- You can enable only one Vscan configuration at a time for an SVM.

**Related ONTAP commands**

- `vserver vscan show`
- `vserver vscan scanner-pool show`
- `vserver vscan scanner-pool servers show`
- `vserver vscan scanner-pool privileged-users show`
- `vserver vscan scanner-pool show-active`
- `vserver vscan on-access-policy show`
- `vserver vscan on-access-policy file-ext-to-exclude show`
- `vserver vscan on-access-policy file-ext-to-include show`

- `vserver vscan on-access-policy paths-to-exclude show`
- `vserver vscan on-demand-task show`

### Learn more

- DOC /protocols/vscan
- DOC /protocols/vscan/{svm.uuid}/scanner-pools

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| fields | array[string] | query | False | Specify the fields to return. |

### Response

```
Status: 200, Ok
```

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| cache_clear | boolean | Discards the cached information of the files that have been successfully scanned. Once the cache is cleared, files are scanned again when they are accessed. PATCH only |
| enabled | boolean | Specifies whether or not Vscan is enabled on the SVM. |
| on_access_policies | array[vscan_on_access] | |
| on_demand_policies | array[vscan_on_demand] | |
| scanner_pools | array[vscan_scanner_pool] | |
| svm | svm | SVM, applies only to SVM-scoped objects. |

**Example response**


```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "on_access_policies": [
    {
      "name": "on-access-test",
      "scope": {
        "exclude_extensions": [
          "mp*",
          "txt"
        ],
        "exclude_paths": [
          "\\dir1\\dir2\\name",
          "\\vol\\a b",
          "\\vol\\a,b\\"
        ],
        "include_extensions": [
          "mp*",
          "txt"
        ],
        "max_file_size": 2147483648
      }
    }
  ],
  "on_demand_policies": [
    {
      "log_path": "/vol0/report_dir",
      "name": "task-1",
      "scan_paths": [
        "/vol1/",
        "/vol2/cifs/"
      ],
      "schedule": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "weekly",
        "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
      },
```

```
      "scope": {
        "exclude_extensions": [
          "mp3",
          "mp4"
        ],
        "exclude_paths": [
          "/vol1/cold-files/",
          "/vol1/cifs/names"
        ],
        "include_extensions": [
          "vmdk",
          "mp*"
        ],
        "max_file_size": 10737418240
      }
    }
  ],
  "scanner_pools": [
    {
      "cluster": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "cluster1",
        "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
      },
      "name": "scanner-1",
      "privileged_users": [
        "cifs\\u1",
        "cifs\\u2"
      ],
      "role": "string",
      "servers": [
        "1.1.1.1",
        "10.72.204.27",
        "vmwin204-27.fsct.nb"
      ]
    }
  ],
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
```

```
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  }
}
```


### 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 | |

scope

| Name | Type | Description |
|---|---|---|
| exclude_extensions | array[string] | List of file extensions for which scanning is not performed. |
| exclude_paths | array[string] | List of file paths for which scanning must not be performed. |
| include_extensions | array[string] | List of file extensions to be scanned. |
| max_file_size | integer | Maximum file size, in bytes, allowed for scanning. |
| only_execute_access | boolean | Scan only files opened with execute-access. |
| scan_readonly_volumes | boolean | Specifies whether or not read-only volume can be scanned. |
| scan_without_extension | boolean | Specifies whether or not files without any extension can be scanned. |

vscan_on_access

An On-Access policy that defines the scope of an On-Access scan. Use On-Access scanning to check for viruses when clients open, read, rename, or close files over CIFS. By default, ONTAP creates an On-Access policy named "default_CIFS" and enables it for all the SVMs in a cluster.

| Name | Type | Description |
|---|---|---|
| enabled | boolean | Status of the On-Access Vscan policy |

| Name | Type | Description |
|---|---|---|
| mandatory | boolean | Specifies if scanning is mandatory. File access is denied if there are no external virus-scanning servers available for virus scanning. |
| name | string | On-Access policy ame |
| scope | scope | |

schedule

Schedule of the task.

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

scope

| Name | Type | Description |
|---|---|---|
| exclude_extensions | array[string] | List of file extensions for which scanning is not performed. |
| exclude_paths | array[string] | List of file paths for which scanning must not be performed. |
| include_extensions | array[string] | List of file extensions to be scanned. |
| max_file_size | integer | Maximum file size, in bytes, allowed for scanning. |
| scan_without_extension | boolean | Specifies whether or not files without any extension can be scanned. |

vscan_on_demand

Use On-Demand scanning to check files for viruses on a schedule. An On-Demand policy defines the scope of an On-Demand scan.

| Name | Type | Description |
|---|---|---|
| log_path | string | The path from the Vserver root where the task report is created. |
| name | string | On-Demand task name |
| scan_paths | array[string] | List of paths that need to be scanned. |
| schedule | schedule | Schedule of the task. |
| scope | scope | |

cluster_reference

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | |
| uuid | string | |

vscan_scanner_pool

Scanner pool is a set of attributes which are used to validate and manage connections between clustered ONTAP and external virus-scanning server, or "Vscan server".

| Name | Type | Description |
|---|---|---|
| cluster | cluster_reference | |
| name | string | Specifies the name of the scanner pool. Scanner pool name can be up to 256 characters long and is a string that can only contain any combination of ASCII-range alphanumeric characters a-z, A-Z, 0-9), "_", "-" and ".". |

| Name | Type | Description |
|---|---|---|
| privileged_users | array[string] | Specifies a list of privileged users. A valid form of privileged user-name is "domain-name\user-name". Privileged user-names are stored and treated as case-insensitive strings. Virus scanners must use one of the registered privileged users for connecting to clustered Data ONTAP for exchanging virus-scanning protocol messages and to access file for scanning, remedying and quarantining operations.<br>• example: ["cifs\u1", "cifs\u2"] |
| role | string | Specifies the role of the scanner pool. The possible values are:<br>• primary - Always active.<br>• secondary - Active only when none of the primary external virus-scanning servers are connected.<br>• idle - Always inactive. |
| servers | array[string] | Specifies a list of IP addresses or FQDN for each Vscan server host names which are allowed to connect to clustered ONTAP.<br>• example: ["1.1.1.1", "10.72.204.27", "vmwin204-27.fsct.nb"] |

svm

SVM, applies only to SVM-scoped objects.

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

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 the Vscan configuration for an SVM

PATCH `/protocols/vscan/{svm.uuid}`

Updates the Vscan configuration of an SVM. Allows you to either enable or disable a Vscan, and allows you to clear the Vscan cache that stores the past scanning data for an SVM.

Important note:

- The Vscan PATCH endpoint does not allow you to modify scanner-pools, On-Demand policies or On-Access policies. Those modifications can only be done through their respective endpoints.

### Related ONTAP commands

- `vserver vscan enable`
- `vserver vscan disable`
- `vserver vscan reset`

### Learn more

- DOC /protocols/vscan
- DOC /protocols/vscan/{svm.uuid}/scanner-pools

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |

### Request Body

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| cache_clear | boolean | Discards the cached information of the files that have been successfully scanned. Once the cache is cleared, files are scanned again when they are accessed. PATCH only |
| enabled | boolean | Specifies whether or not Vscan is enabled on the SVM. |

### Example request

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  }
}
```

### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 10027015 | Attempting to enable a Vscan but no active scanner-pool exists for the specified SVM |
| 10027011 | Attempting to enable a Vscan for an SVM for which no CIFS server exists |
| 10027023 | Attempting to enable a Vscan for an SVM for which no active Vscan On-Access policy exists |

| 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 | |

scope

| Name | Type | Description |
|---|---|---|
| exclude_extensions | array[string] | List of file extensions for which scanning is not performed. |
| exclude_paths | array[string] | List of file paths for which scanning must not be performed. |
| include_extensions | array[string] | List of file extensions to be scanned. |
| max_file_size | integer | Maximum file size, in bytes, allowed for scanning. |
| only_execute_access | boolean | Scan only files opened with execute-access. |
| scan_readonly_volumes | boolean | Specifies whether or not read-only volume can be scanned. |
| scan_without_extension | boolean | Specifies whether or not files without any extension can be scanned. |

vscan_on_access

An On-Access policy that defines the scope of an On-Access scan. Use On-Access scanning to check for viruses when clients open, read, rename, or close files over CIFS. By default, ONTAP creates an On-Access policy named "default_CIFS" and enables it for all the SVMs in a cluster.

| Name | Type | Description |
|---|---|---|
| enabled | boolean | Status of the On-Access Vscan policy |

| Name | Type | Description |
|---|---|---|
| mandatory | boolean | Specifies if scanning is mandatory. File access is denied if there are no external virus-scanning servers available for virus scanning. |
| scope | scope | |

schedule

Schedule of the task.

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

scope

| Name | Type | Description |
|---|---|---|
| exclude_extensions | array[string] | List of file extensions for which scanning is not performed. |
| exclude_paths | array[string] | List of file paths for which scanning must not be performed. |
| include_extensions | array[string] | List of file extensions to be scanned. |
| max_file_size | integer | Maximum file size, in bytes, allowed for scanning. |
| scan_without_extension | boolean | Specifies whether or not files without any extension can be scanned. |

vscan_on_demand

Use On-Demand scanning to check files for viruses on a schedule. An On-Demand policy defines the scope of an On-Demand scan.

| Name | Type | Description |
|---|---|---|
| log_path | string | The path from the Vserver root where the task report is created. |
| scan_paths | array[string] | List of paths that need to be scanned. |
| schedule | schedule | Schedule of the task. |
| scope | scope | |

cluster_reference

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | |
| uuid | string | |

vscan_scanner_pool

Scanner pool is a set of attributes which are used to validate and manage connections between clustered ONTAP and external virus-scanning server, or "Vscan server".

| Name | Type | Description |
|---|---|---|
| cluster | cluster_reference | |
| privileged_users | array[string] | Specifies a list of privileged users. A valid form of privileged user-name is "domain-name\user-name". Privileged user-names are stored and treated as case-insensitive strings. Virus scanners must use one of the registered privileged users for connecting to clustered Data ONTAP for exchanging virus-scanning protocol messages and to access file for scanning, remedying and quarantining operations.<br>• example: ["cifs\u1", "cifs\u2"] |

| Name | Type | Description |
|---|---|---|
| role | string | Specifies the role of the scanner pool. The possible values are:<br>• primary - Always active.<br>• secondary - Active only when none of the primary external virus-scanning servers are connected.<br>• idle - Always inactive. |
| servers | array[string] | Specifies a list of IP addresses or FQDN for each Vscan server host names which are allowed to connect to clustered ONTAP.<br>• example: ["1.1.1.1", "10.72.204.27", "vmwin204-27.fsct.nb"] |

svm

SVM, applies only to SVM-scoped objects.

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

vscan

Vscan can be used to protect data from being compromised by viruses or other malicious code. This combines best-in-class third-party antivirus software with ONTAP features that give you the flexibility you need to control which files get scanned and when. Storage systems offload scanning operations to external servers hosting antivirus software from thirdparty vendors. An Antivirus Connector on the external server handles communications between the storage system and the antivirus software.

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| cache_clear | boolean | Discards the cached information of the files that have been successfully scanned. Once the cache is cleared, files are scanned again when they are accessed. PATCH only |

| Name | Type | Description |
|---|---|---|
| enabled | boolean | Specifies whether or not Vscan is enabled on the SVM. |

error_arguments

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

error

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

# Manage Vscan On-Access policies

## Protocols Vscan svm.uuid on-access-policies endpoint overview

### Overview

Use Vscan On-Access scanning to actively scan file objects for viruses when clients access files over SMB. To control which file operations trigger a vscan, use Vscan File-Operations Profile (vscan-fileop-profile) option in the CIFS share. The Vscan On-Access policy configuration defines the scope and status of On-Access scanning on file objects. Use this API to retrieve and manage Vscan On-Access policy configurations and Vscan On-Access policy statuses for the SVM.

### Examples

#### Retrieving all fields for all policies of an SVM

