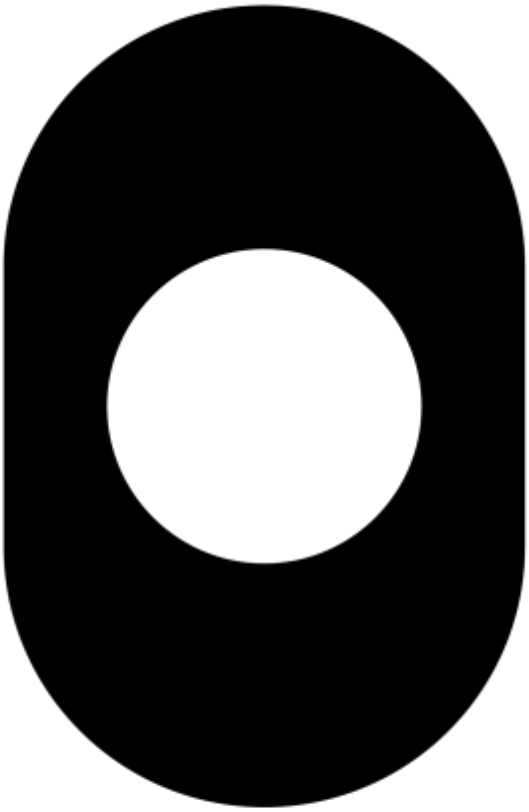

ObjectMatrix

MatrixStore Management REST API
v1.0.5

MatrixStore Management REST API

Introduction

This document is a guide to the MatrixStore Management REST API. It covers the HTTPS request URLs, request parameters and response properties, that allow you to manage your Matrixstore including management of vaults and users.

The MatrixStore Management REST API is available from MatrixStore v4 and above.

Changelog

This section describes the changes of this document.

Date	Version	Description
2019-01-07	v1.0.0	Initial version
2019-01-16	v1.0.1	Added IMF to PiP
2019-02-08	v1.0.3	Added support for new task status WAITING_FOR_SCHEDULE
2019-03-12	v1.0.4	Added headNode property in Node resource
2019-06-10	v1.0.5	Improved error messages

Overview

General notes

URL Paths

All API paths are prefixed with the base `/mapi/v1/`. This is omitted from the documented definitions below for sake of clarity and simplicity, the same reason that the schema, host, and port is omitted.

For example, where you see this documented:

```
GET /cluster
```

You need to call `/mapi/v1/cluster` with a `GET` HTTP verb.

Blank fields

Blank fields are included as `null` instead of being omitted.

Date format

All timestamps are returned in ISO 8601 format:

```
YYYY-MM-DDTHH:MM:SSZ
```

Storage capacity unit

All capacity properties are returned in **bytes**.

Parameters

API methods can include parameters as a segment in the path (usually unique identifiers). For `GET` requests, any extra/optional parameter can be specified as an HTTP query string parameter:

```
/tasks/e5edb1a0-b7f6-48a3-155a-ae0e72620f14?taskType=2
```

In this example, the value *e5edb1a0-b7f6-48a3-155a-ae0e72620f1* is the `:nodeId` parameter in the path, while `taskType` is passed in the query string.

For `POST`, `PUT`, `PATCH` and `DELETE` requests, parameters not usually included in the URL and are encoded as JSON with a Content-Type of `application/json`.

Pagination

Some requests that return lists of potentially thousands of items are paginated.

Link header

The pagination info is included in the Link header:

```
Link: </mapi/v1/vaults/123/audits?range=last7Days&continue=251>; rel="next",
      </mapi/v1/vaults/123/audits?range=last7Days>; rel="first"
```

The possible `rel` values are as follows (not all may be supported):

Name	Description
next	Shows the URL of the immediate next page of results.
last	Shows the URL of the last page of results.
first	Shows the URL of the first page of results.
prev	Shows the URL of the immediate previous page of results.

Partial response

By default, the server sends back the full representation of a resource. In order to improve the performance and reduce bandwidth, you can use the `fields` parameter to specify the fields you want returned. You can use this parameter for any request that returns json response data.

Example

```
GET /spaces/:spaceId/vaults?
fields=name,usedCapacity,freeCapacity,numObjects,config[provisionedCapacity,contentSearchEnabled,replication[enabled]]
```

```
[
  {
    "id": "e5edb1a0-b7f6-48a3-155a-ae0e72620f14",
    "name": "News",
    "usedCapacity": 23000000,
    "freeCapacity": 4977000000,
    "numObjects": 150,
    "config": {
      "provisionedCapacity": 5000000000,
      "contentSearchEnabled": true,
      "replication": {
        "enabled": false
      }
    }
  },
  ...
]
```

Errors

Errors are returned using standard HTTP error code syntax. Any additional info is included in the body of the error object, JSON-formatted. In general, API call can return the error codes listed below.

Client errors

Code	Description
400 Bad Request	Invalid input parameter. Invalid JSON syntax or wrong type of a JSON value.
401 Unauthorized	Authentication is required.
403 Forbidden	Operation not permitted for the current user.
404 Not found	Resource not found.
422 Unprocessable Entity	The request was well-formed but invalid fields where sent.

Server errors

Code	Description
500 Internal Server Error	Generic server error message.
503 Service Unavailable	The server is currently unavailable.
507 Insufficient Storage	The server is unable to store the resource.

Authentication

Authentication is done using **form-login**. Methods in the API will return `401 Unauthorized` if the user is not authenticated.

Login

```
POST /login
```

Request body for login via username

Name	Type	Description
`username`	`String`	Username.
`password`	`String`	User password.

Request body for login via access key

Name	Type	Description
`accesskeyid`	`String`	Access key Id.
`accesskeysecret`	`String`	Access key's secret.

Response

Success

```
Status: 302 OK
Location: http://mapi.om.com/mapi/v1/users/current
Set-Cookie: JSESSIONID=2JF9K23P4FJP47AFAEDD441E92
```

Failure

```
Status: 401 Unauthorized
```

Example

```
curl -k -c .cookie -i -d username=jsmith -d password=s3CuR3P455wORd
https://10.0.20.101:8443/mapi/v1/login
```

Logout

```
POST /logout
```

Response

```
Status: 204 No Content
```

Example

```
curl -k -b .cookie -i -X POST https://10.0.20.101:8443/mapi/v1/logout
```

MAPI Instance

Get basic service information

Retrieve basic information about the service instance, such as version number.

Properties

Fields	Type	Description
`version`	`string`	Version number of this MAPI instance. *Read-only*.
`host.hostname`	`string`	Hostname of this instance's machine. *Read-only*
`host.timezone`	`string`	Timezone Id of this instance's machine. *Read-Only*.
`host.currentTime`	`string`	The current date and time of the instance's machine in ISO 8601 format. *Read-only*.

```
GET /instance
```

This endpoint can be reached without authentication.

Response

```
Status: 200 OK
```

```
{
    "version": "1.0.0.1",
    "host": {
        "hostname": "node2",
        "timezone": "UTC",
        "currentTime": "2018-04-01T08:25:13Z"
    }
}
```

Download instance logs

Retrieving the service instance's logs may be necessary to debugging issues. A zip file containing all logs can be retrieved from here.

```
GET /instance/logs
```

Response

```
Status: 200 OK
Content-Type: application/zip
```

Body contains the zip file.

Get current log

View only the most recent log file for this instance as plain text.

```
GET /instance/logs/current
```

Response

```
Status: 200 OK
Content-Type: text/plain
```

Body is the plain text log file.

Cluster

Properties

Fields	Type	Description
`id`	`string`	Cluster id. *Read-only*.
`name`	`string`	The descriptive name of the cluster. *Read-write*.
`diskCapacity`	`integer`	Total capacity. *Read-only*.
`usedCapacity`	`integer`	Used capacity. *Read-only*.
`licensedCapacity`	`integer`	Licensed capacity. *Read-only*
`numVaults`	`integer`	Number vaults in the cluster. *Read-only*.
`numObjects`	`integer`	Number objects in the cluster. *Read-only*.
`status`	`string`	Cluster health status. Valid values are: `green`, `orange` and `red`. *Read-only*.
`statusMsg`	`string`	Status message. *Read-only*.
`config`	`ClusterConfig`	Cluster configuration. *Read-write*.
`licenceKey`	`string`	Licence registration key. *Read-write*.

Cluster `ClusterConfig` type

Name	Type	Description
`snmpEnabled`	`boolean`	SNMP enabled or disabled.
`snmpMonitorAddress`	`string`	The monitor address(es) for SNMP if enabled.
`snmpTimerSecs`	`integer`	The frequency at which SNMP traps should be sent.
`loadBalancingPolicy`	`string`	Load balancing policy. Valid values are `Optimised for performance` and `Optimised for data distribution`.
`reservedDiskPct`	`integer`	Reserved space on each disk (%) for log files, updates, etc.
`regenerationTimeout`	`string`	Period before **regeneration** occurs when a node is offline. Valid values are `3 days`, `4 days`, `7 days`, `14 days`, `1 month` and `off`.
`recoverFromRemote`	`boolean`	If enabled, replicated data can be recovered from a remote cluster when a node with **single instance vaults** crashes.

Get Cluster

```
GET /cluster
```

Response

```
Status: 200 OK
```

```
{
  "id": "e5edb1a0-b7f6-48a3-155a-ae0e72620f14",
  "name": "NGD Cluster",
  "diskCapacity": 80000000000,
  "usedCapacity": 30000000012,
  "licensedCapacity": 90000000000,
  "numVaults": 33,
  "numObjects": 2300,
  "status": "green", // "orange" or "red"
  "statusMsg": null,
  "config": {
    "snmpEnabled": true,
    "snmpMonitorAddress": "10.0.20.23",
    "snmpTimerSecs": 60,
    "loadBalancingPolicy": "Optimised for performance",
    "reservedDiskPct": 20,
    "regenerationTimeout": "3 days",
    "recoverFromRemote": true
  },
  "licenceKey": "4758B9A1-F349372F-CF5B7D3F-CF7FB7FE-0000800C-00000000"
}
```

Update Cluster

```
PATCH /cluster
```

Request body

Name	Type	Description
`config`	`ClusterConfig`	Cluster configuration.
`licenceKey`	`string`	Licence registration key.

