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Hitachi Storage Advisor

RESTful API Reference Guide

Hitachi Data Systems

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Preface

Hitachi Storage Advisor is an infrastructure management solution that unifies storage management solutions such as storage provisioning, data protection, and storage management; simplifies the management of large scale data centers by providing smarter software services; and is extensible to provide better programmability and better control.

- Intended Audience
- Product version
- Release notes
- Document conventions
- Conventions for storage capacity values
- Accessing product documentation
- Getting help
- Comments

Intended Audience

This document is intended for system administrators, Hitachi Data Systems representatives, and authorized service providers who configure and operate the Hitachi Virtual Storage Platform G200, G400, G600, G800, VSP G1000, VSP G1500 and VSP F400, F600, F800, F1500 storage systems with Hitachi Storage Advisor.

Readers of this document should be familiar with the following:

- RAID storage systems and their basic functions.
- Volume creation and management.
- Pool creation and management.
- Parity group creation and management.

Product version

This document revision applies to Hitachi Storage Advisor version 2.1.0 or later.

Release notes

Read the release notes before installing and using this product. They may contain requirements or restrictions that are not fully described in this document or updates or corrections to this document.

Release notes are located on Support Connect at https://knowledge.hds.com/Documents.

Document conventions

This document uses the following typographic conventions:

Convention	Description
Bold	• Indicates text in a window, including window titles, menus, menu options, buttons, fields, and labels. Example: Click **OK**. • Indicates emphasized words in list items.
Italic	• Indicates a document title or emphasized words in text. • Indicates a variable, which is a placeholder for actual text provided by the user or for output by the system. Example: `pairdisplay -g group` (For exceptions to this convention for variables, see the entry for angle brackets.)

Convention	Description
`Monospace`	Indicates text that is displayed on screen or entered by the user. Example: `pairdisplay -g oradb`
< > angle brackets	Indicates variables in the following scenarios: • Variables are not clearly separated from the surrounding text or from other variables. Example: `Status-<report-name><file-version>.csv` • Variables in headings.
[ ] square brackets	Indicates optional values. Example: [a | b] indicates that you can choose a, b, or nothing.
{ } braces	Indicates required or expected values. Example: { a | b } indicates that you must choose either a or b.
| vertical bar	Indicates that you have a choice between two or more options or arguments. Examples: [a | b] indicates that you can choose a, b, or nothing. { a | b } indicates that you must choose either a or b.

This document uses the following icons to draw attention to information:

Icon	Label	Description
	Note	Calls attention to important or additional information.
	Tip	Provides helpful information, guidelines, or suggestions for performing tasks more effectively.
	Caution	Warns the user of adverse conditions and/or consequences (for example, disruptive operations, data loss, or a system crash).
	WARNING	Warns the user of a hazardous situation which, if not avoided, could result in death or serious injury.

Conventions for storage capacity values

Physical storage capacity values (for example, disk drive capacity) are calculated based on the following values:

Physical capacity unit	Value
1 kilobyte (KB)	1,000 (10^3) bytes
1 megabyte (MB)	1,000 KB or $1,000^2$ bytes
1 gigabyte (GB)	1,000 MB or $1,000^3$ bytes
1 terabyte (TB)	1,000 GB or $1,000^4$ bytes
1 petabyte (PB)	1,000 TB or $1,000^5$ bytes

Physical capacity unit	Value
1 exabyte (EB)	1,000 PB or $1{,}000^6$ bytes

Logical capacity values (for example, logical device capacity) are calculated based on the following values:

Logical capacity unit	Value
1 block	512 bytes
1 cylinder	Mainframe: 870 KB Open-systems: • OPEN-V: 960 KB • Others: 720 KB
1 KB	1,024 (2^{10}) bytes
1 MB	1,024 KB or $1{,}024^2$ bytes
1 GB	1,024 MB or $1{,}024^3$ bytes
1 TB	1,024 GB or $1{,}024^4$ bytes
1 PB	1,024 TB or $1{,}024^5$ bytes
1 EB	1,024 PB or $1{,}024^6$ bytes

Accessing product documentation

Product user documentation is available on Hitachi Data Systems Support Connect: https://knowledge.hds.com/Documents. Check this site for the most current documentation, including important updates that may have been made after the release of the product.

Getting help

Hitachi Data Systems Support Connect is the destination for technical support of products and solutions sold by Hitachi Data Systems. To contact technical support, log on to Hitachi Data Systems Support Connect for contact information: https://support.hds.com/en_us/contact-us.html.

Hitachi Data Systems Community is a global online community for HDS customers, partners, independent software vendors, employees, and prospects. It is the destination to get answers, discover insights, and make connections. **Join the conversation today!** Go to community.hds.com, register, and complete your profile.

Comments

Please send us your comments on this document to doc.comments@hds.com. Include the document title and number, including the revision level (for example, -07), and refer to specific sections and paragraphs whenever possible. All comments become the property of Hitachi Data Systems Corporation.

Thank you!

1

Overview

Storage Advisor is a unified software management tool that reduces the complexity of managing storage systems by simplifying the setup, management, and maintenance of storage resources.

The Storage Advisor API is a REST (representational state transfer) interface for administrative tasks to manage storage resources.

- REST architecture
- API functionality and HTTP methods
- Privileges and roles
- Identifying a resource
- HTTP response
- Token management resources

REST architecture

REST is a style of software architecture that can be used with many message formats for web services.

REST uses the HTTP protocol along with a uniform resource identifier (URI) to identify a name of a web resource for requests from the client.

Storage Advisor REST API provides a non-GUI interface to storage management operations. It supports JSON requests and responses only.

API functionality and HTTP methods

Supported HTTP methods

HTTP defines a set of methods that define the actions that can be performed on a resource.