```
# The API:
/api/protocols/vscan/{svm.uuid}/on_access_policies/
```

```
# The call:
curl -X GET "https://<mgmt-
ip>/api/protocols/vscan/{svm.uuid}/on_access_policies?fields=*" -H
"accept: application/hal+json"

# The response:
{
"records": [
  {
    "svm": {
      "uuid": "179d3c85-7053-11e8-b9b8-005056b41bd1",
      "name": "vs1"
      "_links": {
        "self": {
          "href": "/api/svm/svms/179d3c85-7053-11e8-b9b8-005056b41bd1"
        }
      }
    },
    "name": "default_CIFS",
    "enabled": true,
    "mandatory": true,
    "scope": {
      "max_file_size": 2147483648,
      "include_extensions": [
        "*"
      ],
      "scan_without_extension": true,
      "scan_readonly_volumes": false,
      "only_execute_access": false
    },
    "_links": {
      "self": {
        "href": "/api/protocols/vscan/179d3c85-7053-11e8-b9b8-
005056b41bd1/on_access_policies/default_CIFS"
      }
    }
  },
  {
    "svm": {
      "uuid": "179d3c85-7053-11e8-b9b8-005056b41bd1",
      "name": "vs1"
      "_links": {
        "self": {
          "href": "/api/svm/svms/179d3c85-7053-11e8-b9b8-005056b41bd1"
        }
      }
```

```
    },
    "name": "on-access-policy",
    "enabled": false,
    "mandatory": true,
    "scope": {
      "max_file_size": 3221225472,
      "exclude_paths": [
        "\\vol\\a b\\",
        "\\vol\\a,b\\"
      ],
      "include_extensions": [
        "mp*",
        "tx*"
      ],
      "exclude_extensions": [
        "mp3",
        "txt"
      ],
      "scan_without_extension": true,
      "scan_readonly_volumes": false,
      "only_execute_access": true
    }
    "_links": {
      "self": {
        "href": "/api/protocols/vscan/179d3c85-7053-11e8-b9b8-
005056b41bd1/on_access_policies/on-access-policy"
      }
    }
  }
],
"num_records": 2,
"_links": {
  "self": {
    "href": "/api/protocols/vscan/179d3c85-7053-11e8-b9b8-
005056b41bd1/on_access_policies?fields=*"
  }
}
}
```


#### Retrieving the specific On-Access policy associated with the specified SVM

```
# The API:
```

```
/api/protocols/vscan/{svm.uuid}/on_access_policies/{name}

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/vscan/179d3c85-7053-11e8-
b9b8-005056b41bd1/on_access_policies/on-access-policy" -H "accept:
application/json"

# The response:
{
"svm": {
  "uuid": "179d3c85-7053-11e8-b9b8-005056b41bd1",
  "name": "vs1"
  "_links": {
    "self": {
      "href": "/api/svm/svms/179d3c85-7053-11e8-b9b8-005056b41bd1"
    }
  }
},
"name": "on-access-policy",
"enabled": true,
"mandatory": true,
"scope": {
  "max_file_size": 3221225472,
  "exclude_paths": [
    "\\vol\\a b\\",
    "\\vol\\a,b\\"
  ],
  "include_extensions": [
    "mp*",
    "tx*"
  ],
  "exclude_extensions": [
    "mp3",
    "txt"
  ],
  "scan_without_extension": true,
  "scan_readonly_volumes": false,
  "only_execute_access": true
}
"_links": {
  "self": {
    "href": "/api/protocols/vscan/179d3c85-7053-11e8-b9b8-
005056b41bd1/on_access_policies/task1"
  }
}
}
```

**Creating a Vscan On-Access policy**

The Vscan On-Access policy POST endpoint creates an On-Access policy for the specified SVM. Set enabled to "true" to enable scanning on the created policy.

```
# The API:
/api/protocols/vscan/{svm.uuid}/on_access_policies

# The call:
curl -X POST "https://<mgmt-ip>/api/protocols/vscan/86fbc414-f140-11e8-
8e22-0050568e0945/on_access_policies?return_records=true" -H "accept:
application/json" -H "Content-Type: application/json" -d "{ \"enabled\":
false, \"mandatory\": true, \"name\": \"on-access-policy\", \"scope\": {
\"exclude_extensions\": [ \"txt\", \"mp3\" ], \"exclude_paths\": [
\"\\\\dir1\\\\dir2\\\\ame\", \"\\\\vol\\\\a b\" ], \"include_extensions\":
[  \"mp*\", \"txt\" ], \"max_file_size\": 3221225472,
\"only_execute_access\": true, \"scan_readonly_volumes\": false,
\"scan_without_extension\": true }}"

# The response:
{
"num_records": 1,
"records": [
  {
    "svm": {
      "name": "vs1"
    },
    "name": "on-access-policy",
    "enabled": false,
    "mandatory": true,
    "scope": {
      "max_file_size": 3221225472,
      "exclude_paths": [
        "\\dir1\\dir2\\ame",
        "\\vol\\a b"
      ],
      "include_extensions": [
        "mp*",
        "txt"
      ],
      "exclude_extensions": [
        "txt",
        "mp3"
      ],
      "scan_without_extension": true,
      "scan_readonly_volumes": false,
      "only_execute_access": true
```

```
    }
  }
]
}
```

#### Creating a Vscan On-Access policy where a number of optional fields are not specified

```
# The API:
/api/protocols/vscan/{svm.uuid}/on_access_policies

# The call:
curl -X POST "https://<mgmt-ip>/api/protocols/vscan/86fbc414-f140-11e8-
8e22-0050568e0945/on_access_policies?return_records=true" -H "accept:
application/json" -H "Content-Type: application/json" -d "{ \"enabled\":
false, \"mandatory\": true, \"name\": \"on-access-policy\", \"scope\": {
\"exclude_paths\": [ \"\\\\vol\\\\a b\", \"\\\\vol\\\\a,b\\\\\" ],
\"max_file_size\": 1073741824, \"scan_without_extension\": true }}"

# The response:
{
"num_records": 1,
"records": [
  {
    "svm": {
      "name": "vs1"
    },
    "name": "on-access-policy",
    "enabled": false,
    "mandatory": true,
    "scope": {
      "max_file_size": 1073741824,
      "exclude_paths": [
        "\\vol\\a b",
        "\\vol\\a,b\\"
      ],
      "scan_without_extension": true
    }
  }
]
}
```

#### Updating a Vscan On-Access policy

The policy being modified is identified by the UUID of the SVM and the policy name.

```
# The API:
/api/protocols/vscan/{svm.uuid}/on_access_policies/{name}

# The call:
curl -X PATCH "https://<mgmt-ip>/api/protocols/vscan/86fbc414-f140-11e8-
8e22-0050568e0945/on_access_policies/on-access-policy" -H "accept:
application/hal+json" -H "Content-Type: application/json" -d "{ \"scope\":
{ \"include_extensions\": [ \"txt\" ], \"only_execute_access\": true,
\"scan_readonly_volumes\": false, \"scan_without_extension\": true }}"
```

#### Deleting a Vscan On-Access policy

The policy to be deleted is identified by the UUID of the SVM and the policy name.