Example

Update config

```
{
  "config": {
    "reservedDiskPct": 10,
    "regenerationTimeout": "14 days"
  }
}
```

Response

```
Status: 200 OK
```

```
{
  "id": "e5edb1a0-b7f6-48a3-155a-ae0e72620f14",
  "name": "NGD Cluster",
  "diskCapacity": 80000000000,
  "usedCapacity": 30000000012,
  "licensedCapacity": 90000000000,
  "numVaults": 33,
  "numObjects": 2300,
  "status": "green", // "orange" or "red"
  "statusMsg": null,
  "config": {
    "snmpEnabled": true,
    "snmpMonitorAddress": "10.0.20.23",
    "snmpTimerSecs": 60,
    "loadBalancingPolicy": "Optimised for performance",
    "reservedDiskPct": 10,
    "regenerationTimeout": "14 days",
    "recoverFromRemote": true
  },
  "licenceKey": "4758B9A1-F349372F-CF5B7D3F-CF7FB7FE-0000800C-00000000"
}
```

Update licence

```
{
  "licenceKey": "A758B9A1-F349372F-CF5B7D3F-CF7FB7FE-0000800C-10010001"
}
```

Response

```
Status: 200 OK
```

```
{
  "id": "e5edb1a0-b7f6-48a3-155a-ae0e72620f14",
  "name": "NGD Cluster",
  "diskCapacity": 80000000000,
  "usedCapacity": 30000000012,
  "licensedCapacity": 90000000000,
  "numVaults": 33,
```

```
  "numObjects": 2300,
  "status": "green", // "orange" or "red"
  "statusMsg": null,
  "config": {
    "snmpEnabled": true,
    "snmpMonitorAddress": "10.0.20.23",
    "snmpTimerSecs": 60,
    "loadBalancingPolicy": "Optimised for performance",
    "reservedDiskPct": 10,
    "regenerationTimeout": "14 days",
    "recoverFromRemote": true
  },
  "licenceKey": "A758B9A1-F349372F-CF5B7D3F-CF7FB7FE-0000800C-10010001"
}
```

Get Cluster logs

Retrieves latest logs from all the nodes in the cluster.

```
GET /cluster/logs
```

Response

application/zip content

Spaces

Properties

Name	Type	Description
`id`	`string`	The unique identifier of the space. *Read-only*.
`name`	`string`	Space name. *Read-write*.

List spaces in cluster

```
GET /cluster/spaces
```

Response

```
Status: 200 OK
```

```
[
{
  "id" : "897c005c-0032-11e8-8915-e7d7847fba07",
  "name" : "Main Cluster"
}, ...
]
```

Vaults

Properties

Name	Type	Description
`id`	`string`	The unique identifier of the vault. *Read-only*.
`name`	`string`	Vault name. *Read-write*.
`usedCapacity`	`integer`	Used capacity in the vault. *Read-only*.
`freeCapacity`	`integer`	Free capacity in the vault. *Read-only*.
`totalCapacity`	`integer`	Total capacity of the vault. *Read-only*
`config`	`VaultConfig`	Vault configuration. *Read-write*.
`numObjects`	`integer`	Number objects in the vault.

Vault `VaultConfig` type

Name	Type	Description
`provisionedCapacity`	`integer`	Provisioned capacity for the vault. Value must be larger than 1000000 (1MB). Use `null` or `-1` to allow unlimited storage.
`capabilities`	`object`	Vault capabilities.
`capabilities.write`	`boolean`	Write permission.
`capabilities.read`	`boolean`	Read permission.
`capabilities.search`	`boolean`	Search permission.
`capabilities.delete`	`boolean`	Delete permission.
`capabilities.update`	`boolean`	Update metadata permission.
`audits`	`object`	Vault audit configuration.
`audits.read`	`boolean`	Auditing of read operations.
`audits.write`	`boolean`	Auditing of write operations.
`audits.delete`	`boolean`	Auditing of delete operations.
`protectionScheme`	`string`	Number of copies of each object in the cluster: `"Dual"` for two copies or `"Single"` for one copy.
`dataUpdatable`	`boolean`	`True` if data in the vault can be updated after creation. `False` otherwise.
`integrityLevel`	`string`	Algorithms used for data transfer and checking integrity of data in the vault. Valid values are: `"Fast"`, `"Medium"` and `"Strong"`.
`contentSearchEnabled`	`boolean`	`True` if content search is enabled in the Vault. `False` otherwise.
`compliance`	`object`	Vault compliance configuration.
`compliance.type`	`string`	`"Extendable"` if threshold can only be increased but not reduced (or disabled) . `"Extendable and Reducible"` if it can be increased or reduced. `"None"` if data in vault can be deleted at any time.
`compliance.thresholdMins`	`integer`	Time period (minutes) that data will be protected against deletion.
`trashCan`	`object`	Vault trashcan configuration
`trashCan.enabled`	`boolean`	`True` if objects should be sent to trashcan when deleted. `False` otherwise.

Name	Type	Description
`trashCan.thresholdDays`	`integer`	Number of days that objects will remain in the trashcan before they are automatically deleted by MatrixStore. Use "-1" (*forever*) to avoid the automatic deletion.
`keepTombstones`	`boolean`	`True` if tombstones should be kept on the cluster. `False` otherwise.
`pip`	`object`	Process in Place configuration.
`pip.amwa`	`boolean`	`True` to enable AMWA metadata (AS11 or AS10) extraction.
`pip.image`	`boolean`	`True` to enable Exif metadata extraction.
`pip.mediaInfo`	`boolean`	`True` to enable multimedia (video/audio) metadata extraction.
`pip.xmp`	`boolean`	`True` to enable XMP metadata extraction.
`pip.imf`	`boolean`	`True` to enable IMF metadata extraction.
`replication`	`object`	Replication configuration.
`replication.enabled`	`boolean`	`True` if replication is enabled.
`replication.targetClusterId`	`string`	Target cluster id.
`replication.targetClusterIPs`	`string`	Target cluster IPs.
`replication.targetUserId`	`string`	Target user id.
`replication.targetUserPass`	`string`	Target user password.
`replication.targetVaultId`	`string`	Target vault id.
`replication.deleteOnTarget`	`boolean`	`True` if data deletion should be propagated to the target cluster.
`replication.encryptionEnabled`	`boolean`	`True` to encrypt communication when sending files to target cluster.
`replication.stubbing`	`object`	Stubbing object once replicated.
`replication.stubbing.enabled`	`boolean`	Stubbing enabled/disabled.
`replication.stubbing.timeout`	`string`	Timeout before stubbing the source object once replicated. Valid values are: `"1 min"`, `"1 day"`, `"3 days"`, `"7 days"`, `"14 days"`, `"1 month"`.

List vaults in a space

```
GET /spaces/:spaceId/vaults
```

Response

```
Status: 200 OK
```


```
[
  {
    "id": "e5edb1a0-b7f6-48a3-155a-ae0e72620f14",
    "name": "News",
    "usedCapacity": 23000000,
    "freeCapacity": 4977000000,
    "totalCapacity" : 5000000000,
    "numObjects": 150,
    "config": {
      "provisionedCapacity": 5000000000,
      "capabilities": {
        "write": true,
        "read": true,
        "delete": true,
        "search": true,
        "update": true
      },
      "audits": {
        "read": false,
        "write": false,
        "delete": true
      },
      "protectionScheme": "Dual",
      "dataUpdatable": true,
      "integrityLevel": "Medium",
      "contentSearchEnabled": true,
      "compliance": {
        "type": "None",
        "thresholdMins": null
      },
      "keepTombstones": false,
      "pip": {
        "amwa": false,
        "image": false,
        "mediaInfo": false,
        "xmp": false,
        "imf": false
      },
      "replication": {
        "enabled": false,
        "targetClusterId": null,
        "targetClusterIPs": null,
        "targetUserId": null,
```

```
        "targetUserPass": null,
        "targetVaultId": null,
        "deleteOnTarget": false,
        "encryptionEnabled": false,
        "stubbing": {
          "enabled": false
        }
      },
      "trashCan": {
        "enabled": true,
        "thresholdDays": 7
      }
    }
  },
  ...
]
```

Example with fields parameter

```
GET /spaces/:spaceId/vaults?
fields=name,usedCapacity,freeCapacity,numObjects,config[provisionedCapacity,contentSearchEna
bled,replication[enabled]]
```

Response

```
Status: 200 OK
```

```
[
  {
    "id": "e5edb1a0-b7f6-48a3-155a-ae0e72620f14",
    "name": "News",
    "usedCapacity": 23000000,
    "freeCapacity": 4977000000,
    "numObjects": 150,
    "config": {
      "provisionedCapacity": 5000000000,
      "contentSearchEnabled": true,
      "replication": {
        "enabled": false
      }
    }
  },
  ...
]
```

Create a vault in a space

```
POST /spaces/:spaceId/vaults
POST /spaces/:spaceId/vaults?vaultAdminId=:userId
```

Request Parameters

Name	Type	Description
`vaultAdminId`	`string`	**Optional** Id of a User or Group to assign the Vault Admin role to.

Request body

Name	Type	Description
`name`	`string`	**Required**. Vault name.
`config`	`VaultConfig`	Vault configuration.

Example

```
{
  "name": "News",
  "config": {
    "contentSearchEnabled": true
  }
}
```

Note: default values will be used for those `VaultConfig` properties no provided.