The API supports the following HTTP methods:

Method	Description
GET	Retrieves information about an individual resource or retrieves a list of resources of a given type. GET is a synchronous operation. Synchronous operations return a response message with information for the given resource. All GET API calls support filtered queries. The GET jobs API has a searching and sorting structure: https://ipAddress/v1/jobs?q=query&sort=sorting (where everything after the "?" is optional). Here are a few examples: • GET jobs with a specific username: https://ipAddress/v1/jobs?q=user:username • GET jobs with tags: https://ipAddress/v1/jobs/tags?q=tag:server) • GET jobs with ascending sorting of startDate: https://ipAddress/v1/jobs?sort=startDate:asc • GET calls can be combined: https://ipAddress/v1/jobs?q=user:username&sort=startDate:asc. This call searches for jobs with user = username and sorts them in ascending order by startDate • Filters may also be combined with each other using AND or OR operators, and ranges of numbers can be specified using TO: https://ipAddress/v1/jobs?q=(status:(IN_PROGRESS OR SUCCESS) AND startDate:[now-1d TO now])
POST	Adds (creates) and updates a resource. You need to provide values for all of the attributes of a resource that do not have default values. To override a default value, include the attribute and provide an override value for that attribute in the request body. POST operations that are asynchronous, return a response message with information about the status and job of the request. POST operations on resources in Storage Advisor are asynchronous with the following exceptions. These operations are synchronous and the response that is returned is a response message with only a HTTP status code.

Method	Description
	• File storage management resources • Account domain resources • Role mapping resources • Token resources • Fabric switch resources
PATCH	The PATCH method applies partial modifications to a resource.
DELETE	Deletes a resource. DELETE operations that are asynchronous, return a response message with information about the status and job of the request. DELETE operations on resources in Storage Advisor are an asynchronous operation with the following exceptions. These operations are synchronous and the response that is returned is a response message with only a HTTP status code. • File storage management resources • Account domain resources • Role mapping resources • Token resources • Fabric switch resources

Privileges and roles

Access to the storage system is restricted by roles. Roles determine what a user can and cannot do. The security administrator can grant access to users by assigning users roles with privileges that are attached to those specific roles.

Roles	Privileges
System administrator	• Addition, administration, and deletion of servers, storage system, and fabric switches, SNMP manager, and tier management. • Addition, administration, and deletion of parity groups and port configurations. • Addition, administration, and deletion of virtual file server resource groups. • Read-only privileges to monitor everything in Storage Advisor.
Storage administrator	• Addition, administration, and deletion of pools. • Addition, administration, and deletion of volumes, including creating, attaching to hosts, and data protection. • Read-only privileges to monitor everything in Storage Advisor.
Security administrator	• Addition, administration and deletion of remote account domains. • User role assignment to groups. • Read-only privileges to monitor everything in Storage Advisor.

Identifying a resource

The REST API allows you to manage and configure resources on the storage system including common storage systems, disks, parity groups, pool, volumes, ports, and tiers.

To identify a resource you want to manage, enter a resource domain URL in a web browser. All URLs for Storage Advisor API have the following base or root, uniform resource identifier (URI):

`https://management-server/v1`

where:

management-server is the virtual IP address or resolvable management server name of Storage Advisor.

For example, you can use the following URI to display a list of servers and details for each server.

`https://172.17.35.70/v1/compute/servers`

Each resource (URI) can only be accessed by users with correct privileges. Privileges are inherited based on the roles that are assigned to users.

HTTP response

When an HTTP request is sent, the server sends back an HTTP response message. The HTTP response message consists of an HTTP header and optional message body. Within the response header is the HTTP status code. The HTTP status code provides a status of the request. The following table contains a list of returned status codes, descriptions, and the type of HTTP request that can generate the status code.

Status code	HTTP name	Description
200	OK	Success.
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
204	No content	The request was successful, but the response does not exist.

Status code	HTTP name	Description
400	Bad request	Required HTTP header was not specified.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
404	Not found	The specified storage system ID is not valid or the storage system does not exist.
409	Conflict	The specified resource type does not match the existing resource type.
412	Precondition failed	The server does not meet one of the preconditions that the requester put in the request.
503	Service unavailable	The server is currently unable to receive requests. Retry your request.
504	Gateway timeout	The request timed out waiting for a response. The Storage Advisor is not able to connect to the node.

Token management resources

Request	Method	URI	Role
Generating a security token on page 20	POST	/v1/security/tokens	Storage administrator System administrator Security administrator
Getting a token on page 21	GET	/v1/security/tokens	Storage administrator System administrator

Request	Method	URI	Role
			Security administrator
Creating a token on page 23	POST	/v1/security/tokens	Storage administrator System administrator Security administrator
Deleting a token on page 25	DELETE	/v1/security/tokens	Storage administrator System administrator Security administrator

Generating a security token

Use this procedure to generate a security token.

A security token is required to access the REST API.

Before you begin

- Prepare your client to make REST calls.
- Add a new header with the following keys:
  - Authorization: set the value for this key as the user name and password.
  - Content-Type: set the value for this key as application/json

Procedure

1. Log in to Hitachi Storage Advisor.
2. In the same browser window, log in to the REST API client.
3. Enter the following to generate the security token:

   ```
   POST https://ipAddress/v1/security/tokens
   username <sysadmin>
   password <sysadmin>
   ```

   The system responds with the security token that you need to access the REST API.
4. From the returned response headers, copy the value of X-Auth-Token.
5. Create a new header with the key X-Auth-Token, and set the value to `<copied X-Auth-Token value>`. The generated token is used in successive REST API calls by adding X-Auth-Token in the header of the REST API and setting the value to `<copied X-Auth-Token value>`, which is the generated value from the preceding POST call.

Getting a token

You can get a security token. If not used, the token expires in 1200 seconds, if it is used for a REST call the expiry timer resets. A new token must be acquired after the current one expires.

HTTP request syntax (URI)

`GET https://ipAddress/v1/security/tokens`

The token is passed back in the header.

Request structure

Not applicable.

Response structure

```
{
"token":{
"issuedAt":"",
"expiresAt":"",
"tenantId":"",
"user":{
"name":"",
"domain":,
"roles":[
{
"name":""
},
],
"providerId":""
},
"_links":{
"self":{
"href":""
}
}
}
}
```

Parameter	Type	Description
issuedAt	String	Date the token was issued.
expiresAt	String	Date the token expires.
tenantId	Integer	ID number of the service catalog with services activated for the user. Default is `0` for all services.
name	String	The user name that is being used to access the domain.
domain	String	The name or address of the domain.
roles	String	Roles determine what a user can and cannot do. The security administrator assigns users specific roles.