```
# The API:
/api/protocols/vscan/{svm.uuid}/on_access_policies/{name}

# The call:
curl -X DELETE "https://<mgmt-ip>/api/protocols/vscan/86fbc414-f140-11e8-
8e22-0050568e0945/on_access_policies/on-access-policy" -H "accept:
application/hal+json"
```

## Retrieve a Vscan On-Access policy

GET `/protocols/vscan/{svm.uuid}/on-access-policies`

Retrieves the Vscan On-Access policy.

### Related ONTAP commands

- `vserver vscan on-access-policy show`
- `vserver vscan on-access-policy file-ext-to-include show`
- `vserver vscan on-access-policy file-ext-to-exclude show`
- `vserver vscan on-access-policy paths-to-exclude show`

### Learn more

- DOC /protocols/vscan/{svm.uuid}/on-access-policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| mandatory | boolean | query | False | Filter by mandatory |
| name | string | query | False | Filter by name |
| scope.scan_without_extension | boolean | query | False | Filter by scope.scan_without_extension |
| scope.only_execute_access | boolean | query | False | Filter by scope.only_execute_access |
| scope.exclude_paths | string | query | False | Filter by scope.exclude_paths |
| scope.scan_readonly_volumes | boolean | query | False | Filter by scope.scan_readonly_volumes |
| scope.exclude_extensions | string | query | False | Filter by scope.exclude_extensions |
| scope.max_file_size | integer | query | False | Filter by scope.max_file_size |
| scope.include_extensions | string | query | False | Filter by scope.include_extensions |
| 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. |

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

**Response**

```
Status: 200, Ok
```

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

### Example response


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "name": "on-access-test",
      "scope": {
        "exclude_extensions": [
          "mp*",
          "txt"
        ],
        "exclude_paths": [
          "\\dir1\\dir2\\name",
          "\\vol\\a b",
          "\\vol\\a,b\\"
        ],
        "include_extensions": [
          "mp*",
          "txt"
        ],
        "max_file_size": 2147483648
      }
    }
  ]
}
```


### 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 |
|---|---|---|
| next | href | |
| self | href | |

scope

| Name | Type | Description |
|---|---|---|
| exclude_extensions | array[string] | List of file extensions for which scanning is not performed. |
| exclude_paths | array[string] | List of file paths for which scanning must not be performed. |
| include_extensions | array[string] | List of file extensions to be scanned. |
| max_file_size | integer | Maximum file size, in bytes, allowed for scanning. |
| only_execute_access | boolean | Scan only files opened with execute-access. |
| scan_readonly_volumes | boolean | Specifies whether or not read-only volume can be scanned. |
| scan_without_extension | boolean | Specifies whether or not files without any extension can be scanned. |

vscan_on_access

An On-Access policy that defines the scope of an On-Access scan. Use On-Access scanning to check for viruses when clients open, read, rename, or close files over CIFS. By default, ONTAP creates an On-Access policy named "default_CIFS" and enables it for all the SVMs in a cluster.

| Name | Type | Description |
|---|---|---|
| enabled | boolean | Status of the On-Access Vscan policy |
| mandatory | boolean | Specifies if scanning is mandatory. File access is denied if there are no external virus-scanning servers available for virus scanning. |
| name | string | On-Access policy ame |
| scope | scope | |

error_arguments

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

error

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

## Create a Vscan On-Access policy

POST `/protocols/vscan/{svm.uuid}/on-access-policies`

Creates a Vscan On-Access policy. Created only on a data SVM. </b>Important notes:

- You must enable the policy on an SVM before its files can be scanned.
- You can enable only one On-Access policy at a time on an SVM. By default, the policy is enabled on creation. * If the Vscan On-Access policy has been created successfully on an SVM but cannot be enabled due to an error, the Vscan On-Access policy configurations are saved. The Vscan On-Access policy is then enabled using the PATCH operation.

### Required properties

- `svm.uuid` - Existing SVM in which to create the Vscan On-Access policy.
- `name` - Name of the Vscan On-Access policy. Maximum length is 256 characters.

### Default property values

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

- `enabled` - *true*
- `mandatory` - *true*
- `include_extensions` - *
- `max_file_size` - *2147483648*
- `only_execute_access` - *false*
- `scan_readonly_volumes` - *false*
- `scan_without_extension` - *true*

### Related ONTAP commands

- `vserver vscan on-access-policy create`
- `vserver vscan on-access-policy enable`
- `vserver vscan on-access-policy disable`
- `vserver vscan on-access-policy file-ext-to-include add`
- `vserver vscan on-access-policy file-ext-to-exclude add`
- `vserver vscan on-access-policy paths-to-exclude add`

### Learn more

- DOC /protocols/vscan/{svm.uuid}/on-access-policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| return_records | boolean | query | False | The default is false. If set to true, the records are returned. |
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |

### Request Body

| Name | Type | Description |
|---|---|---|
| enabled | boolean | Status of the On-Access Vscan policy |
| mandatory | boolean | Specifies if scanning is mandatory. File access is denied if there are no external virus-scanning servers available for virus scanning. |
| name | string | On-Access policy ame |
| scope | scope | |

### Example request

```
{
  "name": "on-access-test",
  "scope": {
    "exclude_extensions": [
      "mp*",
      "txt"
    ],
    "exclude_paths": [
      "\\dir1\\dir2\\name",
      "\\vol\\a b",
      "\\vol\\a,b\\"
    ],
    "include_extensions": [
      "mp*",
      "txt"
    ],
    "max_file_size": 2147483648
  }
}
```

### Response

```
Status: 201, Created
```

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

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

**Example response**


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "name": "on-access-test",
      "scope": {
        "exclude_extensions": [
          "mp*",
          "txt"
        ],
        "exclude_paths": [
          "\\dir1\\dir2\\name",
          "\\vol\\a b",
          "\\vol\\a,b\\"
        ],
        "include_extensions": [
          "mp*",
          "txt"
        ],
        "max_file_size": 2147483648
      }
    }
  ]
}
```


**Error**

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
| --- | --- |
| 10027043 | The new On-Access policy cannot be created as the SVM has reached the maximum number of On-Access policies allowed. Delete an existing policy in order to create a new policy |
| 10027101 | The file size must be in the range 1KB to 1TB |
| 10027107 | The include extensions list cannot be empty. Specify at least one extension for inclusion |
| 10027109 | The specified CIFS path is invalid. It must be in the form "\dir1\dir2" or "\dir1\dir2\" |
| 10027249 | The On-Access policy created successfully but failed to enable the policy. The reason for enable policy operation failure might be that another policy is enabled. Disable the enabled policy and then enable the newly created policy using the PATCH operation |
| 10027253 | The number of paths specified exceeds the configured number of maximum paths. You cannot specify more than the maximum number of configured paths |
| 10027254 | The number of extensions specified exceeds the configured maximum number of extensions. You cannot specify more than the maximum number of configured extensions |

| 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**

scope

| Name | Type | Description |
|---|---|---|
| exclude_extensions | array[string] | List of file extensions for which scanning is not performed. |
| exclude_paths | array[string] | List of file paths for which scanning must not be performed. |
| include_extensions | array[string] | List of file extensions to be scanned. |
| max_file_size | integer | Maximum file size, in bytes, allowed for scanning. |
| only_execute_access | boolean | Scan only files opened with execute-access. |
| scan_readonly_volumes | boolean | Specifies whether or not read-only volume can be scanned. |
| scan_without_extension | boolean | Specifies whether or not files without any extension can be scanned. |

vscan_on_access

An On-Access policy that defines the scope of an On-Access scan. Use On-Access scanning to check for viruses when clients open, read, rename, or close files over CIFS. By default, ONTAP creates an On-Access policy named "default_CIFS" and enables it for all the SVMs in a cluster.

| Name | Type | Description |
|---|---|---|
| enabled | boolean | Status of the On-Access Vscan policy |
| mandatory | boolean | Specifies if scanning is mandatory. File access is denied if there are no external virus-scanning servers available for virus scanning. |
| name | string | On-Access policy ame |
| scope | scope | |

href

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

_links

| Name | Type | Description |
|---|---|---|
| next | href | |
| self | href | |

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 an antivirus On-Access policy configuration

DELETE `/protocols/vscan/{svm.uuid}/on-access-policies/{name}`

Deletes the anti-virus On-Access policy configuration.

### Related ONTAP commands

- `vserver vscan on-access-policy delete`

### Learn more

- DOC /protocols/vscan/{svm.uuid}/on-access-policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| name | string | path | True | |

### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 10027034 | An On-Access policy associated with an administrative SVM cannot be deleted. |
| 10027040 | An On-Access policy with a status enabled cannot be deleted. Disable the policy and then delete the policy. |

| 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 the Vscan On-Access policy configuration for an SVM

GET `/protocols/vscan/{svm.uuid}/on-access-policies/{name}`

Retrieves the Vscan On-Access policy configuration of an SVM.

### Related ONTAP commands

- `vserver vscan on-access-policy show`
- `vserver vscan on-access-policy file-ext-to-include show`
- `vserver vscan on-access-policy file-ext-to-exclude show`
- `vserver vscan on-access-policy paths-to-exclude show`

### Learn more

- DOC /protocols/vscan/{svm.uuid}/on-access-policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| name | string | path | True | |
| fields | array[string] | query | False | Specify the fields to return. |

### Response

```
Status: 200, Ok
```

| Name | Type | Description |
|---|---|---|
| enabled | boolean | Status of the On-Access Vscan policy |
| mandatory | boolean | Specifies if scanning is mandatory. File access is denied if there are no external virus-scanning servers available for virus scanning. |
| name | string | On-Access policy ame |
| scope | scope | |

### Example response