Response

```
Status: 201 CREATED
Location: https://mapi.om.com/mapi/v1/vaults/e5edb1a0-b7f6-48a3-155a-ae0e72620f14
```

```
{
  "id": "e5edb1a0-b7f6-48a3-155a-ae0e72620f14",
  "name": "News",
  "usedCapacity": 0,
  "freeCapacity": 5000000000,
  "totalCapacity" : 5000000000,
  "numObjects": 0,
  "config": {
    "provisionedCapacity": 5000000000,
    "capabilities": {
      "write": true,
      "read": true,
      "delete": true,
      "search": true,
      "update": true
    },
    "audits": {
      "read": false,
      "write": false,
      "delete": true
    },
```

```
    "protectionScheme": "Dual",
    "dataUpdatable": true,
    "integrityLevel": "Medium",
    "contentSearchEnabled": true,
    "compliance": {
      "type": "None",
      "thresholdMins": null
    },
    "keepTombstones": false,
    "pip": {
      "amwa": false,
      "image": false,
      "mediaInfo": false,
      "xmp": false,
      "imf": false
    },
    "replication": {
      "enabled": false,
      "targetClusterId": null,
      "targetClusterIPs": null,
      "targetUserId": null,
      "targetUserPass": null,
      "targetVaultId": null,
      "deleteOnTarget": false,
      "encryptionEnabled": false,
      "stubbing": {
        "enabled": false
      },
      "trashCan": {
        "enabled": true,
        "thresholdDays": 7
      }
    }
  }
}
```


Get vault

```
GET /vaults/:id
```

Response

```
Status: 200 OK
```


```
{
  "id": "e5edb1a0-b7f6-48a3-155a-ae0e72620f14",
  "name": "News",
  "usedCapacity": 0,
  "freeCapacity": 5000000000,
  "totalCapacity" : 5000000000,
  "numObjects": 0,
```

```
  "config": {
    "provisionedCapacity": 5000000000,
    "capabilities": {
      "write": true,
      "read": true,
      "delete": true,
      "search": true,
      "update": true
    },
    "auditReadsEnabled": false,
    "auditWritesEnabled": false,
    "auditDeletionsEnabled": true,
    "protectionScheme": "Dual",
    "dataUpdatable": true,
    "integrityLevel": "Medium",
    "contentSearchEnabled": true,
    "compliance": {
      "type": "None",
      "thresholdMins": null
      },
    "keepTombstones": false,
    "pip": {
      "amwa": false,
      "image": false,
      "mediaInfo": false,
      "xmp": false,
      "imf": false
    },
    "replication": {
      "enabled": false,
      "targetClusterId": null,
      "targetClusterIPs": null,
      "targetUserId": null,
      "targetUserPass": null,
      "targetVaultId": null,
      "deleteOnTarget": false,
      "encryptionEnabled": false,
      "stubbing": {
        "enabled": false
      },
      "trashCan": {
        "enabled": true,
        "thresholdDays": 7
      }
    }
  }
}
```


Update vault

```
PATCH /vaults/:id
```

Request body

Name	Type	Description
`name`	`string`	Vault name.
`config`	`VaultConfig`	Vault configuration.

Example

```
{
  "config": {
    "auditWritesEnabled": true
    "pip": {
      "amwa": true
    }
  }
}
```

Response

```
Status: 200 OK
```

```
{
  "id": "e5edb1a0-b7f6-48a3-155a-ae0e72620f14",
  "name": "News",
  "usedCapacity": 0,
  "freeCapacity": 5000000000,
  "totalCapacity" : 5000000000,
  "numObjects": 0,
  "config": {
    "provisionedCapacity": 5000000000,
    "capabilities": {
      "write": true,
      "read": true,
      "delete": true,
      "search": true,
      "update": true
    },
    "auditReadsEnabled": false,
    "auditWritesEnabled": true,
    "auditDeletionsEnabled": true,
    "protectionScheme": "Dual",
    "dataUpdatable": true,
    "integrityLevel": "Medium",
    "contentSearchEnabled": true,
    "compliance": {
      "type": "None",
      "thresholdMins": null
      },
    "keepTombstones": false,
```

```
    "pip": {
      "amwa": true,
      "image": false,
      "mediaInfo": false,
      "xmp": false,
      "imf": false
    },
    "replication": {
      "enabled": false,
      "targetClusterId": null,
      "targetClusterIPs": null,
      "targetUserId": null,
      "targetUserPass": null,
      "targetVaultId": null,
      "deleteOnTarget": false,
      "encryptionEnabled": false,
      "stubbingTimeout": "off"
    },
      "trashCan": {
        "enabled": true,
        "thresholdDays": 7
      }
  }
}
```

Delete vault

```
DELETE /vaults/:id
```

Response

```
Status: 204 No Content
```

Purge vault trash can

This command purges the vault's trash can. Note that this action ignores the trash can threshold setting.

```
POST /vaults/:id/purge-trashcan
```

Response

```
Status: 204 No Content
```

Vaults Statistics

A *Vault Stats* object.

Name	Type	Description
`date`	`string`	Date in *yyyy-MM-dd* format.
`data.bytesRead`	`number`	Number of bytes read on this date.
`data.bytesWritten`	`number`	Number of bytes written on this date.
`data.totalBytes`	`number`	Total bytes used by this vault on this date.
`objects.written`	`number`	Number of objects written on this date.
`objects.read`	`number`	Number of objects read on this date.
`objects.deleted`	`number`	Number of objects deleted on this date.
`objects.total`	`number`	Total objects in the vault on this date.

Get Vaults Statistics

Retrieve a list of Vault Stats. One for each day between and including the start and end dates given.

```
GET /vaults/:id/stats
```

By default, without parameters the last 7 days is returned.

Parameters

Name	Type	Description	Required
`start`	`date`	Inclusive start of date range. *yyyy-MM-dd* format.	*only when end is given*
`end`	`date`	Inclusive end of date range. *yyyy-MM-dd* format.	*only when start is given*
`range`	`string`	A pre-defined range. One of `last7Days`, `currentMonth` or `lastMonth`	*no*

Parameters `range` and `start/end` cannot be used together. Doing so results in a `400 Bad Request`

Get pre-defined range:

```
GET /vaults/:id/stats?range=:range
```

Example

```
GET /vaults/123/stats?range=currentMonth
```

- Get specific date range:

```
GET /vaults/:id/stats?start=:startDate&end=:endDate
```

Example

```
GET /vaults/123/stats?start=2018-01-14&end=2018-02-28
```

Response

An array of *Vault Stats*.

```
Status: 200 OK
```

```
[
  {
    "date": "2018-01-14",
    "data": {
        "bytesRead": 123456789,
        "bytesWritten": 1234567,
        "totalBytes": 10987654321
    },
    "objects": {
        "written": 123,
        "read": 4321,
        "deleted": 202,
        "total": 5432
    },
  },
  ...
]
```

Directories

Directories represent external authentication services and a source of users and groups to be imported into MatrixStore system.

Properties

Name	Type	Description
`id`	`string`	Unique ID of a directory. *Read-only*.
`spaceId`	`string`	ID of a space to which this directory belongs to. *Read-only*.
`name`	`string`	User-friendly name of a directory
`description`	`string`	Description of a directory
`type`	`string`	Type of a directory. Supported values: `LDAP`
`config`	`object`	Type-specific configuration details of a connection for this directory, e.g. `LdapConfig`

Directory's `LdapConfig` type

Name	Type	Description
`host`	`string`	IP address or a hostname of an LDAP server
`port`	`integer`	Network port number of a LDAP service
`sslEnabled`	`boolean`	Specifies if communication with LDAP server should happen over SSL channel
`bindDN`	string	Name of a user account used to contact LDAP service.
`bindPassword`	string	Password for a given `bindDN` account.
`baseDN`	string	Base DN (distinguished-name) to which search should be limited to, e.g. ou=Site,dc=Company,dc=com

Properties of `DirectoryUser`

Name	Type	Description
`id`	`string`	Unique ID of a user. *Read-only*.
`spaceId`	`string`	ID of a Space to which directory of this user belongs to. *Read-only.*
`directoryId`	`string`	ID of a Directory to which this user belongs to. *Read-only*
`firstName`	`string`	First name (given name) of a user. *Read-only.*
`lastName`	`string`	Last name (surname) of a user. *Read-only.*
`displayName`	`string`	Name to be displayed in user interface. *Read-only.*
`accountName`	`string`	Name of the account e.g. sAMAccountName. *Read-only.*

Properties of `DirectoryGroup`

Name	Type	Description
`id`	`string`	Unique ID of a group. *Read-only*.
`spaceId`	`string`	ID of a Space to which directory of this group belongs to. *Read-only*.
`directoryId`	`string`	ID of a Directory to which this group belongs to. *Read-only*
`name`	`string`	Name of a group. *Read-only.*
`accountName`	`string`	Name of the account e.g. sAMAccountName. *Read-only.*

List Directories

```
GET /spaces/:spaceId/directories
```

Response

```
[
    {
        "id": "123",
        "spaceId": "234",
        "name": "Object-Matrix AD",
        "description": "This is OM's Active Directory",
        "type": "LDAP",
        "config": {
            "host": "object-matrix.com",
            "port": 389,
            "sslEnabled": true,
            "bindDN": "om\\admin",
            "baseDN": "dc=object-matrix,dc=com"
        }
```

```
    }, ...//more elements
]
```

Create Directory

```
POST /spaces/:spaceId/directories
```

```
{
    "name": "Company's AD",
    "description": "This is company's Active Directory",
    "type": "LDAP",
    "config": {
        "host": "my-ad.com",
        "port": 389,
        "sslEnabled": false,
        "bindDN": "mycompany\\admin",
        "bindPassword": "mypassword",
        "baseDN": "dc=mycompany,dc=com"
    }
}
```

Response

```
Status: 201 CREATED
Location: https://mapi.om.com/mapi/v1/directories/62971ded-46a6-45cd-a8f1-b64944a010a7
```

```
{
    "id": "62971ded-46a6-45cd-a8f1-b64944a010a7",
    "spaceId": "234",
    "name": "Company's AD",
    "description": "This is company's Active Directory",
    "type": "LDAP",
    "config": {
        "host": "my-ad.com",
        "port": 389,
        "sslEnabled": false,
        "bindDN": "mycompany\\admin",
        "baseDN": "dc=mycompany,dc=com"
    }
}
```

Get details of a Directory

```
GET /directories/:directoryId
```

Response

```
{
  "id": "123",
  "spaceId": "234",
  "name": "Object-Matrix AD",
  "description": "This is OM's Active Directory",
  "type": "LDAP",
  "config": {
    "host": "object-matrix.com",
    "port": 389,
    "sslEnabled": true,
    "bindDN": "om\\admin",
    "baseDN": "dc=object-matrix,dc=com"
  }
}
```

Update Directory

```
PATCH /directories/:directoryId
```

```
{
  "name": "Object-Matrix Ltd. LDAP",
  "config": {
            "host": "object-matrix.com",
            "port": 400,
            "sslEnabled": true,
            "bindDN": "om\\admin",
            "bindPassword": "password",
            "baseDN": "dc=object-matrix,dc=com"
        }
}
```

Response

```
Status: 200 OK
```

```
{
  "id": "123",
  "spaceId": "234",
  "name": "Object-Matrix Ltd. LDAP",
  "description": "This is OM's Active Directory",
  "type": "LDAP",
  "config": {
    "host": "object-matrix.com",
    "port": 400,
    "sslEnabled": true,
    "bindDN": "om\\admin",
    "baseDN": "dc=object-matrix,dc=com"
  }
}
```

Delete Directory

```
DELETE /directories/:directoryId
```

Response

```
Status: 204 No Content
```

List users of a Directory

Lists users from a given directory. Optionally allows you to use a matching filter.

```
GET /directories/:directoryId/users
```

Accepts one parameter named `filter` which will be used to result only matching users.