Parameter	Type	Description
providerId	Integer	ID of the authentication provider.

Return codes

Status code	HTTP name	Description
200	OK	Success.
204	No content	The request was successful, but the response does not exist.
400	Bad request	Required HTTP header was not specified.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
412	Precondition failed	The server does not meet one of the preconditions that the requester put in the request.
503	Service unavailable	The server is currently unable to receive requests. Retry your request.
504	Gateway timeout	The request timed out waiting for a response. The Storage Advisor is not able to connect to the node.

Request example

```
GET https: //172.17.64.116/v1//security/tokens
```

Response example

```
{
"token":{
"issuedAt":"2016-04-19T20:56:19Z",
"expiresAt":"2016-04-19T21:16:19Z",
"tenantId":"0",
"user":{
"name":"sysadmin",
"domain":null,
"roles":[
{
```

```
"name":"ROLE_SECURITY_ADMIN"
},
{
"name":"ROLE_STORAGE_ADMIN"
},
{
"name":"ROLE_SYSTEM_ADMIN"
}
],
"providerId":"57503d78-3294-44c6-8c8a-08edd38a08be"
},
"_links":{
"self":{
"href":"https://10.20.91.115:80/v1/tokens"
}
}
}
}
```

Creating a token

You can create a security token. The expiration time for the generated token is 1200 seconds.

HTTP request syntax (URI)

`POST https://`*`ipAddress`*`/v1/security/tokens`

The token is generated and passed back in the header.

Request structure

Not applicable.

Response structure

```
{
"token":{
"issuedAt":"",
"expiresAt":"",
"tenantId":"",
"user":{
"name":"",
"domain":,
"roles":[
{
"name":""
},
],
"providerId":""
},
"_links":{
"self":{
"href":""
}
}
```

```
}
}
```

Parameter	Type	Description
issuedAt	String	Date the token was issued.
expiresAt	String	Date the token expires.
tenantId	Integer	ID number of the service catalog with services activated for the user. Default is `0` for all services.
name	String	The user name that is being used to access the domain.
domain	String	The name or address of the domain.
roles	String	Roles determine what a user can and cannot do. The security administrator assigns users specific roles.
providerId	Integer	ID of the authentication provider.

Return codes

Status code	HTTP name	Description
200	OK	Success.
204	No content	The request was successful, but the response does not exist.
400	Bad request	Required HTTP header was not specified.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
409	Conflict	The specified resource type does not match the existing resource type.
412	Precondition failed	The server does not meet one of the preconditions that the requester put in the request.
503	Service unavailable	The server is currently unable to receive requests. Retry your request.
504	Gateway timeout	The request timed out waiting for a response. The Storage Advisor is not able to connect to the node.

Request example

```
POST https: //172.17.64.116/v1//security/tokens
```

Response example


```
{
"token":{
"issuedAt":"2016-04-19T20:56:19Z",
"expiresAt":"2016-04-19T21:16:19Z",
"tenantId":"0",
"user":{
"name":"sysadmin",
"domain":null,
"roles":[
{
"name":"ROLE_SECURITY_ADMIN"
},
{
"name":"ROLE_STORAGE_ADMIN"
},
{
"name":"ROLE_SYSTEM_ADMIN"
}
],
"providerId":"57503d78-3294-44c6-8c8a-08edd38a08be"
},
"_links":{
"self":{
"href":"https://10.20.91.115:80/v1/tokens"
}
}
}
}
```


Deleting a token

You can delete a security token before it expires.

HTTP request syntax (URI)

```
DELETE https://ipAddress/v1/security/tokens
```

Request structure

Not applicable.

Response structure

Not applicable.

Return codes

Status code	HTTP name	Description
200	OK	Success.
204	No content	The request was successful, but the response does not exist.
400	Bad request	Required HTTP header was not specified.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
409	Conflict	The specified resource type does not match the existing resource type.
412	Precondition failed	The server does not meet one of the preconditions that the requester put in the request.
503	Service unavailable	The server is currently unable to receive requests. Retry your request.
504	Gateway timeout	The request timed out waiting for a response. The Storage Advisor is not able to connect to the node.

2

Block storage management resources

This module describes the block storage management operations.

- Storage system management
- Disk management
- Parity group management resources
- Pool management resources
- Volume management resources
- Port management resources
- Tier management resources

Storage system management

Request	Method	URI	Role
Listing storage systems on page 28	GET	/v1/storage-systems	Storage administrator System administrator Security administrator
Getting a storage system on page 31	GET	/v1/storage-systems/*storageSystemId*	Storage administrator System administrator Security administrator
Getting storage systems summary on page 34	GET	/v1/storage-systems/summary	Storage administrator System administrator Security administrator
Getting storage system license information on page 36	GET	/v1/storage-systems/*storageSystemId*/settings/licenses	Storage administrator System administrator Security administrator
Adding a storage system on page 37	POST	/v1/storage-systems	System administrator
Updating a storage system on page 39	POST	/v1/storage-systems/*storageSystemId*	System administrator
Deleting a storage system on page 41	DELETE	/v1/storage-systems/*storageSystemId*	System administrator

Listing storage systems

You can display a list of all storage systems.

HTTP request syntax (URI)