```
{
  "name": "on-access-test",
  "scope": {
    "exclude_extensions": [
      "mp*",
      "txt"
    ],
    "exclude_paths": [
      "\\dir1\\dir2\\name",
      "\\vol\\a b",
      "\\vol\\a,b\\"
    ],
    "include_extensions": [
      "mp*",
      "txt"
    ],
    "max_file_size": 2147483648
  }
}
```


### 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**

scope

| Name | Type | Description |
|---|---|---|
| exclude_extensions | array[string] | List of file extensions for which scanning is not performed. |
| exclude_paths | array[string] | List of file paths for which scanning must not be performed. |
| include_extensions | array[string] | List of file extensions to be scanned. |
| max_file_size | integer | Maximum file size, in bytes, allowed for scanning. |
| only_execute_access | boolean | Scan only files opened with execute-access. |
| scan_readonly_volumes | boolean | Specifies whether or not read-only volume can be scanned. |
| scan_without_extension | boolean | Specifies whether or not files without any extension can be scanned. |

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 Vscan On-Access policy configuration for an SVM

PATCH `/protocols/vscan/{svm.uuid}/on-access-policies/{name}`

Updates the Vscan On-Access policy configuration and/or enables/disables the Vscan On-Access policy of an SVM. You cannot modify the configurations for an On-Access policy associated with an administrative SVM, although you can encable and disable the policy associated with an administrative SVM.

### Related ONTAP commands

- `vserver vscan on-access-policy modify`
- `vserver vscan on-access-policy enable`
- `vserver vscan on-access-policy disable`
- `vserver vscan on-access-policy file-ext-to-include add`
- `vserver vscan on-access-policy file-ext-to-exclude add`
- `vserver vscan on-access-policy paths-to-exclude add`
- `vserver vscan on-access-policy file-ext-to-include remove`
- `vserver vscan on-access-policy file-ext-to-exclude remove`
- `vserver vscan on-access-policy paths-to-exclude remove`

### Learn more

- DOC /protocols/vscan/{svm.uuid}/on-access-policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| name | string | path | True | |

### Request Body

| Name | Type | Description |
|---|---|---|
| enabled | boolean | Status of the On-Access Vscan policy |
| mandatory | boolean | Specifies if scanning is mandatory. File access is denied if there are no external virus-scanning servers available for virus scanning. |
| scope | scope | |

### Example request

```
{
  "scope": {
    "exclude_extensions": [
      "mp*",
      "txt"
    ],
    "exclude_paths": [
      "\\dir1\\dir2\\name",
      "\\vol\\a b",
      "\\vol\\a,b\\"
    ],
    "include_extensions": [
      "mp*",
      "txt"
    ],
    "max_file_size": 2147483648
  }
}
```

### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 10027033 | Configurations for an On-Access policy associated with an administrative SVM cannot be modified. However, the policy can be enabled or disabled. |
| 10027046 | The specified SVM is not the owner of the specified policy. Check for the correct SVM who owns the policy. |
| 10027101 | The file size must be in the range 1KB to 1TB |
| 10027107 | The include extensions list cannot be empty. Specify at least one extension for inclusion. |

| Error Code | Description |
| --- | --- |
| 10027109 | The specified CIFS path is invalid. It must be in the form "\dir1\dir2" or "\dir1\dir2\". |
| 10027249 | The On-Access policy updated successfully but failed to enable/disable the policy. The reason for an enable policy operation failure might be that another policy is enabled. Disable the already enabled policy and then enable the policy. The reason for a disable policy operation failure might be that Vscan is enabled on the SVM. Disable the Vscan first and then disable the policy. |
| 10027250 | The On-Access policy cannot be enabled/disabled. The reason for an enable policy operation failure might be that another policy is enabled. Disable the already enabled policy and then enable the policy. The reason for a disable policy operation failure might be that Vscan is enabled on the SVM. Disable the Vscan and then disable the policy. |
| 10027253 | The number of paths specified exceeds the configured maximum number of paths. You cannot specify more than the maximum number of configured paths. |
| 10027254 | The number of extensions specified exceeds the configured maximum number of extensions. You cannot specify more than the maximum number of configured extensions. |

| 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**

scope

| Name | Type | Description |
|---|---|---|
| exclude_extensions | array[string] | List of file extensions for which scanning is not performed. |
| exclude_paths | array[string] | List of file paths for which scanning must not be performed. |
| include_extensions | array[string] | List of file extensions to be scanned. |
| max_file_size | integer | Maximum file size, in bytes, allowed for scanning. |
| only_execute_access | boolean | Scan only files opened with execute-access. |
| scan_readonly_volumes | boolean | Specifies whether or not read-only volume can be scanned. |
| scan_without_extension | boolean | Specifies whether or not files without any extension can be scanned. |

vscan_on_access

An On-Access policy that defines the scope of an On-Access scan. Use On-Access scanning to check for viruses when clients open, read, rename, or close files over CIFS. By default, ONTAP creates an On-Access policy named "default_CIFS" and enables it for all the SVMs in a cluster.

| Name | Type | Description |
|---|---|---|
| enabled | boolean | Status of the On-Access Vscan policy |
| mandatory | boolean | Specifies if scanning is mandatory. File access is denied if there are no external virus-scanning servers available for virus scanning. |
| scope | scope | |

error_arguments

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

error

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

# Manage Vscan On-Demand policies

## Protocols Vscan svm.uuid on-demand-policies endpoint overview

### Overview

Vscan On-Demand scanning is used to check files for viruses on a schedule. For example, it can be used to run scans only in off-peak hours, or to scan very large files that are excluded from an on-access scan. Vscan On-Demand scanning can be used for any path in the SVM namespace.

Vscan On-Demand policy configurations define the scope of a Vscan On-Demand scan. The schedule parameter in the On-Demand policy configuration decides when to execute the task. Schedule can be created using the /api/clusters/schedule endpoint and can be assigned on policy create or policy modify. This API is used to retrieve and manage Vscan On-Demand policy configurations. It is also used to schedule the Vscan On-Demand scan.

### Examples

#### Retrieving all fields for all policies of an SVM

```
# The API:
/api/protocols/vscan/{svm.uuid}/on_demand_policies/

# The call:
curl -X GET "https://<mgmt-
ip>/api/protocols/vscan/{svm.uuid}/on_demand_policies?fields=*" -H
```

```
"accept: application/hal+json"

# The response:
{
"records": [
  {
    "svm": {
      "uuid": "86fbc414-f140-11e8-8e22-0050568e0945",
      "name": "vs1",
      "_links": {
        "self": {
          "href": "/api/svm/svms/86fbc414-f140-11e8-8e22-0050568e0945"
        }
      }
    },
    "name": "on-demand-policy1",
    "scan_paths": [
      "/vol1/",
      "/vol2/cifs/"
    ],
    "log_path": "/vol0/report_dir",
    "schedule": {
      "uuid": "f6d0843e-f159-11e8-8e22-0050568e0945",
      "name": "schedule",
      "_links": {
        "self": {
          "href": "/api/cluster/schedules/f6d0843e-f159-11e8-8e22-
0050568e0945"
        }
      }
    },
    "scope": {
      "max_file_size": 10737418240,
      "exclude_paths": [
        "/vol1/cold-files/",
        "/vol1/cifs/names"
      ],
      "include_extensions": [
        "vmdk",
        "mp*"
      ],
      "exclude_extensions": [
        "mp3",
        "mp4"
      ],
      "scan_without_extension": false
```

```
    },
    "_links": {
      "self": {
        "href": "/api/protocols/vscan/86fbc414-f140-11e8-8e22-
0050568e0945/on_demand_policies/policy1"
      }
    }
  },
  {
    "svm": {
      "uuid": "86fbc414-f140-11e8-8e22-0050568e0945",
      "name": "vs1",
      "_links": {
        "self": {
          "href": "/api/svm/svms/86fbc414-f140-11e8-8e22-0050568e0945"
        }
      }
    },
    "name": "on-demand-policy2",
    "scan_paths": [
      "/vol1/",
      "/vol2/cifs/"
    ],
    "log_path": "/report",
    "scope": {
      "max_file_size": 10737418240,
      "include_extensions": [
        "mp*"
      ],
      "scan_without_extension": true
    },
    "_links": {
      "self": {
        "href": "/api/protocols/vscan/86fbc414-f140-11e8-8e22-
0050568e0945/on_demand_policies/policy2"
      }
    }
  }
],
"num_records": 2,
"_links": {
  "self": {
    "href": "/api/protocols/vscan/86fbc414-f140-11e8-8e22-
0050568e0945/on_demand_policies?fields=*"
  }
}
```

```
}
```

### Retrieving a specific On-Demand policy associated with a specified SVM

```
# The API:
/api/protocols/vscan/{svm.uuid}/on_demand_policies/{name}

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/vscan/86fbc414-f140-11e8-
8e22-0050568e0945/on_demand_policies/on-demand-task" -H "accept:
application/json"

# The response:
{
"svm": {
  "uuid": "86fbc414-f140-11e8-8e22-0050568e0945",
  "name": "vs1",
  "_links": {
    "self": {
      "href": "/api/svm/svms/86fbc414-f140-11e8-8e22-0050568e0945"
    }
  }
},
"name": "on-demand-policy",
"scan_paths": [
  "/vol1/cifs"
],
"log_path": "/report",
"scope": {
  "max_file_size": 10737418240,
  "include_extensions": [
    "vmdk",
    "mp*"
  ],
  "scan_without_extension": true
},
"_links": {
  "self": {
    "href": "/api/protocols/vscan/86fbc414-f140-11e8-8e22-
0050568e0945/on_demand_policies/policy2"
  }
}
}
```

#### Creating a Vscan On-Demand policy

The Vscan On-Demand policy POST endpoint creates an On-Demand policy for the specified SVM. Specify the schedule parameter to schedule an On-Demand scan.