By default user's first name, last name, account name are checked for matching.

Example

Get list of all users matching a filter:

```
GET /directories/ea0a1afa-352b-4abb-9908-57c9c88c33f5/users?filter=john
```

Response Example

```
[
  {
    "id": "1234",
    "spaceId": "5678",
    "directoryId": "ea0a1afa-352b-4abb-9908-57c9c88c33f5",
    "firstName": "John",
    "lastName": "Smith",
    "displayName": "John Smith",
    "accountName": "jSmith99"
  }, ... //More matching elements
]
```

Get details of a Directory user

```
GET /directories/:directoryId/users/:id
```

Response

```
Status: 200 OK
```

```
{
  "id": "1234",
  "spaceId": "5678",
  "directoryId": "ea0a1afa-352b-4abb-9908-57c9c88c33f5",
  "firstName": "John",
  "lastName": "Smith",
  "displayName": "John Smith",
  "accountName": "jSmith99"
}
```

List groups of a Directory

Lists groups from a given directory. Optionally allows to use a matching filter.

```
GET /directories/:directoryId/groups
```

Accepts one parameter named `filter` which will be used to result only matching groups.

By default group's name and account name are checked for matching.

Examples

Get list of all groups matching a filter:

```
GET /directories/ea0a1afa-352b-4abb-9908-57c9c88c33f5/groups?filter=edit
```

Response Example

```
Status: 200 OK
```

```
[
  {
    "id": "123",
    "spaceId": "456",
    "directoryId": "ea0a1afa-352b-4abb-9908-57c9c88c33f5",
    "name": "Editors",
    "accountName": "editors_1"
  }, ... //more matching elements
]
```

Get details of a Directory group

```
GET /directories/:directoryId/groups/:id
```

Response

```
Status: 200 OK
```

```
{
  "id": "123",
  "spaceId": "456",
  "directoryId": "ea0a1afa-352b-4abb-9908-57c9c88c33f5",
  "name": "Editors",
  "accountName": "editors_1"
}
```

Import user or a group from a Directory

Method is used to import a user or a group into MatrixStore. Imported user/group can have permissions and roles granted.

Importing a user

```
POST /directories/:directoryId/users/:id/import
```

Response

```
Status: 201 CREATED
Location: https://mapi.om.com/mapi/v1/users/00b57e10-9c1b-4df8-9bc1-d84f30aa22da
```

```
{
  "id": "00b57e10-9c1b-4df8-9bc1-d84f30aa22da",
  "spaceId": "02a79f63-615a-11e7-9a64-a89aed199c67",
  "name": "John Doe",
  "description": null,
  "external": true,
}
```

Importing a group

```
POST /directories/:directoryId/groups/:id/import
```

Response

```
Status: 201 CREATED
Location: https://mapi.om.com/mapi/v1/groups/1d4d4fea-85b4-458b-92a8-b76fbe037544
```

```
{
  "id": "1d4d4fea-85b4-458b-92a8-b76fbe037544",
  "spaceId": "02a79f63-615a-11e7-9a64-a89aed199c67",
  "name": "Editors",
  "external": true
}
```

Users

Properties

Name	Type	Description
`id`	`string`	User id. *Read-only*.
`spaceId`	`string`	Space id where the user belongs to. *Read-only.*
`name`	`string`	User name. *Read-write*.
`emailAddress`	`string`	User's contact email address. *Read-write*
`description`	`string`	User description. *Read-write*.
`external`	`boolean`	`True` if the user has been imported from an external system. `False` if it has been created in MatrixStore. *Read-only*.
`credentials`	`object`	User login credentials. *Read-write*.
`credentials.login`	`string`	Login name. *Read-write*.
`credentials.password`	`string`	Login password. *Write-only*.

List users in a space

```
GET /spaces/:spaceId/users
```

Response

```
Status: 200 OK
```

```
[
  {
    "id": "7db3ddd4-615a-11e7-9a64-a89aed199c67",
    "spaceId": "02a79f63-615a-11e7-9a64-a89aed199c67",
    "name": "John Doe",
    "emailAddress": "john.doe@example.com",
    "description": null,
    "external": false,
    "credentials": {
      "login": "johndoe"
    }
  },
  ...
]
```

Create user

```
POST /spaces/:spaceId/users
```

Request body

Name	Type	Description
`name`	`string`	**Required.** User's full name.
`emailAddress`	`string`	User's email address
`description`	`string`	User description.
`credentials`	`object`	User login credentials.
`credentials.login`	`string`	Login name.
`credentials.password`	`string`	Login password.

Example

```
{
  "name": "John Snow",
  "external": false,
  "credentials": {
    "login": "johnsnow",
    "password": "XeaAmyUltraSecurePasswordAEx"
  }
}
```

Response

```
Status: 201 CREATED
Location: https://mapi.om.com/mapi/v1/users/b5edb1a0-b7f6-48a3-255a-be0e72620f11
```

```
{
  {
    "id": "b5edb1a0-b7f6-48a3-255a-be0e72620f11",
    "spaceId": "02a79f63-615a-11e7-9a64-a89aed199c67",
    "name": "John Snow",
    "email": null,
    "description": null,
    "external": false,
    "credentials": {
      "login": "johnsnow"
    }
  }
}
```

Get user

```
GET /users/:userId
```

Response

```
Status: 200 OK
```

```
{
  {
    "id": "b5edb1a0-b7f6-48a3-255a-be0e72620f11",
    "spaceId": "02a79f63-615a-11e7-9a64-a89aed199c67",
    "name": "John Snow",
    "emailAddress": "johnsnow@gmail.com",
    "description": null,
    "external": false,
    "credentials": {
      "login": "johnsnow"
    }
  }
}
```

Get current user

```
GET /users/current
```

Response

```
Status: 200 OK
```

```
{
  {
    "id": "fe8a22a2-7c21-4606-820c-f07b2fcc9d29",
    "spaceId": "02a79f63-615a-11e7-9a64-a89aed199c67",
    "name": "Mark Andrews",
    "emailAddress": "m.andrews2@yahoo.com,
    "description": null,
    "external": false,
    "credentials": {
      "login": "markandrews"
    }
  }
}
```

Update user

```
PATCH /users/:userId
```

Request body

Name	Type	Description
`name`	`string`	User full name.
`emailAddress`	`string`	User email address.
`description`	`string`	User description.
`credentials`	`object`	User login details.
`credentials.login`	`string`	User login name. **Note** that login/password are deleted when setting login name to `null`.
`credentials.password`	`string`	Login password. **Must** be provided along the credentials login.

Example

```
{
  "credentials": {
    "login": "johndoe",
    "password": "mypass"
  }
}
```

Response

```
Status: 200 OK
```

```
{
  "id": "b5edb1a0-b7f6-48a3-255a-be0e72620f11",
  "spaceId": "02a79f63-615a-11e7-9a64-a89aed199c67",
  "name": "johnsnow",
  "emailAddress": null,
  "description": null,
  "external": false,
  "credentials": {
    "login": "johndoe"
  }
}
```

Reset password

```
PUT /users/:userId/password-reset
```

Request body

Name	Type	Description
`newPassword`	`string`	New password.

Example

```
{
  "newPassword": "XeaAmyNewUltraSecurePasswordAEx"
}
```

Response

```
Status: 204 No Content
```

Delete user

```
DELETE /users/:userId
```

Response

```
Status: 204 No Content
```

List groups for user

```
GET /users/:userId/groups
```

Response

Array of `groups`.

```
Status: 200 OK
```

```
[
  {
    "id": "21451c26-32df-4cd9-bae7-621301fb2d59",
    "spaceId": "02a79f63-615a-11e7-9a64-a89aed199c67",
    "name": "Editors"
  }
]
```

Access Keys

Users can have number of access keys which are used as an authentication mechanism for applications and services making programatic access to the cluster via **MatrixStore APIs**. Request signing is automatic and is part of the API.

AccessKey are always associated with a User account, representing a person or a service.

Properties

Name	Type	Description
`id`	`string`	ID of the access key. *Read-only*.
`secret`	`string`	Secret of the access key. *Read-only* (**only provided on creation**).

Create access key

```
POST /users/:userId/access-keys
```

Response

```
Status: 201 Created
```

```
{
  "id": "2FvPkChR78oFnyfexample",
  "secret": "Alxdeerq5Tga6qEKzOPFej1V121Jxk5dRGZehROu"
}
```

This is the only time you will ever see the secret part of the access key!

List access keys of a user

```
GET /users/:userId/access-keys
```

Response

```
Status: 200 OK
```

```
[
  {
    "id": "2FvPkChR78oFnyfexample"
  },
  {
    "id": "1AvPkChR78oFnyfdsfAd2"
  }
]
```

Delete access key

```
DELETE /access-keys/:accessKeyId
```

Response

```
Status: 204 No Content
```

Groups

Properties

Name	Type	Description
`id`	`string`	Group id. *Read-only*.
`spaceId`	`string`	Space id. *Read-only*.
`name`	`string`	Group name. *Read-write*.
`emailAddress`	`string`	Group contact email address. *Read-write*.
`external`	`boolean`	Whether group is imported or not *Read-only*

List groups in a space

```
GET /spaces/:spaceId/groups
```

Response

```
Status: 200 OK
```

```
[
  {
    "id": "21451c26-32df-4cd9-bae7-621301fb2d59",
    "spaceId": "02a79f63-615a-11e7-9a64-a89aed199c67",
    "name": "Editors",
    "emailAddress": "post-production@example.com",
    "external": true
  },
  {
    "id": "c8a3e63a-2d36-4762-8a4d-abbda88f08ac",
    "spaceId": "02a79f63-615a-11e7-9a64-a89aed199c67",
    "name": "Administrators",
    "emailAddress": "admin@example.com",
    "external": false
  }
]
```

Create group

```
POST /spaces/:spaceId/groups
```

Request body

Name	Type	Description
`name`	`string`	Group name. *Required*
`emailAddress`	`string`	Group contact email address.