`GET https://ipAddress/v1/storage-systems`

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
    "resources": [
        {
            "storageSystemId": "",
            "storageSystemName": "",
            "accessible": ,
            "model": "",
            "svpIpAddress": "",
            "gum1IpAddress": "",
            "gum2IpAddress": "",
            "unified": ,
            "firmwareVersion": "",
            "horcmVersion": "",
            "cacheCapacity": "",
            "totalUsableCapacity": "",
            "allocatedToPool": "",
            "unallocatedToPool": "",
            "usedCapacity": "",
            "availableCapacity": "",
            "subscribedCapacity": "",
            "unusedDisks": ,
            "unusedDisksCapacity": "",
            "statusMessage":,
            "gadSummary": ""
        }
    ],
...
    "total": ,
    "nextToken":
}
```

Parameter	Type	Description
storageSystemId	String	The ID of the storage system (serial number).
storageSystemName	String	The name of the storage system.
accessible	Boolean	The status of the storage system indicating whether the storage system is available with Storage Advisor. If accessible = TRUE, the storage system can be managed with Storage Advisor. If accessible = FALSE, storage system cannot be managed with Storage Advisor. This happens when the storage system is first onboarded and the system is initializing the cache details.
model	String	The storage system model.
svpIpAddress	String	The IP address of the service processor (SVP) of the storage system.
gum1IpAddress	String	The IP address of the maintenance utility controller 1. For VSP G1000 storage systems, the gum IP address is the IP address of the service processor (SVP).
gum2IpAddress	String	The IP address of the maintenance utility controller 2.

Parameter	Type	Description
unified	Boolean	Whether or not the storage system includes NAS modules. If included, they can be configured and managed by Storage Advisor.
firmwareVersion	String	The firmware version of the storage system.
horcmVersion	String	The HORCM version of the storage system.
cacheCapacity	Long	The cache capacity in the storage system.
totalUsableCapacity	Long	The total usable capacity in the storage system. This is the sum of all parity group capacities in the system.
allocatedToPool	Long	The sum of all the pool capacities in the system.
unallocatedToPool	Long	The capacity available to create pools in the system. This is the difference between totalUsableCapacity and allocatedToPool.
usedCapacity	Long	The sum of all used capacities in all the pools in the system.
availableCapacity	Long	The available capacities in all pools in the system. This is the difference between allocatedToPool and usedCapacity.
subscribedCapacity	Long	This is the overall capacity of all created volumes that are available in the storage pools of the storage system.
unusedDisks	Integer	The number of disks unused in the storage system, such as disks that are not allocated as hot spare disk and not used for parity group creation.
unusedDisksCapacity	Long	The unused disk capacity in the storage system.
statusMessage	String	Displays errors that may occur while adding a storage system ; null indicates no errors.
gadSummary	String	The status of GAD. Values are: **1.** Incomplete **2.** Not Available **3.** Complete
total	Integer	Total number of resources.
nextToken	String	The API will return up to 100 resources with one call. This parameter is used for pagination when there are more than 100 resources in the system. At the bottom of the returned response is a link to another GET call you can make to retrieve the next page of resources. Copy the href link that includes the next token and paste it in your Storage Advisor browser.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.

Status code	HTTP name	Description
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource does not exist.

Request example

Request with JSON command:

```
https://172.17.64.118/v1/storage-systems
```

JSON Response:

```
{
    "resources":
    [
        {
                "storageSystemId": "10139",
                "storageSystemName": "R800#5 M14",
                "accessible": true,
                "model": "VSP G1000",
                "svpIpAddress": "10.145.24.12",
                "gum1IpAddress": "10.145.24.12",
                "gum2IpAddress": "10.145.24.12",
                "unified": false,
                "firmwareVersion": "80-04-21/00",
                "horcmVersion": "01-37-03/04",
                "cacheCapacity": 457950887936,
                "totalUsableCapacity": 64537921323008,
                "allocatedToPool": 10358076997632,
                "unallocatedToPool": 54179844325376,
                "usedCapacity": 0,
                "availableCapacity": 10358076997632,
                "subscribedCapacity": 58862862336,
                "unusedDisks": 0,
                "unusedDisksCapacity": 0,
                "statusMessage": null,
                "gadSummary": "Not Available"
            }
                                    ...
    ],
    "total": 4
    "nextToken": null
}
```

Getting a storage system

You can display detailed information for a specific storage system.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/storage-systems/storageSystemId
```

Use the storage system ID as the *storageSystemId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
        "storageSystemId": "",
        "storageSystemName": "",
        "accessible": ,
        "model": "",
        "svpIpAddress": "",
        "gum1IpAddress": "",
        "gum2IpAddress": "",
        "unified": ,
        "firmwareVersion": "",
        "horcmVersion": "",
        "cacheCapacity": "",
        "totalUsableCapacity": "",
        "allocatedToPool": "",
        "unallocatedToPool": "",
        "usedCapacity": "",
        "availableCapacity": "",
        "subscribedCapacity": "",
        "unusedDisks": ,
        "unusedDisksCapacity": "",
        "statusMessage":
  }
```

Parameter	Type	Description
storageSystemId	String	The ID of the storage system (serial number).
storageSystemName	String	The name of the storage system.
accessible	Boolean	The status of the storage system indicating whether the storage system is available with Storage Advisor. If accessible = TRUE, the storage system can be managed with Storage Advisor. If accessible = FALSE, storage system cannot be managed with Storage Advisor. This happens when the storage system is first onboarded and the system is initializing the cache details.
model	String	The storage system model.
svpIpAddress	String	The IP address of the service processor (SVP) of the storage system.
gum1IpAddress	String	The IP address of the maintenance utility controller 1. For VSP G1000 storage systems, the gum IP address is the IP address of the service processor (SVP).
gum2IpAddress	String	The IP address of the maintenance utility controller 2.
unified	Boolean	Whether or not the storage system includes NAS modules. If included, they can be configured and managed by Storage Advisor.

Parameter	Type	Description
firmwareVersion	String	The firmware version of the storage system.
horcmVersion	String	The HORCM version of the storage system.
cacheCapacity	Long	The cache capacity in the storage system.
totalUsableCapacity	Long	The total usable capacity in the storage system. This is the sum of all parity group capacities in the system.
allocatedToPool	Long	The sum of all the pool capacities in the system.
unallocatedToPool	Long	The capacity available to create pools in the system. This is the difference between totalUsableCapacity and allocatedToPool.
usedCapacity	Long	The sum of all used capacities in all the pools in the system.
availableCapacity	Long	The available capacities in all pools in the system. This is the difference between allocatedToPool and usedCapacity.
subscribedCapacity	Long	This is the overall capacity of all created volumes that are available in the storage pools of the storage system.
unusedDisks	Integer	The number of disks unused in the storage system, such as disks that are not allocated as hot spare disk and not used for parity group creation.
unusedDisksCapacity	Long	The unused disk capacity in the storage system.
statusMessage	String	The storage system status; null indicates no errors.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource does not exist.

Example

Request with JSON command:

```
https://172.17.64.108/v1/storage-systems/410117
```

JSON Response:

```
{
        "storageSystemId": "10139",
        "storageSystemName": "R800#5 M14",
        "accessible": true,
        "model": "VSP G1000",
```