```
# The API:
/api/protocols/vscan/{svm.uuid}/on_demand_policies

# The call:
curl -X POST "https://<mgmt-ip>/api/protocols/vscan/86fbc414-f140-11e8-
8e22-0050568e0945/on_demand_policies?return_records=true" -H "accept:
application/json" -H "Content-Type: application/json" -d "{ \"log_path\":
\"/vol0/report_dir\", \"name\": \"on-demand-policy\", \"scan_paths\": [
\"/vol1/\", \"/vol2/cifs/\" ], \"schedule\": { \"name\": \"weekly\",
\"uuid\": \"1cd8a442-86d1-11e0-ae1c-123478563412\" }, \"scope\": {
\"exclude_extensions\": [ \"mp3\" ], \"exclude_paths\": [ \"/vol/cold-
files/\" ], \"include_extensions\": [ \"vmdk\", \"mp*\" ],
\"max_file_size\": 1073741824, \"scan_without_extension\": true }}"

# The response:
{
"num_records": 1,
"records": [
  {
    "svm": {
      "name": "vs1"
    },
    "name": "on-demand-policy",
    "scan_paths": [
      "/vol1/",
      "/vol2/cifs/"
    ],
    "log_path": "/vol0/report_dir",
    "schedule": {
      "name": "weekly"
    },
    "scope": {
      "max_file_size": 1073741824,
      "exclude_paths": [
        "/vol/cold-files/"
      ],
      "include_extensions": [
        "vmdk",
        "mp*"
      ],
      "exclude_extensions": [
        "mp3"
      ],
      "scan_without_extension": true
    }
```

```
  }
]
}
```

#### Creating a Vscan On-Demand policy where a number of optional fields are not specified

```
# The API:
/api/protocols/vscan/{svm.uuid}/on_demand_policies

# The call:
curl -X POST "https://<mgmt-ip>/api/protocols/vscan/86fbc414-f140-11e8-
8e22-0050568e0945/on_demand_policies?return_records=true" -H "accept:
application/json" -H "Content-Type: application/json" -d "{ \"log_path\":
\"/report\", \"name\": \"on-demand-policy\", \"scan_paths\": [
\"/vol1/cifs/\" ], \"scope\": { \"include_extensions\": [ \"mp*\" ],
\"scan_without_extension\": true }}"

# The response:
{
"num_records": 1,
"records": [
  {
    "svm": {
      "name": "vs1"
    },
    "name": "on-demand-policy",
    "scan_paths": [
      "vol1/cifs/"
    ],
    "log_path": "/report",
    "scope": {
      "max_file_size": 10737418240,
      "include_extensions": [
        "vmdk",
        "mp*"
      ],
      "scan_without_extension": true
    }
  }
]
}
```

#### Updating a Vscan On-Demand policy

The policy being modified is identified by the UUID of the SVM and the policy name.

```
# The API:
/api/protocols/vscan/{svm.uuid}/on_demand_policies/{name}

# The call:
curl -X PATCH "https://<mgmt-ip>/api/protocols/vscan/86fbc414-f140-11e8-
8e22-0050568e0945/on_demand_policies/on-demand-policy" -H "accept:
application/json" -H "Content-Type: application/json" -d "{ \"schedule\":
{ \"name\": \"weekly\" }, \"scope\": { \"exclude_extensions\": [ \"mp3\"
], \"exclude_paths\": [ \"/vol/\" ], \"include_extensions\": [ \"vmdk\",
\"mp3\" ], \"scan_without_extension\": true }}"
```

#### Deleting a Vscan On-Demand policy

The policy to be deleted is identified by the UUID of the SVM and the policy name.

```
# The API:
/api/protocols/vscan/{svm.uuid}/on_demand_policies/{name}

# The call:
curl -X DELETE "https://<mgmt-ip>/api/protocols/vscan/86fbc414-f140-11e8-
8e22-0050568e0945/on_demand_policies/on-demand-policy" -H "accept:
application/hal+json"
```

## Retrieve a Vscan On-Demand policy

GET `/protocols/vscan/{svm.uuid}/on-demand-policies`

Retrieves the Vscan On-Demand policy.

### Related ONTAP commands

- `vserver vscan on-demand-task show`

### Learn more

- DOC /protocols/vscan/{svm.uuid}/on-demand-policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| scope.include_extensions | string | query | False | Filter by scope.include_extensions |
| scope.max_file_size | integer | query | False | Filter by scope.max_file_size |
| scope.exclude_extensions | string | query | False | Filter by scope.exclude_extensions |
| scope.exclude_paths | string | query | False | Filter by scope.exclude_paths |
| scope.scan_without_extension | boolean | query | False | Filter by scope.scan_without_extension |
| log_path | string | query | False | Filter by log_path |
| scan_paths | string | query | False | Filter by scan_paths |
| name | string | query | False | Filter by name |
| schedule.uuid | string | query | False | Filter by schedule.uuid |
| schedule.name | string | query | False | Filter by schedule.name |
| fields | array[string] | query | False | Specify the fields to return. |
| max_records | integer | query | False | Limit the number of records returned. |
| return_records | boolean | query | False | The default is true for GET calls. When set to false, only the number of records is returned. |

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

### Response

```
Status: 200, Ok
```

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

### Example response

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "log_path": "/vol0/report_dir",
      "name": "task-1",
      "scan_paths": [
        "/vol1/",
        "/vol2/cifs/"
      ],
      "schedule": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "weekly",
        "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
      },
      "scope": {
        "exclude_extensions": [
          "mp3",
          "mp4"
        ],
        "exclude_paths": [
          "/vol1/cold-files/",
          "/vol1/cifs/names"
        ],
        "include_extensions": [
          "vmdk",
          "mp*"
        ],
        "max_file_size": 10737418240
      }
    }
  ]
}
```

### 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 |
|---|---|---|
| next | href | |
| self | href | |

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

schedule

Schedule of the task.

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

scope

| Name | Type | Description |
|---|---|---|
| exclude_extensions | array[string] | List of file extensions for which scanning is not performed. |
| exclude_paths | array[string] | List of file paths for which scanning must not be performed. |
| include_extensions | array[string] | List of file extensions to be scanned. |
| max_file_size | integer | Maximum file size, in bytes, allowed for scanning. |

| Name | Type | Description |
|---|---|---|
| scan_without_extension | boolean | Specifies whether or not files without any extension can be scanned. |

vscan_on_demand

Use On-Demand scanning to check files for viruses on a schedule. An On-Demand policy defines the scope of an On-Demand scan.

| Name | Type | Description |
|---|---|---|
| log_path | string | The path from the Vserver root where the task report is created. |
| name | string | On-Demand task name |
| scan_paths | array[string] | List of paths that need to be scanned. |
| schedule | schedule | Schedule of the task. |
| scope | scope | |

error_arguments

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

error

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

## Create a Vscan On-Demand policy

POST `/protocols/vscan/{svm.uuid}/on-demand-policies`

Creates a Vscan On-Demand policy. Created only on a data SVM.

Important notes:

- Only one policy can be scheduled at a time on an SVM. Use schedule name or schedule uuid to schedule an On-Demand policy.
- Scanning must be enabled on the SVM before the policy is scheduled to run.
- The exclude_extensions setting overrides the include_extensions setting. Set scan_without_extension to true to scan files without extensions.

### Required properties

- `svm.uuid` - Existing SVM in which to create the Vscan On-Demand policy.
- `name` - Name of the Vscan On-Demand policy. Maximum length is 256 characters.
- `log_path` - Path from the Vserver root where the On-Demand policy report is created.
- `scan_paths` - List of paths that need to be scanned.

### Recommended optional properties

- `schedule` - Scan schedule. It is recommended to set the schedule property, as it dictates when to scan for viruses.

### Default property values

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

- `include_extensions` - *
- `max_file_size` - *10737418240*
- `scan_without_extension` - *true*

### Related ONTAP commands

- `vserver vscan on-demand-task create`
- `vserver vscan on-demand-task schedule`

### Learn more

- DOC /protocols/vscan/{svm.uuid}/on-demand-policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| return_records | boolean | query | False | The default is false. If set to true, the records are returned. |
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |

**Request Body**

| Name | Type | Description |
|---|---|---|
| log_path | string | The path from the Vserver root where the task report is created. |
| name | string | On-Demand task name |
| scan_paths | array[string] | List of paths that need to be scanned. |
| schedule | schedule | Schedule of the task. |
| scope | scope | |

### Example request

```
{
  "log_path": "/vol0/report_dir",
  "name": "task-1",
  "scan_paths": [
    "/vol1/",
    "/vol2/cifs/"
  ],
  "schedule": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "weekly",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  },
  "scope": {
    "exclude_extensions": [
      "mp3",
      "mp4"
    ],
    "exclude_paths": [
      "/vol1/cold-files/",
      "/vol1/cifs/names"
    ],
    "include_extensions": [
      "vmdk",
      "mp*"
    ],
    "max_file_size": 10737418240
  }
}
```

### Response

```
Status: 201, Created
```

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

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

### Example response

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "log_path": "/vol0/report_dir",
      "name": "task-1",
      "scan_paths": [
        "/vol1/",
        "/vol2/cifs/"
      ],
      "schedule": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "weekly",
        "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
      },
      "scope": {
        "exclude_extensions": [
          "mp3",
          "mp4"
        ],
        "exclude_paths": [
          "/vol1/cold-files/",
          "/vol1/cifs/names"
        ],
        "include_extensions": [
          "vmdk",
          "mp*"
        ],
        "max_file_size": 10737418240
      }
    }
  ]
}
```

**Error**

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 10027101 | The file size must be in the range 1KB to 1TB |
| 10027107 | The include extensions list cannot be empty. Specify at least one extension for inclusion. |
| 10027164 | An On-Demand policy cannot be scheduled, as the Vscan is disabled. Enable the Vscan and retry the operation. |
| 10027167 | The specified schedule does not exist. Create the schedule or create a policy without specifying the schedule. |
| 10027168 | The specified scan path does not exist. The scan path must be specified from the root of the SVM, and must begin with UNIX path delimiters (use “/” not “\”) |
| 10027169 | The specified scan path is not supported for scanning. |
| 10027173 | The new On-Demand policy cannot be created as the SVM has reached the maximum number of On-Demand policies allowed. Delete an existing policy in order to create a new policy. |
| 10027174 | The specified exclude path is invalid. The path must be specified from the root of the SVM, and must begin with UNIX path delimiters (use "/" not "\") |
| 10027175 | An On-Demand policy cannot be scheduled as the Vserver is not in an operational state. |
| 10027176 | The log-path specified does not exist. The log path must be specified from the root of the SVM, and must begin with UNIX path delimiters (use “/” not “\”). |
| 10027177 | The log path specified is not supported. |
| 10027253 | The number of paths specified exceeds the configured maximum number of paths. You cannot specify more than the maximum number of configured paths. |
| 10027254 | The number of extensions specified exceeds the configured maximum number of extensions. You cannot specify more than the maximum number of configured extensions. |
| 10027255 | Another policy is already scheduled. Only one policy per SVM is allowed to be scheduled at any one time. Create a policy without specifying a schedule. |

| 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 | |

schedule

Schedule of the task.

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

scope

| Name | Type | Description |
|---|---|---|
| exclude_extensions | array[string] | List of file extensions for which scanning is not performed. |
| exclude_paths | array[string] | List of file paths for which scanning must not be performed. |
| include_extensions | array[string] | List of file extensions to be scanned. |
| max_file_size | integer | Maximum file size, in bytes, allowed for scanning. |
| scan_without_extension | boolean | Specifies whether or not files without any extension can be scanned. |

vscan_on_demand

Use On-Demand scanning to check files for viruses on a schedule. An On-Demand policy defines the scope of an On-Demand scan.

| Name | Type | Description |
|---|---|---|
| log_path | string | The path from the Vserver root where the task report is created. |
| name | string | On-Demand task name |
| scan_paths | array[string] | List of paths that need to be scanned. |
| schedule | schedule | Schedule of the task. |
| scope | scope | |

_links

| Name | Type | Description |
|---|---|---|
| next | href | |
| self | href | |

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 Vscan On-Demand configuration

DELETE `/protocols/vscan/{svm.uuid}/on-demand-policies/{name}`

Deletes the Vscan On-Demand configuration.

### Related ONTAP commands

- `vserver vscan on-demand-task delete`

### Learn more

- DOC /protocols/vscan/{svm.uuid}/on-demand-policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| name | string | path | True | |

### Response