Example

```
{
  "name": "Editors"
}
```

Response

```
Status: 201 Created
Location: https://mapi.om.com/mapi/v1/groups/21451c26-32df-4cd9-bae7-621301fb2d59
```

```
{
  "id": "21451c26-32df-4cd9-bae7-621301fb2d59",
  "spaceId": "02a79f63-615a-11e7-9a64-a89aed199c67",
  "name": "Editors",
  "emailAddress": null,
  "external": true
}
```

Get group info

```
GET /groups/:groupId
```

Response

```
{
  "id": "21451c26-32df-4cd9-bae7-621301fb2d59",
  "spaceId": "02a79f63-615a-11e7-9a64-a89aed199c67",
  "name": "Publishers",
  "emailAddress": "publishing@example.com",
  "external": false
}
```

Update group

```
PATCH /groups/:groupId
```

Request body

Name	Type	Description
`name`	`string`	Group name.
`emailAddress`	`string`	Group contact email address.

Example

```
{
  "name": "Publisher Team",
  "emailAddress": "publishing-team@example.com"
}
```

Response

```
Status: 200 OK
```

```
{
  "id": "21451c26-32df-4cd9-bae7-621301fb2d59",
  "spaceId": "02a79f63-615a-11e7-9a64-a89aed199c67",
  "name": "Publisher Team",
  "emailAddress": "publishing-team@example.com",
  "external": false
}
```

Delete group

```
DELETE /groups/:groupId
```

Response

```
Status: 204 No Content
```

List group members

```
GET /groups/:groupId/users
```

Response

Array of `users`.

```
[
  {
    "id": "7db3ddd4-615a-11e7-9a64-a89aed199c67",
    "spaceId": "02a79f63-615a-11e7-9a64-a89aed199c67",
    "username": "John Doe",
    "description": null,
    "login": {
      "enabled": true
    }
  },
  ...
]
```

Add user to group

```
PUT /groups/:groupId/users/:userId
```

Response

```
Status: 204 No Content
```

Remove user from group

```
DELETE /groups/:groupId/users/:userId
```

Response

```
Status: 204 No Content
```

Permissions and Privileges

Permissions on a specific entity can be granted to users and groups using the *Privileges* endpoints.

Permission properties

Name	Type	Description
`id`	`string`	Permission id. *Read-only*.
`scope`	`string`	Permission scope. Valid values are `Cluster`, `Space` and `Vault`. *Read-only*.

List permissions in the system

```
GET /permissions
```

Parameters

Name	Type	Description
`scope`	`string`	Filter results by scope. Valid values are: `vault`, `space` and `cluster`. All permissions are included by default.

```
Status: 200 OK
```

```
[
  {
    "id": "AllClusterPermissions"
    "scope": "Cluster"
  },
  {
    "id": "GrantRevokeSpacePermissions"
    "scope": "Space"
  },
  ...
]
```

Privileges properties

Name	Type	Description
`scope`	`string`	Privilege permissions scope. Valid values are: `vault`, `space` and `cluster`. *Read-write*.
`grantedOn`	`{Vault|Space|Cluster}`	Target entity (`minimal representation`). *Read-write*.
`permissions`	`Array<Permission>`	List of permissions (`minimal representation`). *Read-write*.

Get user/group privileges

Parameters

Name	Type	Description
`scope`	`string`	Filter results by scope. Valid values are: `vault`, `space` and `cluster`. All permissions are included by default.

Example

```
GET /users/:userId/privileges?scope=vault
GET /groups/:groupId/privileges?scope=vault
```

Response

```
Status: 200 OK
```

```
[
  {
    "scope": "Vault",
    "grantedOn": {
      "vault": { "id": "12a79f63-615a-11e7-9a64-ab9aed199c61", "name": "News" }
    }
    "permissions": [
      { "id": "Read" },
      { "id": "Search" }
    ]
  },
  {
    "scope": "Vault",
    "grantedOn": {
      "vault": { "id": "e2694ab9-3c79-11e7-9722-dac4ea0158ae", "name": "Movies" }
    },
    "permissions": [
      { "id": "ReadData" },
      { "id": "SearchInVault" },
      { "id": "WriteData" },
      { "id": "DeleteData" }
    ]
```

```
  }
]
```

Get user/group privileges for an entity

```
GET /users/:userId/privileges/:entityId
GET /groups/:groupId/privileges/:entityId
```

Response

```
Status: 200 OK
```

```
{
  "scope": "Vault",
  "grantedOn": {
    "vault": { "id": "e2694ab9-3c79-11e7-9722-dac4ea0158ae", "name": "Movies" }
  },
  "permissions": [
    { "id": "ReadData" },
    { "id": "SearchInVault" },
    { "id": "WriteData" },
    { "id": "DeleteData" }
  ]
}
```

Set user/group privileges for an entity

```
PUT /users/:userId/privileges/:entityId
PUT /groups/:groupId/privileges/:entityId
```

Request body

Name	Type	Description
`scope`	`string`	Privilege permissions scope.
`permissionIds`	`Array<string>`	List of permissions IDs.

Example

```
{
  "scope": "Vault",
  "permissionIds": ["ReadData", "SearchInVault"]
}
```

Response

```
Status: 200 OK
```

```
{
  "scope": "Vault",
  "grantedOn": {
    "vault": { "id": "e2694ab9-3c79-11e7-9722-dac4ea0158ae", "name": "Movies" }
  },
  "permissions": [
    { "id": "ReadData" },
    { "id": "SearchInVault" }
  ]
}
```

Remove all privileges for an entity

```
DELETE /users/:userId/privileges/:entityId
DELETE /groups/:groupId/privileges/:entityId
```

Response

```
Status: 204 No Content
```

Add/Remove permissions

```
POST /users/:userId/privileges/:entityId/{add, remove}
POST /groups/:groupId/privileges/:entityId/{add, remove}
```

Request body

Name	Type	Description
`scope`	`string`	Permissions scope.
`permissionIds`	`Array<string>`	Permissions to be added or removed.

Example - Add

```
POST /users/:userId/privileges/:entityId/add
POST /groups/:groupId/privileges/:entityId/add
```

```
{
  "scope": "Vault",
  "permissionIds": ["WriteData", "DeleteData"]
}
```

Response

```
Status: 200 OK
```

```
{
  "scope": "Vault",
  "grantedOn": {
    "vault": { "id": "12a79f63-615a-11e7-9a64-ab9aed199c61", "name" : "News"}
  },
  "permissions": [
    { "id": "ReadData" },
    { "id": "SearchInVault" },
    { "id": "WriteData" },
    { "id": "DeleteData" }
  ]
}
```

Example - Remove

```
POST /users/:userId/privileges/:entityId/remove
POST /groups/:groupId/privileges/:entityId/remove
```

```
{
  "scope": "Vault",
  "permissionIds": ["DeleteData"]
}
```

Response

```
Status: 200 OK
```

```
{
  "scope": "Vault",
  "grantedOn": {
    "vault": { "id": "12a79f63-615a-11e7-9a64-ab9aed199c61", "name" : "News"}
  },
  "permissions": [
    { "id": "ReadData", "scope": "Vault" },
    { "id": "SearchInVault", "scope": "Vault" },
    { "id": "WriteData", "scope": "Vault" }
  ]
}
```

Roles

Role properties

Name	Type	Description
`id`	`string`	ID of the role . *Read-only*.
`scope`	`string`	Scope. of the role. Valid values are `Cluster`, `Space` and `Vault`. *Read-only*.
`name`	`string`	Name of the role. *Read-only*.
`description`	`string`	A short description of the role
`permissions`	`Array<Permission>`	The set of Permissions that are granted to this role (`minimal representation`). *Read-only*.

Get role

Returns information about a role with a given `roleId`

```
GET /roles/:roleId
```

Response

```
Status: 200 OK
```

```
{
  {
    "id": "a1edb1a0-b7f6-48a3-255a-be0e72620f11",
    "scope": "Vault",
    "name": "VaultAdmin",
    "description": "Vault administrator",
    "permissions": [ // minimal representation of #Permission
      { "id": "GrantRevokeVaultPermissions", "scope": "Vault" },
      { "id": "DeleteVault", "scope": "Vault" },
      { "id": "GetVaultInfo", "scope": "Vault" },
      { "id": "GetVaultStats", "scope": "Vault" },
      { "id": "UpdateVaultSettings", "scope": "Vault" }
    ]
  }
}
```

List roles in a space

Lists all roles in a space

```
GET /spaces/:spaceId/roles
```

Response

```
Status: 200 OK
```

```
[
  {
    "id": "a1edb1a0-b7f6-48a3-255a-be0e72620f11",
    "scope": "Vault",
    "name": "VaultAdmin",
    "description": "Vault administrator",
    "permissions": [ // minimal representation of #Permission
      { "id": "GrantRevokeVaultPermissions", "scope": "Vault" },
      { "id": "DeleteVault", "scope": "Vault" },
      { "id": "GetVaultInfo", "scope": "Vault" },
      { "id": "GetVaultStats", "scope": "Vault" },
      { "id": "UpdateVaultSettings", "scope": "Vault" }
    ]
  },
  ...
]
```

RoleAssignment properties

Name	Type	Description
`scope`	`string`	Role assignment scope. Valid values are: **Cluster**, **Space** and **Vault**. *Read-write*.
`grantedOn`	`{Vault|Space|Cluster}`	Target entity (`minimal representation`) . *Read-write*.
`roles`	`Array<Role>`	List of roles assigned (`minimal representation`). *Read-write*.

List role assignments of a user/group

Parameters

Name	Type	Description
`scope`	`string`	Filter results by scope. Valid values are: `Cluster`, `Space` and `Vault`. All roles are included by default.