```
        "svpIpAddress": "10.145.24.12",
        "gum1IpAddress": "10.145.24.12",
        "gum2IpAddress": "10.145.24.12",
        "unified": false,
        "firmwareVersion": "80-04-21/00",
        "horcmVersion": "01-37-03/04",
        "cacheCapacity": 457950887936,
        "totalUsableCapacity": 64537921323008,
        "allocatedToPool": 10358076997632,
        "unallocatedToPool": 54179844325376,
        "usedCapacity": 0,
        "availableCapacity": 10358076997632,
        "subscribedCapacity": 58862862336,
        "unusedDisks": 0,
        "unusedDisksCapacity": 0,
        "statusMessage": null
    }
```

Getting storage systems summary

You can display a report of all storage systems in Storage Advisor.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/storage-systems/summary
```

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
        "totalUsableCapacity": "",
        "allocatedToPool": "",
        "unallocatedToPool": "",
        "usedCapacity": "",
        "availableCapacity": "",
        "subscribedCapacity": "",
        "storageSystemCount":
        "tierSummaryItems":
        [
            {
                "tierName": "",
                "totalCapacity": "",
                "freeCapacity": ""
            },
            ...
        ]
 }
```

Parameter	Type	Description
subscribedCapacity	String	This is the overall capacity of all created volumes that are available in the storage pools of the storage system.
totalUsableCapacity	String	The total usable capacity of all storage systems. This is the sum of all parity group capacities in all systems.
allocatedToPool	String	The sum of all pool capacities in all storage systems.
unallocatedToPool	String	The capacity available to create pools in the system. This is the difference between totalUsableCapacity and allocatedToPool.
storageSystemCount	Integer	Storage system count.
availableCapacity	String	The available capacities in all pools. This is the difference between totalUsableCapacity and usedCapacity.
usedCapacity	String	The sum of all used capacity in all the pools across all storage systems.
tierSummaryItems	List	List of the tier items.
tierName	String	The name of the tier.
totalCapacity	String	Total capacity of the specified pool type in the storage system, in bytes.
freeCapacity	String	Capacity available, in bytes.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource does not exist.

Request example

```
https://172.17.64.116/v1/storage-systems/summary
```

JSON response

```
{
    "totalUsableCapacity": "288965590974464",
```

```
            "allocatedToPool": "152762169950208",
            "unallocatedToPool": "136203421024256",
            "usedCapacity": "333428293632",
            "availableCapacity": "152428741656576",
            "subscribedCapacity": "1311474974720",
            "storageSystemCount": 4,
            "tierSummaryItems":
            [
                {
                    "tierName": "External",
                    "totalCapacity": "9907297124352",
                    "freeCapacity": "9907297124352"
                },
                ...
            ]
        }
```

Getting storage system license information

You can display the license keys for the software features that are enabled on the storage system.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/storage-systems/storageSystemId/
settings/licenses
```

Use the storage system ID as the *storageSystemId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "storageSystemId": "",
  "licenseSettings": [
    {
     "productName": "",
     "installed": ,
     "licenseCapacity": {
        "permitted": {
          "unlimited": ,
          "value":
          },
          "usedCapacity": ""
     }
 ]
}
```

Parameter	Type	Description
storageSystemId	String	ID of the storage system.
productName	String	Name of the software application.
installed	Boolean	Whether or not a permanent license is installed.
licenseCapacity	Object	License permitted and used capacity.
usedCapacity	String	Sum of used capacity across all pools of the specified type in the storage system, in bytes.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Adding a storage system

You can add a storage system. If the storage system includes NAS modules, the file storage is automatically added with the block storage.

HTTP request syntax (URI)

```
POST https://ipAddress/v1/storage-systems
```

Request structure

The request body structure is shown below:

```
{
  "password": "",
  "username": "",
  "svpIpAddress": ""
}
```

Parameter	Required	Type	Description
password	Yes	String	Password used to connect to the SVP of the storage system.
username	Yes	String	User name to connect to the service processor (SVP) of the storage system.
svpIpAddress	Yes	String	The IP address of the SVP.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.

Parameter	Type	Description
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource does not exist.

Updating a storage system

You can modify the credentials that are used to manage a storage system in Storage Advisor and you can modify the storage system name.

HTTP request syntax (URI)

`POST https://`*`ipAddress`*`/v1/storage-systems/`*`storageSystemId`*

Use the storage system ID as the *storageSystemId*.

Request structure

The request body structure is shown below:

```
{
  "password": "",
  "username": ""
  "storageSystemName": ""
}
```

Parameter	Required	Type	Description
password	Yes*	String	Password used to connect to the SVP of the storage system.
username	Yes*	String	User name that is used to connect to the service processor (SVP) of the storage system.
storageSystemName	Yes*	String	The name of the storage system.

* Execution requires storageSystemName or password and username, but not all three.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.

Parameter	Type	Description
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource does not exist.

Deleting a storage system

You can delete a storage system from Storage Advisor.

HTTP request syntax (URI)

```
DELETE https://ipAddress/v1/storage-systems/storageSystemId
```

Use the storage system ID as the *storageSystemId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.

Parameter	Type	Description
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
204	No content	The request was successful, but the response does not exist.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.

Disk management

Request	Method	URI	Role
Listing disks on page 44	GET	/v1/storage-systems/*storageSystemId*/disks	Storage administrator System administrator

Request	Method	URI	Role
			Security administrator
Getting disk details on page 46	GET	/v1/storage-systems/*storageSystemId*/disks/*diskId*	Storage administrator System administrator Security administrator
Updating disks on page 49	POST	/v1/storage-systems/*storageSystemId*/disks/*diskId*	System administrator

Listing disks

You can display a list of all disks in the storage system.

HTTP request syntax (URI)

`GET https://ipAddress/v1/storage-systems/storageSystemId/disks`

Use the storage system ID as the *storagesystemId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "resources": [
    {
      "diskId": "",
      "storageSystemId": "",
      "serialNumber": "",
      "location": "",
      "model": "",
      "capacityInBytes": ,
      "version": "",
      "speed": ,
      "type": "",
      "purpose": "",
      "parityGroupId": ""
    }
                ...
  ],
    "total": ,
    "nextToken":
}
```