```
Status: 200, Ok
```

### 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

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 Vscan On-Demand configuration for an SVM

GET `/protocols/vscan/{svm.uuid}/on-demand-policies/{name}`

Retrieves the Vscan On-Demand configuration of an SVM.

### Related ONTAP commands

- `vserver vscan on-demand-task show`

### Learn more

- DOC /protocols/vscan/{svm.uuid}/on-demand-policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| name | string | path | True | |

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

### Response

```
Status: 200, Ok
```

| Name | Type | Description |
|---|---|---|
| log_path | string | The path from the Vserver root where the task report is created. |
| name | string | On-Demand task name |
| scan_paths | array[string] | List of paths that need to be scanned. |
| schedule | schedule | Schedule of the task. |
| scope | scope | |

### Example response


```
{
  "log_path": "/vol0/report_dir",
  "name": "task-1",
  "scan_paths": [
    "/vol1/",
    "/vol2/cifs/"
  ],
  "schedule": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "weekly",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  },
  "scope": {
    "exclude_extensions": [
      "mp3",
      "mp4"
    ],
    "exclude_paths": [
      "/vol1/cold-files/",
      "/vol1/cifs/names"
    ],
    "include_extensions": [
      "vmdk",
      "mp*"
    ],
    "max_file_size": 10737418240
  }
}
```


### 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 | |

schedule

Schedule of the task.

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

scope

| Name | Type | Description |
|---|---|---|
| exclude_extensions | array[string] | List of file extensions for which scanning is not performed. |
| exclude_paths | array[string] | List of file paths for which scanning must not be performed. |
| include_extensions | array[string] | List of file extensions to be scanned. |
| max_file_size | integer | Maximum file size, in bytes, allowed for scanning. |
| scan_without_extension | boolean | Specifies whether or not files without any extension can be scanned. |

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 Vscan On-Demand policy configuration for an SVM

PATCH `/protocols/vscan/{svm.uuid}/on-demand-policies/{name}`

Updates the Vscan On-Demand policy configuration of an SVM. Use schedule name or schedule UUID to schedule an On-Demand scan.

### Related ONTAP commands

- `vserver vscan on-demand-task modify`
- `vserver vscan on-demand-task schedule`
- `vserver vscan on-demand-task unschedule`

### Learn more

- DOC /protocols/vscan/{svm.uuid}/on-demand-policies

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| name | string | path | True | |

### Request Body

| Name | Type | Description |
|---|---|---|
| log_path | string | The path from the Vserver root where the task report is created. |
| scan_paths | array[string] | List of paths that need to be scanned. |
| schedule | schedule | Schedule of the task. |
| scope | scope | |

### Example request

```
{
  "log_path": "/vol0/report_dir",
  "scan_paths": [
    "/vol1/",
    "/vol2/cifs/"
  ],
  "schedule": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "weekly",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  },
  "scope": {
    "exclude_extensions": [
      "mp3",
      "mp4"
    ],
    "exclude_paths": [
      "/vol1/cold-files/",
      "/vol1/cifs/names"
    ],
    "include_extensions": [
      "vmdk",
      "mp*"
    ],
    "max_file_size": 10737418240
  }
}
```

### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 10027101 | The file size must be in the range 1KB to 1TB |
| 10027107 | The include extensions list cannot be empty. Specify at least one extension for inclusion. |
| 10027164 | An On-Demand policy cannot be scheduled, as the Vscan is disabled. Enable the Vscan and retry the operation. |
| 10027167 | The specified schedule does not exist. Create the schedule or create a policy without specifying the schedule. |
| 10027168 | The specified scan path does not exist. The scan path must be specified from the root of the SVM, and must begin with UNIX path delimiters (use “/” not “\”) |
| 10027169 | The specified scan path is not supported for scanning. |
| 10027174 | The specified exclude path is invalid. The path must be specified from the root of the SVM, and must begin with UNIX path delimiters (use "/" not "\") |
| 10027175 | An On-Demand policy cannot be scheduled as the SVM is not in an operational state. |
| 10027176 | The log-path specified does not exist. The log path must be specified from the root of the SVM, and must begin with UNIX path delimiters (use “/” not “\”) |
| 10027177 | The log path specified is not supported. |
| 10027253 | The number of paths specified exceeds the configured maximum number of paths. You cannot specify more than the maximum number of configured paths. |
| 10027254 | The number of extensions specified exceeds the configured maximum number of extensions. You cannot specify more than the maximum number of configured extensions. |
| 10027255 | Another policy is already scheduled. Only one policy per SVM is allowed to be scheduled at any one time. Update a policy without specifying a schedule. |

| 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 | |

schedule

Schedule of the task.

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

scope

| Name | Type | Description |
|---|---|---|
| exclude_extensions | array[string] | List of file extensions for which scanning is not performed. |
| exclude_paths | array[string] | List of file paths for which scanning must not be performed. |
| include_extensions | array[string] | List of file extensions to be scanned. |
| max_file_size | integer | Maximum file size, in bytes, allowed for scanning. |
| scan_without_extension | boolean | Specifies whether or not files without any extension can be scanned. |

vscan_on_demand

Use On-Demand scanning to check files for viruses on a schedule. An On-Demand policy defines the scope of an On-Demand scan.

| Name | Type | Description |
|---|---|---|
| log_path | string | The path from the Vserver root where the task report is created. |
| scan_paths | array[string] | List of paths that need to be scanned. |
| schedule | schedule | Schedule of the task. |
| scope | scope | |

error_arguments

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

error

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

# Manage Vscan scanner-pool configuration

## Protocols Vscan svm.uuid scanner-pools endpoint overview

### Overview

A scanner-pool defines the Vscan servers and privileged users that can connect to SVMs and a scanner policy or role determines whether a scanner-pool is active. You can configure a scanner-pool to be used on the local cluster or any other cluster in an MCC/DR setup.

### Examples

**Retrieving all fields for all scanner-pools of an SVM**

```
# The API:
/api/protocols/vscan/{svm.uuid}/scanner-pools

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/vscan/<svm-uuid>/scanner-
pools?fields=*&return_records=true&return_timeout=15" -H "accept:
application/json"

# The response:
{
"records": [
  {
    "svm": {
      "uuid": "0e2f7c91-f227-11e8-9601-0050568ecc06"
    },
    "name": "scanner-1",
    "servers": [
      "1.1.1.1",
      "10.72.204.27"
    ],
    "privileged_users": [
      "cifs\\u1",
      "cifs\\u2"
    ],
    "role": "primary"
  },
  {
    "svm": {
      "uuid": "0e2f7c91-f227-11e8-9601-0050568ecc06"
    },
    "name": "scanner-2",
    "servers": [
      "1.1.1.1",
      "10.72.204.27"
    ],
    "privileged_users": [
      "cifs\\u1",
      "cifs\\u2"
    ],
    "role": "secondary"
  }
],
"num_records": 2
}
```

**Retrieving all scanner-pools with *role* set as *secondary***

```
# The API:
/api/protocols/vscan/{svm.uuid}/scanner-pools

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/vscan/<svm-uuid>/scanner-
pools?role=secondary&fields=*&return_records=true&return_timeout=15" -H
"accept: application/json"

# The response:
{
"records": [
  {
    "svm": {
      "uuid": "0e2f7c91-f227-11e8-9601-0050568ecc06",
      "name": "vs1"
    },
    "name": "scanner-2",
    "servers": [
      "1.1.1.1",
      "10.72.204.27"
    ],
    "privileged_users": [
      "cifs\\u1",
      "cifs\\u2"
    ],
    "role": "secondary",
    "cluster": {
      "uuid": "0933f9b5-f226-11e8-9601-0050568ecc06",
      "name": "Cluster3"
    }
  }
],
"num_records": 1
}
```

**Retrieving the specified scanner-pool associated with an SVM**

```
# The API:
/api/protocols/vscan/{svm.uuid}/scanner-pools/{name}

# The call:
curl -X GET "https://<mgmt-ip>/api/protocols/vscan/0e2f7c91-f227-11e8-
9601-0050568ecc06/scanner-pools/scanner-1?fields=*" -H "accept:
application/json"