Example

```
GET /users/:userId/role-assignments?scope=Vault
GET /groups/:groupId/role-assignments?scope=Vault
```

Response

Array of `RoleAssignments`.

```
[
  {
    "scope": "Vault",
    "grantedOn": {
      "Vault": { // minimal representation of #Vault
        "id": "12a79f63-615a-11e7-9a64-ab9aed199c61",
        "name": "News"
      }
    },
    "roles":[ // minimal representation of #Role
      { "id": "a1edb1a0-b7f6-48a3-255a-be0e72620f11",
        "name": "VaultAdmin",
        "description": "Vault administrator"
      }
    ]
  },
  ...
]
```

Get user/group roles for an entity

```
GET /users/:userId/roles-assignments/:entityId
GET /groups/:groupId/roles-assignments/:entityId
```

Response

```
Status: 200 OK
```

```
{
  "scope": "Vault",
  "grantedOn": {
    "Vault": { // minimal representation of #Vault
      "id": "12a79f63-615a-11e7-9a64-ab9aed199c61",
      "name": "News"
    }
  },
  "roles":[ // minimal representation of #Role
    { "id": "a1edb1a0-b7f6-48a3-255a-be0e72620f11",
      "name": "VaultAdmin",
      "description": "Vault administrator"
     }
   ]
}
```

Setting roles to a user/group

```
PUT /users/:userId/role-assignments/:entityId
PUT /groups/:groupId/role-assignments/:entityId
```

Request body

Name	Type	Description
`scope`	`string`	Type of entity of the role to be granted
`roleIds`	`Array<string>`	List of roles IDs.

Example

```
{
  "scope": "Vault",
  "roleIds": [
    "a1edb1a0-b7f6-48a3-255a-be0e72620f11", "b1edb1a0-b7f6-48a3-255a-be0e72620f22"
  ]
}
```

Response

Array of `RoleAssignments` of a modified user or a group.

```
Status: 200 OK
```

```
[
  {
    "scope": "Vault",
    "entity": {
      "vault": { // minimal representation of #Vault
        "id": "12a79f63-615a-11e7-9a64-ab9aed199c61",
        "name": "News"
      }
    },
    "roles":[ // minimal representation of #Role
      { "id": "a1edb1a0-b7f6-48a3-255a-be0e72620f11",
        "scope": "Vault",
        "name": "VaultAdmin",
        "description": "Vault administrator"
      }
    ]
  },
  ...
]
```

Add roles assigned to a user/group

```
PATCH /users/:userId/role-assignments/:entityId
PATCH /groups/:groupId/role-assignments/:entityId
```

Request body

Name	Type	Description
`scope`	`string`	Type of entity of the role to be granted
`roleIds`	`Array<string>`	List of roles IDs.

Example

```
{
  "scope": "Vault",
  "roleIds": [
    "a1edb1a0-b7f6-48a3-255a-be0e72620f11", "b1edb1a0-b7f6-48a3-255a-be0e72620f22"
  ]
}
```

Response

Array of `RoleAssignments` of a modified user or a group.

```
Status: 200 OK
```

```
[
  {
    "scope": "Vault",
    "entity": {
      "vault": { // minimal representation of #Vault
        "id": "12a79f63-615a-11e7-9a64-ab9aed199c61",
        "name": "News"
      }
    },
    "roles":[ // minimal representation of #Role
      { "id": "a1edb1a0-b7f6-48a3-255a-be0e72620f11",
        "scope": "Vault",
        "name": "VaultAdmin",
        "description": "Vault administrator"
      }
    ]
  },
  ...
]
```

Remove all role assignments for an entity

```
DELETE /users/:userId/role-assignments/:entityId
DELETE /groups/:groupId/role-assignments/:entityId
```

Response

```
Status: 204 No Content
```

Remove role assignment for an entity

```
DELETE /users/:userId/role-assignments/:entityId/:roleId
DELETE /groups/:groupId/role-assignments/:entityId/:roleId
```

Response

```
Status: 204 No Content
```

Access List

This resource represents an aggregation of the different permissions and roles assigned to a user/group on a specific entity.

Access List record properties

Name	Type	Description
`scope`	`string`	Type of entity. *Read-only*.
`grantedOn`	`{Vault|Space|Cluster}`	Target entity (`minimal representation`) . *Read-only*.
`identity`	`{User|Group}`	Target user/group. *Read-only*.
`permissions`	`Array<Permission>`	List of permissions (`minimal representation`). *Read-only*.
`roles`	`Array<Roles>`	List of roles(`minimal representation`). *Read-only*.
`groups`	`Array<Group>`	List of groups the user inherits permissions from (`minimal representation`). Only included for users. *Read-Only*.

Access List - Identity properties

Identities returned in this endpoint differ slightly from the normal User/Group object. Extra fields are added for the sake of convenience.

Name	Type	Description
`id`	`string`	Id of the User/Group.
`name`	`string`	Descriptive full name of the identity.
`external`	`boolean`	Whether or not this identity has been imported from an external system e.g. LDAP, AD.
`externalProperties` . `accountName`	`string`	External account name, for LDAP this is the *SAM-Account-Name*. Included only if this group is external.

Parameters

Name	Type	Description
`spaceId`	`string`	Id of the space we want the access list of.
`vaultId`	`string`	Id of the vault we want the access list of.
`userId`	`string`	Id of the user who the access list refers to.
`groupId`	`string`	Id of the group that the access list refers to.
`effective`	`boolean`	If `true` the permissions property will contain the sum the identity's direct permissions, roles and inherited group permissions related to the target entity. If `false` only the direct permissions are included. Default is `false`. **Applies to vaults only.**

Parameters `spaceId` and `vaultId` cannot be used together. Same with `userId` and `groupId`. Doing so results in a `400 Bad Request`.

Get access list filtered by entity

```
GET /access-list/cluster
GET /access-list/space?spaceId=:spaceId
GET /access-list/vault?vaultId=:vaultId
```

Response

An access list array.

```
Status: 200 OK
```

```
[{
    "scope": "Vault",
    "grantedOn": {
      "vault": { // minimal representation of #Vault
        "id": "12a79f63-615a-11e7-9a64-ab9aed199c61",
        "name": "News"
      }
    },
    "identity": {
      "user": {
        "id": "32a79f63-615a-11e7-9a64-ab9aed199c61",
        "name": "John Doe",
        "external": true,
        "externalProperties": { //included with external users/groups only
          "accountName": "johndoe1"
        }
      }
    },
    "permissions": [ // minimal representation of #Permission
      { "id": "ReadData" },
      { "id": "SearchInVault" },
```

```
      { "id": "WriteData" }
    ],
    "roles":[ // minimal representation of #Role
      { "id": "a1edb1a0-b7f6-48a3-255a-be0e72620f11",
        "scope": "Vault",
         "name": "VaultAdmin",
         "description": "Vault administrator"
      }
    ],
    "groups": [ //Included with users only.
      { "id": "a2c9f8a2-577c-4c4b-bee0-ec734de11a61",
        "name": "Editors"
      }
    ]
}, ...]
```

Get access list filtered by user/group

```
GET /access-list/cluster?userId=:userId
GET /access-list/space?groupId=:groupId
GET /access-list/vault?userId=:userId
```

Response

An access list array (see above).

Get access list filtered by entity and user/group

```
GET /access-list/cluster?userId=:userId
GET /access-list/space?spaceId=:spaceId&groupId=:groupId
GET /access-list/vault?vaultId=:vaultId&userId=:userId
```

Response

An access list *record*.

```
Status: 200 OK
```

```
{
    "scope": "Vault",
    "grantedOn": {
      "vault": { // minimal representation of #Vault
        "id": "12a79f63-615a-11e7-9a64-ab9aed199c61",
        "name": "News"
      }
    },
    "identity": {
      "group": {
        "id": "32a79f63-615a-11e7-9a64-ab9aed199c61",
        "name": "Editors",
        "external": false
```

```
      }
    },
    "permissions": [ // minimal representation of #Permission
      { "id": "ReadData" },
      { "id": "SearchInVault" },
      { "id": "WriteData" }
    ],
    "roles":[ // minimal representation of #Role
      { "id": "a1edb1a0-b7f6-48a3-255a-be0e72620f11",
        "scope": "Vault",
        "name": "VaultAdmin",
        "description": "Vault administrator"
      }
    ]
    // groups field only included with users
}
```

Nodes

Node properties

Name	Type	Description
`id`	`string`	Node id. *Read-only*.
`headNode`	`boolean`	`True` if node is the cluster head node. `False` otherwise.
`ipAddress`	`string`	Node IP. *Read-only*. (Can be updated using `NetworkConfig`)
`mxsVersion`	`string`	MatrixStore version. *Read-only.* (System and Server together?)
`osInfo`	`OsInfo`	Node OS version information. *Read-only*.
`uptime`	`number`	Node uptime in seconds. *Read-only*.
`usedCapacity`	`number`	Node used capacity in bytes. *Read-only*.
`freeCapacity`	`number`	Node free capacity in bytes. *Read-only*.
`totalCapacity`	`number`	Node total disk capacity in bytes. *Read-only*.
`status`	`string`	Node health status. Valid values are: `green`, `orange` and `red`. *Read-only*.
`online`	`boolean`	`True` if node is online. `False` if it is offline.
`information`	`Array of strings`	Other node information such as hardware failures.
`decommissioned`	`boolean`	`True` if node has been decommissioned. `False` otherwise.
`networkConfig`	`NetworkConfig`	Node network configuration. *Read-write*.

`OsInfo` properties

Name	Type	Description
`name`	`string`	Name of the operating system. *Read-only*.
`version`	`string`	Version of the named operating system. *Read-only*
`kernelVersion`	`string`	Version of the operation system's kernel. *Read-only*

`NetworkConfig` properties

Name	Type	Description
`ipMode`	`string`	IP mode. Valid values are: `Static` and `DHCP`. *Read-write*.
`ipAddress`	`string`	Node IP. *Read-write.*
`subnetMask`	`string`	Network subnet mask. *Read-write.*
`gateway`	`string`	Network gateway. *Read-write*.
`dns`	`Array of strings`	Network dns. *Read-write*.
`timeServer`	`Array of strings`	Node time server IPs. *Read-write*.

Get nodes

```
GET /nodes
```

Response

Array of `Node`.