Parameter	Type	Description
diskId	String	ID of the disk.
storageSystemId	String	ID of the storage system.
serialNumber	String	Serial number of the disk.
location	String	The location of the disk in the storage system.
model	String	Model of the disk.
capacityInBytes	Long	Total capacity, in bytes.
version	String	Version of the disk.
speed	Integer	The speed of the disk.
type	String	Disk type: one of the following values: • FMD DC2 - Flash Module Drive Data Compression • FMD - Flash Module Drive • SAS - Serial Attached SCSI • SSD - Solid State Drive
purpose	String	Disk utility: one of the following values: • DATA - disk is used in a parity group. • SPARE - hot spare disk. • DATA_SWAPPED - data disk which is switched from hot spare. • RESERVED - reserved, is not used for parity group creation. • FREE - the disk is available for parity group creation.
parityGroupId	String	ID of the parity group that the disk belongs to.
total	Long	Total number of resources.
nextToken	String	The API will return up to 100 resources with one call. This parameter is used for pagination when there are more than 100 resources in the system. At the bottom of the returned response is a link to another GET call you can make to retrieve the next page of resources. Copy the href link that includes the next token and paste it in your Storage Advisor browser.

Return codes

Status code	HTTP name	Description
200	OK	Success.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.

Status code	HTTP name	Description
404	Not found	The specified resource does not exist.

Example request

Request with JSON command:

```
https://172.17.64.116/v1/storage-systems/410209/disks
```

Example response

JSON response:


```
{
    "resources":
    [
        {
            "diskId": "6XN8GGEK0000M533SVKB",
            "storageSystemId": "410209",
            "serialNumber": "6XN8GGEK0000M533SVKB",
            "location": "HDD02-00",
            "model": "DKS5C-K300SS",
            "capacityInBytes": 288196762112,
            "version": "7F-55",
            "speed": 15000,
            "type": "SAS",
            "purpose": "DATA",
            "parityGroupId": "1-1"
        },
        ...
                ],
    "total": 72,
    "nextToken": null
}
```


Getting disk details

You can display details about a specific disk in the storage system.

HTTP request syntax (URI)

GET https://*ipAddress*/v1/storage-systems/*storageSystemId*/disks/*diskId*

Use the storage system number as the *storageSystemId*.

Use the ID of the disk as the *diskId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "diskId": "",
  "storageSystemId": "",
  "serialNumber": "",
  "location": "",
  "model": "",
  "capacityInBytes": ,
  "version": "",
  "speed": ,
  "type": "",
  "purpose": "",
  "parityGroupId":
}
```

Parameter	Type	Description
storageSystemId	String	ID of the storage system.
speed	Integer	The speed of the disk.
capacityInBytes	String	The capacity of disk.
diskId	String	ID of the disk.
parityGroupId	String	ID of the parity group that the disk belongs to.
purpose	String	Disk utility: one of the following values: • DATA - disk is used in a parity group. • SPARE - hot spare disk. • DATA_SWAPPED - data disk which is switched from hot spare. • RESERVED - reserved, is not used for parity group creation. • FREE - the disk is available for parity group creation.
model	String	Model of the disk.
serialNumber	String	Serial number of the disk.
version	String	Version of the disk.
location	String	The location of the disk in the storage system.
type	String	Disk type: one of the following values: • FMC DC2 - Flash Module with compression support • FMD - Flash Module Drive • SAS - Serial Attached SCSI • SSD - Solid State Drive

Return codes

Status code	HTTP name	Description
200	OK	Success.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource does not exist.

Example request

Request with JSON command:

```
https://172.17.64.116/v1/storage-systems/410209/disks/
6XN8GGEK0000M533SVKB
```

Example response

JSON response:

```
{
    "disks":
    [
        {
            "diskId": "6XN8GGEK0000M533SVKB",
            "storageSystemId": "410209",
            "serialNumber": "6XN8GGEK0000M533SVKB",
            "location": "HDD02-00",
            "model": "DKS5C-K300SS",
            "capacityInBytes": 288196762112,
            "version": "7F-55",
            "speed": 15000,
            "type": "SAS",
            "purpose": "DATA",
            "parityGroupId": "1-1"
        },
        ...
        },
                ]
}
```

Updating disks

You can update the disks in a storage system to reserve a disk as a hot spare. You can not update disks for VSP G1000 storage systems.

HTTP request syntax (URI)

`POST https://`*`ipAddress`*`/v1/storage-systems/`*`storageSystemId`*`/disks/`*`diskId`*

Use the storage system ID as the *storagesystemId*.

Use the ID of the disk as the *diskId*.

Request structure

The request body structure is shown below:

```
{
  "hotSpare": ""
}
```

Parameter	Required	Type	Description
hotSpare	Yes	String	Whether a disk is reserved as a spare: Specify `Yes` to reserve a free data disk as a Hot Spare. Specify `No` to set a spare disk as a data disk and make it available for use in parity groups.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
```

```
            "href": "/v1/jobs/jobId"
        }
    ],
    "tags":
    [
    ],
    "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the

Status code	HTTP name	Description
		processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource does not exist.

Parity group management resources

The following are parity group and parity group template APIs:

Request	Method	URI	Role
Listing parity groups on page 52	GET	/v1/storage-systems/*storageSystemId*/parity-groups	Storage administrator System administrator Security administrator
Getting a parity group in a storage system on page 56	GET	/v1/storage-systems/*storageSystemId*/parity-groups/*parityGroupId*	Storage administrator System administrator Security administrator
Listing parity groups summary on page 59	GET	/v1/storage-systems/*storageSystemId*/parity-groups/summary	Storage administrator System administrator Security administrator
Listing external parity groups on page 61	GET	/v1/storage-systems/*storageSystemId*/external-parity-groups	Storage administrator System administrator Security administrator
Getting a specific external parity group in a storage system on page 63	GET	/v1/storage-systems/*storageSystemId*/external-parity-groups/*parityGroupId*	Storage administrator System administrator

Request	Method	URI	Role
			Security administrator
Listing external parity groups summary on page 64	GET	/v1/storage-systems/*storageSystemId*/external-parity-groups/ summary	Storage administrator System administrator Security administrator
Creating a parity group on page 66	POST	/v1/storage-systems/*storageSystemId*/parity-groups	System administrator
Enabling compression on a parity group on page 70	POST	/v1/storage-systems/*storageSystemId*/parity-groups/*parityGroupId*/compress	System administrator
Initializing a parity group on page 72	POST	/v1/storage-systems/*storageSystemId*/parity-groups/*parityGroupId* /initialize	System administrator
Deleting a parity group on page 75	DELETE	/v1/storage-systems/*storageSystemId*/parity-groups/*parityGroupId*	System administrator

The following are parity group template APIs:

Request	Method	URI	Role
Getting parity group template on page 78	GET	/v1/storage-systems/*storageSystemId*/templates/parity-group	Storage Administrator System Administrator Security Administrator
Creating parity group template on page 81	POST	/v1/storage-systems/*storageSystemId*/templates/parity-group	System Administrator

Listing parity groups

You can display a list of all parity groups in a storage system.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/storage-systems/storageSystemId/parity-groups
```