# The response:
{
"svm": {
  "uuid": "0e2f7c91-f227-11e8-9601-0050568ecc06",
  "name": "vs1"
},
"name": "scanner-1",
"servers": [
  "1.1.1.1",
  "10.72.204.27"
],
"privileged_users": [
  "cifs\\u1",
  "cifs\\u2"
],
"role": "primary",
"cluster": {
  "uuid": "0933f9b5-f226-11e8-9601-0050568ecc06",
  "name": "Cluster3"
}
}
```

**Creating a scanner-pool for an SVM with all fields specified**

```
# The API:
/api/protocols/vscan/{svm.uuid}/scanner-pools/

# The call:
curl -X POST "https://<mgmt-ip>/api/protocols/vscan/b103be27-17b8-11e9-
b451-0050568ecd85/scanner-pools?return_records=true" -H "accept:
application/json" -H "Content-Type: application/json" -d "{ \"cluster\": {
\"name\": \"Cluster1\", \"uuid\": \"ab746d77-17b7-11e9-b450-0050568ecd85\"
}, \"name\": \"test-scanner\", \"privileged_users\": [ \"cifs\\\\u1\",
\"cifs\\\\u2\" ], \"role\": \"primary\", \"servers\": [ \"1.1.1.1\",
\"10.72.204.27\" ]}"

# The response:
{
"num_records": 1,
"records": [
  {
    "name": "test-scanner",
    "servers": [
      "1.1.1.1",
      "10.72.204.27"
    ],
    "privileged_users": [
      "cifs\\u1",
      "cifs\\u2"
    ],
    "role": "primary",
    "cluster": {
      "uuid": "ab746d77-17b7-11e9-b450-0050568ecd85",
      "name": "Cluster1"
    }
  }
]
}
```

**Creating a scanner-pool for an SVM with an unspecified role and cluster**

```
# The API:
/api/protocols/vscan/{svm.uuid}/scanner-pools/

# The call:
curl -X POST "https://<mgmt-ip>/api/protocols/vscan/b103be27-17b8-11e9-
b451-0050568ecd85/scanner-pools" -H "accept: application/json" -H
"Content-Type: application/json" -d "{ \"name\": \"test-scanner-1\",
\"privileged_users\": [ \"cifs\\\\u1\", \"cifs\\\\u2\" ], \"servers\": [
\"1.1.1.1\", \"10.72.204.27\" ]}"

# The response:
{
"num_records": 1,
"records": [
  {
    "name": "test-scanner-1",
    "servers": [
      "1.1.1.1",
      "10.72.204.27"
    ],
    "privileged_users": [
      "cifs\\u1",
      "cifs\\u2"
    ]
  }
]
}
```

**Updating a scanner-pool for an SVM with all of the fields specified**

```
# The API:
/api/protocols/vscan/{svm.uuid}/scanner-pools/{name}

# The call:
curl -X PATCH "https://<mgmt-ip>/api/protocols/vscan/0e2f7c91-f227-11e8-
9601-0050568ecc06/scanner-pools/test-scanner-1" -H "accept:
application/json" -H "Content-Type: application/json" -d "{ \"cluster\": {
\"name\": \"Cluster3\", \"uuid\": \"0933f9b5-f226-11e8-9601-0050568ecc06\"
}, \"privileged_users\": [ \"cifs\\\\u1\", \"cifs\\\\u2\" ], \"role\":
\"secondary\", \"servers\": [ \"1.1.1.1\", \"10.72.204.27\" ]}"
```

**Updating the "role" of a scanner-pool for an SVM**

```
# The API:
/api/protocols/vscan/{svm.uuid}/scanner-pools/{name}

# The call:
curl -X PATCH "https://<mgmt-ip>/api/protocols/vscan/0e2f7c91-f227-11e8-
9601-0050568ecc06/scanner-pools/test-scanner-1" -H "accept:
application/json" -H "Content-Type: application/json" -d "{ \"cluster\": {
\"name\": \"Cluster3\", \"uuid\": \"0933f9b5-f226-11e8-9601-0050568ecc06\"
}, \"role\": \"primary\"}"
```

#### Deleting a scanner-pool for a specified SVM

```
# The API:
/api/protocols/vscan/{svm.uuid}/scanner-pools/{name}

# The call:
curl -X DELETE "https://<mgmt-ip>/api/protocols/vscan/0e2f7c91-f227-11e8-
9601-0050568ecc06/scanner-pools/test-scanner-1" -H "accept:
application/json"
```

## Retrieve a Vscan scanner-pool configuration for an SVM

GET `/protocols/vscan/{svm.uuid}/scanner-pools`

Retrieves the Vscan scanner-pool configuration of an SVM.

### Related ONTAP commands

- `vserver vscan scanner-pool show`
- `vserver vscan scanner-pool privileged-users show`
- `vserver vscan scanner-pool servers show`
- `vserver vscan scanner-pool show-active`

### Learn more

- DOC /protocols/vscan/{svm.uuid}/scanner-pools

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |

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

**Response**

```
Status: 200, Ok
```

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

### Example response


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "cluster": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "cluster1",
        "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
      },
      "name": "scanner-1",
      "privileged_users": [
        "cifs\\u1",
        "cifs\\u2"
      ],
      "role": "string",
      "servers": [
        "1.1.1.1",
        "10.72.204.27",
        "vmwin204-27.fsct.nb"
      ]
    }
  ]
}
```


### 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 |
|---|---|---|
| next | href | |
| self | href | |

_links

| Name | Type | Description |
|---|---|---|
| self | href | |

cluster_reference

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | |
| uuid | string | |

vscan_scanner_pool

Scanner pool is a set of attributes which are used to validate and manage connections between clustered ONTAP and external virus-scanning server, or "Vscan server".

| Name | Type | Description |
|---|---|---|
| cluster | cluster_reference | |
| name | string | Specifies the name of the scanner pool. Scanner pool name can be up to 256 characters long and is a string that can only contain any combination of ASCII-range alphanumeric characters a-z, A-Z, 0-9), "_", "-" and ".". |

| Name | Type | Description |
| --- | --- | --- |
| privileged_users | array[string] | Specifies a list of privileged users. A valid form of privileged user-name is "domain-name\user-name". Privileged user-names are stored and treated as case-insensitive strings. Virus scanners must use one of the registered privileged users for connecting to clustered Data ONTAP for exchanging virus-scanning protocol messages and to access file for scanning, remedying and quarantining operations.<br>• example: ["cifs\u1", "cifs\u2"] |
| role | string | Specifies the role of the scanner pool. The possible values are:<br>• primary - Always active.<br>• secondary - Active only when none of the primary external virus-scanning servers are connected.<br>• idle - Always inactive. |
| servers | array[string] | Specifies a list of IP addresses or FQDN for each Vscan server host names which are allowed to connect to clustered ONTAP.<br>• example: ["1.1.1.1", "10.72.204.27", "vmwin204-27.fsct.nb"] |

error_arguments

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

error

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

## Create a Vscan scanner-pool configuration for an SVM

POST `/protocols/vscan/{svm.uuid}/scanner-pools`

Creates a Vscan scanner-pool configuration for a specified SVM. You can create a scanner-pool with all fields specified or only mandatory fields specified.

Important notes:

- A scanner-pool must have servers and privileged users specified.
- If the role or cluster is not specified, the scanner-pool is created on the local cluster with the role set as primary. *`Only one of the fields cluster-uuid or cluster-name is required.

### Required properties

- `svm.uuid` or `svm.name` - Existing SVM in which to create the Vscan configuration.
- `name` - Scanner-pool name.
- `privileged_users` - List of privileged users.
- `servers` - List of server IP addresses or FQDNs.

### Recommended optional properties

- `role` - Setting a role for a scanner-pool is recommended.
- `cluster` - Passing the cluster name or UUID (or both) in a multi-cluster environment is recommended.

### Default property values

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

- `role` - *primary*
- `cluster.name` - Local cluster name.
- `cluster.uuid` - Local cluster UUID.

### Related ONTAP commands

- `vserver vscan scanner-pool create`
- `vserver vscan scanner-pool apply-policy`
- `vserver vscan scanner-pool privileged-users add`
- `vserver vscan scanner-pool servers add`

### Learn more

- DOC /protocols/vscan/{svm.uuid}/scanner-pools

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| return_records | boolean | query | False | The default is false. If set to true, the records are returned. |
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |

### Request Body

| Name | Type | Description |
|---|---|---|
| cluster | cluster_reference | |
| name | string | Specifies the name of the scanner pool. Scanner pool name can be up to 256 characters long and is a string that can only contain any combination of ASCII-range alphanumeric characters a-z, A-Z, 0-9), "_", "-" and ".". |

| Name | Type | Description |
| --- | --- | --- |
| privileged_users | array[string] | Specifies a list of privileged users. A valid form of privileged user-name is "domain-name\user-name". Privileged user-names are stored and treated as case-insensitive strings. Virus scanners must use one of the registered privileged users for connecting to clustered Data ONTAP for exchanging virus-scanning protocol messages and to access file for scanning, remedying and quarantining operations.<br>• example: ["cifs\u1", "cifs\u2"] |
| role | string | Specifies the role of the scanner pool. The possible values are:<br>• primary - Always active.<br>• secondary - Active only when none of the primary external virus-scanning servers are connected.<br>• idle - Always inactive. |
| servers | array[string] | Specifies a list of IP addresses or FQDN for each Vscan server host names which are allowed to connect to clustered ONTAP.<br>• example: ["1.1.1.1", "10.72.204.27", "vmwin204-27.fsct.nb"] |

### Example request

```
{
  "cluster": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "cluster1",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  },
  "name": "scanner-1",
  "privileged_users": [
    "cifs\\u1",
    "cifs\\u2"
  ],
  "role": "string",
  "servers": [
    "1.1.1.1",
    "10.72.204.27",
    "vmwin204-27.fsct.nb"
  ]
}
```