Get node

```
GET /nodes/:nodeId
```

Response

```
Status: 200 OK
```


```
{
  {
    "id": "a1edb1a0-b7f6-48a3-255a-be0e72620f11",
    "ipAddress": "109.69.84.196",
    "headNode": true,
    "mxsVersion": "3.3.1 / 3.3.1",
    "osInfo" : {
      "name" : "MatrixOS",
      "version" : "14.04.3",
      "kernelVersion" : "3.19.0-49-generic"
    }
    "uptime": 345600000,
    "usedCapacity": 107374182400,
    "freeCapacity": 50000,
    "totalCapacity": 107374232400,
    "status": "green",
    "online": true,
    "information": null,
    "networkConfig": {
      "ipMode": "Static",
```

```
      "ipAddress": "109.69.84.196",
      "subnetMask": "255.255.255.0",
      "gateway": "109.69.84.193",
      "dns": null,
      "timeServer": ["10.0.20.131", "127.127.1.0"]
    }
  }
}
```

Update node

Note: Only node **network configuration** can be modified.

```
PATCH /node/:nodeId
```

Request body

Name	Type	Description
`networkConfig`	`NetworkConfig`	Node network configuration.

Example

Update network configuration

```
{
  "networkConfig": {
    "ipAddress": "109.69.84.190"
  }
}
```

Response

```
Status: 200 OK
```

```
{
  {
    "id": "a1edb1a0-b7f6-48a3-255a-be0e72620f11",
    "ipAddress": "109.69.84.190",
    "headNode": true,
    "mxsVersion": "3.3.1 / 3.3.1",
    "osInfo" : {
      "name" : "MatrixOS",
      "version" : "14.04.3",
      "kernelVersion" : "3.19.0-49-generic"
    }
    "uptime": 345600000,
    "usedCapacity": 107374182400,
    "freeCapacity": 50000,
    "totalCapacity": 107374232400,
```

```
    "status": "green",
    "online": true,
    "information": null,
    "networkConfig": {
      "ipMode": "Static",
      "ipAddress": "109.69.84.190",
      "subnetMask": "255.255.255.0",
      "gateway": "109.69.84.193",
      "dns": null,
      "timeServer": ["10.0.20.131", "127.127.1.0"]
    }
  }
}
```


Node commands

Commands below accept one or more node ids separated by commas.

```
POST /nodes/:nodeId1...nodeIdN/<command>
```

Silence the RAID alarm

```
POST /nodes/:nodeId/silence-alarm
```

Response

```
Status: 204 No Content
```

Reboot Node

```
POST /nodes/:nodeIds/reboot
```

Response

```
Status: 204 No Content
```

Shutdown Node

```
POST /nodes/:nodeId/shutdown
```

Response

```
Status: 204 No Content
```

Decommission

```
POST /nodes/:nodeId/decommission
```

Request body

Name	Type	Description
`password`	`string`	Decommission password.

Response

```
Status: 204 No Content
```

Rebalance

```
POST /nodes/:nodeId/rebalance
```

Request body

Name	Type	Description
`password`	`string`	Rebalance password.

Response

```
Status: 204 No Content
```

Get Logs

Retrieves latest logs from the given nodes.

```
GET /nodes/:nodeId/logs
```

Response

application/zip content

Tasks

Tasks properties

Name	Type	Description
`taskId`	`string`	Task id. Note that same type of task in different nodes will have the same `taskId`. *Read-only*.
`nodeId`	`string`	Node id. *Read-only*.
`nodeIpAddress`	`string`	Node's external IP address. *Read-only*.
`name`	`string`	Task name. *Read-only*.
`description`	`string`	Task description. *Read-only*.
`status`	`string`	Task status message. *Read-only*.
`completePct`	`number`	Task complete percentage. *Read-only*.
`runs`	`number`	Number of runs since last boot. *Read-only*.
`runStartTime`	`Date`	Last/current run start time. `null` if there's been no previous run. *Read-only*.
`lastRuntime`	`number`	Last run duration in milliseconds. *Read-only*.
`lastCompleted`	`Date`	Last run completed time. *Read-only*. `null` if there's been no previous run.
`averageRuntime`	`number`	Average run duration in milliseconds. *Read-only*.
`periodSecs`	`number`	Task period in seconds. *Read-only*.
`delaySecs`	`number`	First task execution delay in seconds. *Read-only*.
`numErrors`	`number`	Number of errors reported by the task. *Read-only*.
`isPausable`	`boolean`	`True` if task is pausable. `False` otherwise. *Read-only*.
`isKickStartable`	`boolean`	`True` if task can be started manually. `False` otherwise. *Read-only*.
`isExecutableInSpecialMode`	`boolean`	`True` if task can be executed in special mode. `False` otherwise. *Read-only*.
`isSchedulable`	`boolean`	`True` if task schedule is configurable. `False` otherwise. *Read-only*.
`scheduleConfig`	`ScheduleConfig`	Task schedule configuration (if applicable). *Read-write (update it using `update-schedule` command).

Task `ScheduleConfig` type

Name	Type	Description
`enabled`	`boolean`	`True` if schedule is enabled. `False` otherwise.
`timeZoneId`	`string`	Time zone id.
`daysOfWeek`	`Array<string>`	Days of week (`Monday`, `Tuesday`, ...) when the task is considered to be in schedule (providing time is in range startAtTime and endAtTime)
`startAtTime`	`string`	Start time of the task schedule. Using the format `HH:MM` (24h clock).
`endAtTime`	`string`	End time of the task schedule. Using the format `HH:MM` (24h clock).

Task Logs type

Name	Type	Description
`taskId`	`string`	Id of the task.
`nodeId`	`string`	Id of the node.
`info`	Array of `string`	Standard information logged by the task.
`errors`	Array of `string`	Errors logged by the task.

Query parameters

Name	Type	Description
`nodes`	`string`	Comma-separated list of node ids. **Default**: all nodes.

List specific task in nodes

```
GET /tasks/:id?nodes=nodeId1,nodeId2
```

Response

```
Status: 200 OK
```


```
[
  {
    "taskId": "replication",
    "nodeId": "d5906439-27e2-4ca9-94a3-76573dbf5d96",
    "nodeIpAddress": "10.0.20.140",
    "name": "Replication",
    "description": "Replicate data to a remote cluster",
```

```
    "status": "RUNNING",
    "completePct": 35,
    "runs": 23,
    "runStartTime": "2018-02-21T16:22:00+00:00",
    "lastRuntime": 5,
    "lastCompleted": "2018-02-21T15:21:00+00:00",
    "averageRuntime": 2000,
    "periodSecs": 5,
    "delaySecs": 60,
    "numErrors": 0,
    "isPausable": true,
    "isKickStartable": true,
    "isExecutableInSpecialMode": false,
    "isSchedulable": true,
    "scheduleConfig": {
      "enabled": true,
      "timeZoneId": "Europe/London",
      "daysOfWeek": ["Monday", "Tuesday"],
      "startAtTime": "15:00",
      "endAtTime": "22:00"
    }
  },
    {
      "taskId": "replication",
      "nodeId": "4cfd3b6c-6a5a-4713-b0ff-73528d27bc23",
      ...
    }
]
```

List all tasks in nodes

```
GET /tasks?nodes=nodeId1,nodeId2
```

Response

```
Status: 200 Ok
```

```
[
  {
    "taskId": "replication",
    "nodeId": "d5906439-27e2-4ca9-94a3-76573dbf5d96",
    "nodeIpAddress": "10.0.20.140",
    "name": "Replication",
    "description": "Replicate data to a remote cluster",
    "status": "RUNNING",
    "completePct": 35,
    "runs": 23,
    "runStartTime": "2018-02-21T16:22:00+00:00",
    "lastRuntime": 5,
    "lastCompleted": "2018-02-21T15:21:00+00:00",
    "averageRuntime": 2000,
```

```
    "periodSecs": 5,
    "delaySecs": 60,
    "numErrors": 0,
    "isPausable": true,
    "isKickStartable": true,
    "isExecutableInSpecialMode": false,
    "isSchedulable": true,
    "scheduleConfig": {
      "enabled": true,
      "timeZoneId": "Europe/London",
      "daysOfWeek": ["Monday", "Tuesday"],
      "startAtTime": "15:00",
      "endAtTime": "22:00"
    }
  },
    {
      "taskId": "vot",
      "nodeId": "d5906439-27e2-4ca9-94a3-76573dbf5d96",
      ...
    }
]
```

Task logs

```
GET /tasks/:id/logs?nodes=nodeId1,nodeId2
```

Response

```
[
  {
    "taskId": "replication",
    "nodeId": "d5906439-27e2-4ca9-94a3-76573dbf5d96",
    "log": ["SyncMetadata for object 234"],
    "errors": []
  },
  ...
]
```

Task commands

```
POST /tasks/:id/<command>?nodes=nodeId1,nodeId2
```

Pause task

```
POST /tasks/:id/pause
```

Response

```
Status: 204 No Content
```

Resume task

```
POST /tasks/:id/resume
```

Response

```
Status: 204 No Content
```

Kickstart task

```
POST /tasks/:id/kickstart?nodes=nodeId1
```

Response

```
Status: 204 No Content
```

Update task schedule

```
POST /tasks/:id/update-schedule
```

Note: This command is always applied to all nodes. `Nodes` query parameter is ignored.

Request body

Name	Type	Description
`scheduleConfig`	`ScheduleConfig`	Task schedule configuration.

Example

```
{
  "enabled": true,
  "timeZoneId": "Europe/London",
  "daysOfWeek": ["Monday", "Tuesday", "Wednesday"],
  "startAtTime": "15:00",
  "endAtTime": "22:00"
}
```

Response

```
Status: 204 No Content
```

Audits

Audit Entry properties

Name	Type	Description
`timestamp`	`Date`	Datetime with millisecond precision.
`action.type`	`string`	Name of the type of action.
`action.scope`	`string`	Scope of the action. e.g. `MatrixStore`, `Object`.
`action.target`	`string`	Identifier for the target of the action. Not exclusively an entity id.
`action.message`	`string`	Descriptive message for the action.
`action.errorCode`	`number`	Error code associated with the action, if any. `0` if none.
`executor.id`	`string`	Id of the user/service that performed the action.
`executor.name`	`string`	Name of the user/service that performed the action.
`executor.host`	`string`	Host address and port of the user/service that performed the action.

Get Audit entries

Retrieve a list of Audit Entries, each one representing an audited action between and including the start and end dates given.

As the amount of recorded audits within the dates requested could be in the millions, entries are paginated using a continuation token. A hyperlink for the next page (with the continuation token) is returned in the HTTP response `Link` header field.

```
GET /cluster/audits
GET /spaces/:id/audits
GET /vaults/:id/audits
```

By default, without parameters the audits from today are returned.