Use the storage system ID as the *storageSystemId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
    "resources":
    [
        {
            "parityGroupId": "",
            "storageSystemId": "",
            "raidLevel": "",
            "raidLayout": "",
            "diskSpec":
            {
                "type": "",
                "speed": ,
                "capacityInBytes":
            },
            "totalCapacityInBytes": ,
            "uninitializedCapacityInBytes": ,
            "availableCapacityInBytes": ,
            "physicalCapacityInBytes": ,
            "status": "",
            "encryption": ,
            "compression":,
            "nasBoot":
        }
                                ...
   ],
    "total": ,
    "nextToken":
}
```

Parameter	Type	Description
resources	List	List of parity groups in a storage system.
Id	String	ID of the parity group.
storageSystemId	String	ID of the storage system.
raidLevel	String	RAID level. Valid values: RAID1+0, RAID5, or RAID6.
raidLayout	String	RAID layout. This RAID layout should be of the specified RAID level. Valid values: For Gx00: • RAID1+0 - (2D+2D) • RAID5 - (3D+1P),(4D+1P),(6D+1P)& (7D +1P) • RAID6 – (6D+2P),(14D+2P),(12D+2P) For VSP G1000, G1500, F1500: • RAID5- (3D+1P),(7D+1P)

Parameter	Type	Description
		• RAID6 –(6D+2P),(14D+2P) • RAID1+0 – (2D+2D), (2D+2D)x2
diskSpec	DiskSpec	Disk type, speed, and capacity of the disks that are used to create the parity group.
type	String	Type of disk, such as FMD, FMD DC2, SSD, or SAS.
speed	Integer	Speed of the disk, measured in revolutions per minute.
capacityInBytes	Long	Total capacity, in bytes.
totalCapacityInBytes	Long	Total capacity of the parity group.
uninitializedCapacityInBytes	Long	Free capacity that can be initialized.
availableCapacityInBytes	Long	The capacity of unused volumes in the parity group that can be used for the pool.
physicalCapacityinBytes	Long	Available physical capacity of a parity group, in bytes.
status	String	Status of the parity group: • In Use - The parity group is being used by a storage pool. • Available - The parity group is not being used for any storage pools. It is available for pool creation. • Available_Physical - The parity group is not being used for any storage pools. Compression is enabled on the parity group and physical capacity of the parity group is available for pool creation. Not applicable to parity groups that are not enabled for compression. • Uninitialized - The parity group either has no volumes, at least one of the pool volumes is in Blocked status, or one or more partitions is uninitialized and has a size greater than 16,787,456 blocks. • Quick_Formatting - The time taken by the service processor to format the pool volumes in the parity groups. To make the formatting process quick, the drive is not fully checked, the files are still there, and the volume could be re-built to gain access to the files again. • Formatting - The full format takes longer than a quick format because the service processor fully scans the hard drive. • Unsupported_Attached - At least one of volumes has a path to a storage port or volumes are used for multiple pools. • Unsupported_Inaccessible_Resource_Group - The parity group and at least one of its pool volumes are in different resource groups and the user does not have access to one of the resource groups when using SN2/HCS.

Parameter	Type	Description
encryption	Boolean	Whether or not the data is encrypted.
compression	Boolean	Whether or not the data is compressed. Accelerated compression is only supported on FMD DC2 drives.
nasBoot	Boolean	Whether a parity group consists of NAS boot volumes. Values are TRUE or FALSE.
total	Long	Total number of resources.
nextToken	String	The API will return up to 100 resources with one call. This parameter is used for pagination when there are more than 100 resources in the system. At the bottom of the returned response is a link to another GET call you can make to retrieve the next page of resources. Copy the href link that includes the next token and paste it in your Storage Advisor browser.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.109/v1/storage-systems/410209/parity-groups
```

JSON response:


```
{
    "resources":
    [
        {
            "parityGroupId": "1-1",
            "storageSystemId": "410209",
            "raidLevel": "RAID5",
            "raidLayout": "3D+1P",
            "diskSpec":
            {
                "type": "SAS",
                "speed": 10000,
```

```
                    "capacityInBytes": 576393524736
                },
                "totalCapacityInBytes": 1729179942912,
                "uninitializedCapacityInBytes": 4718592,
                "availableCapacityInBytes": 1729179942912,
                "physicalCapacityInBytes": 5277649993728,
                "status": "AVAILABLE",
                "encryption": false,
                "compression": false,
                "nasBoot": true
            }
                                                ...
      ],
    "total": 12,
    "nextToken": null
      }
```


Getting a parity group in a storage system

You can view detailed information about a specific parity group in a storage system.

HTTP request syntax (URI)

`GET https://`*`ipAddress`*`/v1/storage-systems/`*`storageSystemId`*`/parity-groups/`*`parityGroupId`*

Use the storage system ID as the *storageSystemId*.