### Response

```
Status: 201, Created
```

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

### Example response


```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "cluster": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "cluster1",
        "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
      },
      "name": "scanner-1",
      "privileged_users": [
        "cifs\\u1",
        "cifs\\u2"
      ],
      "role": "string",
      "servers": [
        "1.1.1.1",
        "10.72.204.27",
        "vmwin204-27.fsct.nb"
      ]
    }
  ]
}
```


### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 10027086 | The specified list of servers contain one or more entries that cannot be resolved |
| 10027258 | The specified cluster_name does not exist |
| 10027256 | The specified cluster_uuid does not exist |
| 10027257 | The specified cluster_name and cluster_uuid are valid but belong to different clusters |
| 10027248 | Scanner-pool created successfully but failed to activate |
| 10027107 | The list of privileged users or list of servers specified is empty |
| 10027108 | The list of privileged users specified contains an invalid entry |
| 10027063 | Attempting to modify a scanner-pool on an administrative SVM with a data SVM |

| 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 | |

cluster_reference

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | |
| uuid | string | |

vscan_scanner_pool

Scanner pool is a set of attributes which are used to validate and manage connections between clustered ONTAP and external virus-scanning server, or "Vscan server".

| Name | Type | Description |
|---|---|---|
| cluster | cluster_reference | |
| name | string | Specifies the name of the scanner pool. Scanner pool name can be up to 256 characters long and is a string that can only contain any combination of ASCII-range alphanumeric characters a-z, A-Z, 0-9), "_", "-" and ".". |

| Name | Type | Description |
|---|---|---|
| privileged_users | array[string] | Specifies a list of privileged users. A valid form of privileged user-name is "domain-name\user-name". Privileged user-names are stored and treated as case-insensitive strings. Virus scanners must use one of the registered privileged users for connecting to clustered Data ONTAP for exchanging virus-scanning protocol messages and to access file for scanning, remedying and quarantining operations.<br>• example: ["cifs\u1", "cifs\u2"] |
| role | string | Specifies the role of the scanner pool. The possible values are:<br>• primary - Always active.<br>• secondary - Active only when none of the primary external virus-scanning servers are connected.<br>• idle - Always inactive. |
| servers | array[string] | Specifies a list of IP addresses or FQDN for each Vscan server host names which are allowed to connect to clustered ONTAP.<br>• example: ["1.1.1.1", "10.72.204.27", "vmwin204-27.fsct.nb"] |

_links

| Name | Type | Description |
|---|---|---|
| next | href | |
| self | href | |

error_arguments

| Name | Type | Description |
|---|---|---|
| code | string | Argument code |

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

error

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

## Delete a Vscan scanner-pool configuration

DELETE `/protocols/vscan/{svm.uuid}/scanner-pools/{name}`

Deletes a Vscan scanner-pool configuration.

Important notes:

- The Vscan scanner-pool DELETE endpoint deletes all of the Vscan scanner-pools for a specified SVM.
- If a Vscan is enabled, it requires at least one scanner-pool to be in the active state. Therefore, disable Vscan on the specified SVM so all the scanner-pools configured on that SVM can be deleted.

### Related ONTAP commands

- `vserver vscan scanner-pool delete`

### Learn more

- DOC /protocols/vscan/{svm.uuid}/scanner-pools

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| name | string | path | True | |

### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 10027070 | Attempting to delete a scanner-pool but it is the only active scanner-pool for a Vscan enabled on the SVM |
| 10027064 | Attempting to delete a scanner-pool with a data SVM which was created with an administrative SVM |

| 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 the Vscan scanner-pool configuration for an SVM

GET `/protocols/vscan/{svm.uuid}/scanner-pools/{name}`

Retrieves the configuration of a specified scanner-pool of an SVM.

### Related ONTAP commands

- `vserver vscan scanner-pool show`
- `vserver vscan scanner-pool privileged-users show`
- `vserver vscan scanner-pool servers show`
- `vserver vscan scanner-pool show-active`

### Learn more

- DOC /protocols/vscan/{svm.uuid}/scanner-pools

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| name | string | path | True | |
| fields | array[string] | query | False | Specify the fields to return. |

**Response**

```
Status: 200, Ok
```

| Name | Type | Description |
|---|---|---|
| cluster | cluster_reference | |
| name | string | Specifies the name of the scanner pool. Scanner pool name can be up to 256 characters long and is a string that can only contain any combination of ASCII-range alphanumeric characters a-z, A-Z, 0-9), "_", "-" and ".". |
| privileged_users | array[string] | Specifies a list of privileged users. A valid form of privileged user-name is "domain-name\user-name". Privileged user-names are stored and treated as case-insensitive strings. Virus scanners must use one of the registered privileged users for connecting to clustered Data ONTAP for exchanging virus-scanning protocol messages and to access file for scanning, remedying and quarantining operations.<br>• example: ["cifs\u1", "cifs\u2"] |

| Name | Type | Description |
| --- | --- | --- |
| role | string | Specifies the role of the scanner pool. The possible values are:<br>• primary - Always active.<br>• secondary - Active only when none of the primary external virus-scanning servers are connected.<br>• idle - Always inactive. |
| servers | array[string] | Specifies a list of IP addresses or FQDN for each Vscan server host names which are allowed to connect to clustered ONTAP.<br>• example: ["1.1.1.1", "10.72.204.27", "vmwin204-27.fsct.nb"] |

**Example response**


```
{
  "cluster": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "cluster1",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  },
  "name": "scanner-1",
  "privileged_users": [
    "cifs\\u1",
    "cifs\\u2"
  ],
  "role": "string",
  "servers": [
    "1.1.1.1",
    "10.72.204.27",
    "vmwin204-27.fsct.nb"
  ]
}
```

### 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 | |

cluster_reference

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | |
| uuid | string | |

error_arguments

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

error

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

## Update the Vscan scanner-pool configuration for an SVM

PATCH `/protocols/vscan/{svm.uuid}/scanner-pools/{name}`

Updates the Vscan scanner-pool configuration of an SVM.

Important notes:

- Along with servers and privileged-users, the role of a scanner-pool can also be updated with the cluster on which a scanner-pool is allowed.
- If role is specified and cluster isn't, then role is applied to the local cluster.

### Related ONTAP commands

- `vserver vscan scanner-pool modify`
- `vserver vscan scanner-pool apply-policy`
- `vserver vscan scanner-pool privileged-users add`
- `vserver vscan scanner-pool privileged-users remove`
- `vserver vscan scanner-pool servers remove`
- `vserver vscan scanner-pool servers add`

### Learn more

- DOC /protocols/vscan/{svm.uuid}/scanner-pools

### Parameters

| Name | Type | In | Required | Description |
|---|---|---|---|---|
| svm.uuid | string | path | True | UUID of the SVM to which this object belongs. |
| name | string | path | True | |

### Request Body

| Name | Type | Description |
|---|---|---|
| cluster | cluster_reference | |

| Name | Type | Description |
| --- | --- | --- |
| privileged_users | array[string] | Specifies a list of privileged users. A valid form of privileged user-name is "domain-name\user-name". Privileged user-names are stored and treated as case-insensitive strings. Virus scanners must use one of the registered privileged users for connecting to clustered Data ONTAP for exchanging virus-scanning protocol messages and to access file for scanning, remedying and quarantining operations.<br>• example: ["cifs\u1", "cifs\u2"] |
| role | string | Specifies the role of the scanner pool. The possible values are:<br>• primary - Always active.<br>• secondary - Active only when none of the primary external virus-scanning servers are connected.<br>• idle - Always inactive. |
| servers | array[string] | Specifies a list of IP addresses or FQDN for each Vscan server host names which are allowed to connect to clustered ONTAP.<br>• example: ["1.1.1.1", "10.72.204.27", "vmwin204-27.fsct.nb"] |

### Example request

```
{
  "cluster": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "cluster1",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  },
  "privileged_users": [
    "cifs\\u1",
    "cifs\\u2"
  ],
  "role": "string",
  "servers": [
    "1.1.1.1",
    "10.72.204.27",
    "vmwin204-27.fsct.nb"
  ]
}
```

### Response

```
Status: 200, Ok
```

### Error

```
Status: Default
```

ONTAP Error Response Codes

| Error Code | Description |
|---|---|
| 10027258 | The specified cluster_name does not exist |
| 10027256 | The specified cluster_uuid does not exist |
| 10027257 | The specified cluster_name and cluster_uuid are valid but belong to different clusters |
| 10027248 | Scanner-pool updated successfully but failed to apply the specified role |

| Error Code | Description |
| --- | --- |
| 10027107 | The list of privileged users or list of servers specified is empty |
| 10027108 | The list of privileged users specified contains an invalid entry |
| 10027063 | Attempting to modify a scanner-pool on an administrative SVM with a data SVM |

| 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 | |

cluster_reference

| Name | Type | Description |
|---|---|---|
| _links | _links | |
| name | string | |
| uuid | string | |

vscan_scanner_pool

Scanner pool is a set of attributes which are used to validate and manage connections between clustered ONTAP and external virus-scanning server, or "Vscan server".

| Name | Type | Description |
|---|---|---|
| cluster | cluster_reference | |
| privileged_users | array[string] | Specifies a list of privileged users. A valid form of privileged user-name is "domain-name\user-name". Privileged user-names are stored and treated as case-insensitive strings. Virus scanners must use one of the registered privileged users for connecting to clustered Data ONTAP for exchanging virus-scanning protocol messages and to access file for scanning, remedying and quarantining operations.<br>• example: ["cifs\u1", "cifs\u2"] |

| Name | Type | Description |
| --- | --- | --- |
| role | string | Specifies the role of the scanner pool. The possible values are:<br>• primary - Always active.<br>• secondary - Active only when none of the primary external virus-scanning servers are connected.<br>• idle - Always inactive. |
| servers | array[string] | Specifies a list of IP addresses or FQDN for each Vscan server host names which are allowed to connect to clustered ONTAP.<br>• example: ["1.1.1.1", "10.72.204.27", "vmwin204-27.fsct.nb"] |

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. |

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