Parameters

Name	Type	Description	Required
`start`	`date`	Inclusive start of date range. *yyyy-MM-dd* format.	*only when end is given*
`end`	`date`	Inclusive end of date range. *yyyy-MM-dd* format.	*only when start is given*
`range`	`string`	A pre-defined range. One of `today`, `last7Days`, `last30Days`, `currentMonth` or `lastMonth`.	*no*
`continue`	`string`	Continuation token used for pagination. Tokens are returned in response link headers.	*no*

Parameters `range` and `start/end` cannot be used together. Doing so results in a `400 Bad Request`.

Get audits from pre-defined range:

```
GET /cluster/audits?range=today
GET /spaces/:id/audits?range=lastMonth
GET /vaults/:id/audits?range=last30Days
```

- Get audits from specific date range:

```
GET /cluster/audits?start=2018-01-05&end=2018-02-18
GET /spaces/:id/audits?start=2018-01-05&end=2018-05-18
GET /vaults/:id/audits?start=2018-01-05&end=2018-02-18
```

Example

```
GET /vaults/123/audits?range=last7Days
```

Response

```
Status: 200 OK
Link: </mapi/v1/vaults/123/audits?range=last7Days&continue=251>; rel="next",
      </mapi/v1/vaults/123/audits?range=last7Days>; rel="first"
```


```
[
  {
    "timestamp": "2017-07-21T10:25:19.885Z",
    "action": {
      "type": "Delete",
      "scope": "Object",
      "target": "fa768798-2d59-11e6-9386-b40e5bdb394f-91",
      "message": null,
      "errorCode": 0
    },
    "executor": {
      "id": "b6cffe8a-2486-11e5-97b8-b92331b048cc",
```

```
      "name": "John",
      "host": "/10.0.20.78:59486"
    }
  },
  ...
]
```

Download Audits

Download a zipped CSV file containing all audit entries between and including the start and end dates given.

Parameters

Same parameters as *Get Audit Entries*. See above.

Download audits from pre-defined range:

```
GET /cluster/audits/download?range=today
GET /spaces/:id/audits/download?range=last7Days
GET /vaults/:id/audits/download?range=last30Days
```

Download audits from specific date range:

```
GET /cluster/audits/download?start=2018-01-05&end=2018-02-18
GET /spaces/:id/audits/download?start=2018-01-05&end=2018-02-18
GET /vaults/:id/audits/download?start=2018-01-05&end=2018-02-18
```

Example

```
GET /vaults/123/audits/download?range=last7Days
```

Response

```
Status: 200 OK
Content-Type: application/zip
```

Body is the zip file containing the CSV file

Hub Management

Properties

HubInfo type

Name	Type	Description
`id`	`string`	Unique ID of a hub
`descriptiveName`	`string`	User-friendly name of a hub
`networkConfig`	`NetworkConfig`	Network configuration for the hub. Only the IP address is returned. (read-only)
`hubError`	`string`	Details any error currently occurring on the hub (read-only)

ExportInfo type

Name	Type	Description
`spaceId`	`string`	ID of a Space to which exported vault belongs to (read-only)
`spaceDescriptiveName`	`string`	user-friendly name of a Space to which exported vault belongs to (read-only)
`vaultId`	`string`	Unique ID of an exported vault (read-only)
`vaultDescriptiveName`	`string`	User-friendly name of an exported vault (read-only)
`exportName`	`string`	The requested externally visible name for the export
`currentExportName`	`string`	The current externally visible name for the export. This can differ from the requested name if for instance another export is currently using the same name (read-only)
`exportPath`	`string`	The absolute path the export is mounted to on the hub
`exportMounted`	`boolean`	True, if export has been successfully mounted on the hub, otherwise false (read-only)
`exportError`	`string`	Description of an error for the export e.g. reason of mount failure (read-only)
`smbInfo`	`SmbInfo`	Information about parameters for SMB export
`nfsInfo`	`NfsInfo`	Information about parameters for NFS export
`lastUpdatedMs`	`integer`	Time that this information was last updated (in milliseconds from unix epoch) (read-only)

SmbInfo type

Name	Type	Description
`readOnly`	`boolean`	If **true** SMB share will allow read-only access (default false)

NfsInfo type

Name	Type	Description
`readOnly`	`boolean`	If **true** NFS volume will be available in read-only mode (default false) **Important**: flag `readOnly` is **true** takes precedence over host-specific settings. If `NfsInfo` specifies read-only mode, hosts will not be able to gain write-access to NFS export, even though some of the hosts may have **rw** option set. If `readOnly` is **false** then individual hosts permissions are taken into account.
`hosts`	`ArrayList<NfsHost>`	List of hosts with granted access to NFS export

NfsHost type

Name	Type	Description
`host`	`string`	IP address, DNS name or network which should have access to NFS export e.g. 192.168.1.12 or client.example.com or 192.168.1.0/24
`options`	`Array<string>`	set of NFS specific options for a given host. Currently supported **rw** - host will have read-write access to the export **Important**: **rw** option is taken into account only if `readOnly` flag in `NfsInfo` is **false**. See notes on `readOnly` option in `NfsInfo`

List hubs in the cluster

```
GET /hubs
```

Response

```
Status: 200 OK
```

Array of HubInfos

Get hub information

```
GET /hubs/:id
```

Response

```
Status: 200 OK
```

```
// HubInfo
{
    "id":   "7311a2ba-dd60-4f83-9ceb-a470b0480c7d",
    "descriptiveName": "Hub1",
    "networkConfig": {
      "ipAddress": "109.69.84.196"
    },
    "hubError": "NTP Unavailable"
}
```

Add new hub

```
POST /hubs
```

```
{
    "host": "109.69.84.196",
    "descriptiveName": "Hub1"
}
```

Response

```
Status: 201 Created
```

```
{
    "id":   "7311a2ba-dd60-4f83-9ceb-a470b0480c7d",
    "descriptiveName": "Hub1",
    "networkConfig": {
      "ipAddress": "109.69.84.196"
    }
}
```

Update hub information

```
PATCH /hubs/:id
```

Example

```
{
    "descriptiveName": "Hub Renamed"
}
```

Response

```
Status: 200 OK
```

```
{
    "id":   "7311a2ba-dd60-4f83-9ceb-a470b0480c7d",
    "descriptiveName": "Hub Renamed",
    "networkConfig": {
        ...
    }
}
```

Remove a hub

Removes information about a hub from the cluster.

Removing a hub automatically removes all exports from it and unmounts volumes.

```
DELETE /hubs/:id
```

Response

```
Status: 204 No Content
```

List exports on the hub

Includes current status of an export, if vault has been mounted.

```
GET /hubs/:id/exports
```

Response

```
Status: 200 OK
```

Array of ExportInfos

Get export information

```
GET /hubs/:id/exports/:vaultId
```

Response

```
Status: 200 OK
```

```
// ExportInfo
{
    "spaceId": "33decdd4-f7dc-4723-8021-607c2fb2adbb",
    "spaceDescriptiveName": "",
    "vaultId": "3162d36-04ef-49e8-b607-b446d76c6c80",
    "vaultDescriptiveName": "Video",
    "exportName": "Video",
    "currentExportName": "Video_1",
    "exportPath": "/tmp/matrixstore/Video_1",
    "exportMounted": true,
    "errorMessage": "",
    "smbInfo": {
         "readOnly": false,
    },
    "nfsInfo": {
         "readOnly": false,
         "hosts": [
            {
                "host": "192.168.1.0/24",
                "options": [ "rw" ]
            },
            {
                "host": "192.168.0.10"
            }
        ]
    },
    "lastUpdatedMs": 1539612110706
}
```

Create an export

Adds a vault to a hub. Added vault is automatically mounted as SMB and/or NFS.

```
POST /hubs/:id/exports
```

Example

```
// ExportInfo
{
    "vaultId": "3162d36-04ef-49e8-b607-b446d76c6c80",  // required
    "exportName": "Video",  // required
    "smbInfo": {
        "readOnly": false,
    }
}
```

Response

```
Status: 201 Created
```

```
// ExportInfo
{
    "spaceId": "33decdd4-f7dc-4723-8021-607c2fb2adbb",
    "spaceDescriptiveName": "",
    "vaultId": "3162d36-04ef-49e8-b607-b446d76c6c80",
    "vaultDescriptiveName": "Video Vault",
    "exportName": "Video",
    "currentExportName": "Video",
    "exportPath": "/tmp/matrixstore/Video",
    "exportMounted": true,
    "errorMessage": "",
    "smbInfo": {
         "readOnly": false,
    },
    "lastUpdatedMs": 1539612110706
}
```

Update export

Updates information about export e.g. export name, readOnly mode, hosts information for NFS etc.

Exports are identified by vaultId.

`PATCH` operation requires providing entire modified field. For example, when modifying field `hosts` from `nfsInfo` structure, complete value for that field has to be given as a parameter (field value is overwritten by new value). This is consistent with semantics of JSON Merge Patch RFC 7396.

```
PATCH /hubs/:id/exports/:vaultId
```

```
// ExportInfo
{
    "exportName": "Video Added NFS",
    "nfsInfo": {
         "hosts": [
            {
                "host": "192.168.1.0/24",
                "options": [ "rw" ]
            },
            {
                "host": "192.168.0.10"
            }
        ]
    }
}
```

Response

```
Status: 200 OK
```

```
// ExportInfo
{
    "spaceId": "33decdd4-f7dc-4723-8021-607c2fb2adbb",
    "spaceDescriptiveName": "",
    "vaultId": "3162d36-04ef-49e8-b607-b446d76c6c80",
    "vaultDescriptiveName": "Video Vault",
    "exportName": "Video Added NFS",
    "currentExportName": "Video Added NFS",
    "exportPath": "/tmp/matrixstore/Video_Added_NFS",
    "exportMounted": true,
    "errorMessage": "",
    "smbInfo": {
         "readOnly": false,
    },
    "nfsInfo": {
         "readOnly": false,
         "hosts": [
            {
                "host": "192.168.1.0/24",
                "options": [ "rw" ]
            },
            {
                "host": "192.168.0.10"
            }
        ]
    },
    "lastUpdatedMs": 1539612110706
}
```

Remove an export

Stops sharing a vault on a hub.

Deleted export is automatically unmounted on the hub.

```
DELETE /hubs/:id/exports/:vaultId
```

Response

```
Status: 204 No Content
```