Use the parity group ID as the *parityGroupId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:


```
{
        "parityGroupId": "",
        "storageSystemId": "",
        "raidLevel": "",
        "raidLayout": "",
        "diskSpec":
        {
            "type": "",
            "speed": ,
            "capacityInBytes":
        },
        "totalCapacityInBytes": ,
        "uninitializedCapacityInBytes": ,
        "availableCapacityInBytes": ,
        "physicalCapacityInBytes": ,
        "status": "",
```

```
        "encryption": ,
        "compression": ,
        "nasBoot":
}
```

Parameter	Type	Description
Id	String	ID of the parity group.
storageSystemId	String	ID of the storage system.
raidLevel	String	RAID level. Valid values: RAID1+0, RAID5, or RAID6.
raidLayout	String	RAID layout. This RAID layout should be of the specified RAID level. Valid values: For Gx00: • RAID1+0 - (2D+2D) • RAID5 - (3D+1P),(4D+1P),(6D+1P)& (7D +1P) • RAID6 – (6D+2P),(14D+2P),(12D+2P) For VSP G1000, G1500, F1500: • RAID5- (3D+1P),(7D+1P) • RAID6 –(6D+2P),(14D+2P) • RAID1+0 – (2D+2D), (2D+2D)x2
diskSpec	DiskSpec	Disk type, speed, and capacity of the disks that are used to create the parity group.
type	String	Type of disk, such as FMD, FMD DC2, SSD, or SAS.
speed	Integer	Speed of the disk, measured in revolutions per minute.
capacityInBytes	Long	Total capacity, in bytes.
totalCapacityInBytes	Long	Total capacity of the parity group.
uninitializedCapacityInBytes	Long	Free capacity that is available to be initialized.
availableCapacityInBytes	Long	The capacity of unused volumes in the parity group that can be used for the pool.
physicalCapacityInBytes	Long	Available physical capacity of a parity group, in bytes.
status	String	Status of the parity group: • In Use - The parity group is being used by a storage pool. • Available - The parity group is not being used for any storage pools. It is available for pool creation. • Uninitialized - The parity group either has no volumes, at least one of the pool volumes is in Blocked status, or one or more partitions is uninitialized and has a size greater than 16,787,456 blocks. • Quick-Formatting - The time taken by the service processor to format the pool volumes in the parity groups. To make the formatting process quick, the drive is not fully checked,

Parameter	Type	Description
		the files are still there, and the volume could be re-built to gain access to the files again. • Formatting - The full format takes longer than a quick format because the service processor fully scans the hard drive. • Externalized - The parity groups assigned to the external storage system. • Unsupported_Attached - At least one of the volumes has a path to a storage port or volumes are used for multiple pools. • Unsupported_Inaccessible_Resource_Group - The parity group and at least one of its pool volumes are in different resource groups and the user does not have access to one of the resource groups when using SN2/HCS.
encryption	Boolean	Whether or not the data is encrypted.
compression	Boolean	Whether or not the data is compressed. Accelerated compression is only supported on FMD DC2 drives.
nasBoot	Boolean	Whether a pool consists of NAS boot volumes. Values are TRUE or FALSE.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.109/v1/storage-systems/410209/parity-
groups/1-9
```

Example response

```
{
        "parityGroupId": "1-9",
        "storageSystemId": "410209",
        "raidLevel": "RAID5",
        "raidLayout": "3D+1P",
```

```
        "diskSpec":
        {
            "type": "SAS",
            "speed": 7200,
            "capacityInBytes": "3916143603200"
        },
        "totalCapacityInBytes": 11748430577664,
        "uninitializedCapacityInBytes": 4718592,
        "availableCapacityInBytes": 0,
        "physicalCapacityInBytes": 5277649993728,
        "status": "IN_USE",
        "encryption": false,
        "compression": false
        "nasBoot": false
    }
```

Listing parity groups summary

You can display a summary of parity group items.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/storage-systems/storageSystemId/parity-groups/summary
```

Use the storage system ID as the *storageSystemId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
    "parityGroupSummaryItems":
    [
        {
            "diskType": "",
            "speed": "",
            "size": "",
            "tierName": "",
            "numberOfAvailableDisks": ,
            "numberOfExistingHotSpares": ,
            "totalCapacity": ,
            "totalFreeParityGroupCapacity": ,
            "numberOfParityGroups":
        },
    ...
    ]
}
```

Parameter	Type	Description
ParityGroupSummaryItems	List	List of parity group items in a storage system.
diskType	String	Type of disk, such as FMD DC2, FMD, SAS, or SSD.
speed	Integer	Speed of the disk, measured in revolutions per minute.
size	Long	Size of the volume, in bytes.
tierName	String	Custom name of the tier, such as Platinum, Gold, Silver, Bronze, or External.
numberOfAvailableDisks	Integer	The number of available disks for parity group creation.
numberOfExistingHotSpares	Integer	Based on best practices, the number of existing hot spare disks needed for the disk type.
totaCapacity	Long	Total capacity of all parity groups for the disk type.
totalFreeParityGroupCapacity	Long	Capacity available of all parity groups for the disk type.
numberOfParityGroups	Integer	The number of parity groups for the disk type.

Return codes

Status code	HTTP name	Description
200	OK	Success.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.111/v1/storage-systems/410209/parity-groups/summary
```

Example response


```
{
    "parityGroupSummaryItems":
    [
        {
            "diskType": "SAS",
            "speed": "7200",
            "size": "3916143603200",
            "tierName": "Bronze",
            "numberOfAvailableDisks": 3,
            "numberOfExistingHotSpares": 1,
            "totalCapacity": 11748425859072,
            "totalFreeParityGroupCapacity": 11748425859072,
            "numberOfParityGroups": 5
        },
   ...
   ]
}
```


Listing external parity groups

External parity groups are parity groups in a storage system that are connected to an onboarded storage system. The ability to view external parity groups helps manage multiple storage systems using a single storage system. You can display a list of external parity groups in a storage system that has been registered with Device Manager - Storage Navigator.

HTTP request syntax (URI)

`GET https://`*`ipAddress`*`/v1/storage-systems/`*`storageSystemId`*`/external-parity-groups`

Use the storage system ID as the *storageSystemId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:


```
{
  "resources": [
    {
      "externalParityGroupId": "",
      "storageSystemId": "",
      "availableCapacity": ,
      "capacity": ,
      "externalStorageSystemId": "",
      "externalStorageVendor": "",
      "externalStorageProduct": ""
```

```
    },
   ...
   ]
}
```

Parameter	Type	Description
resources	List	List of external parity groups in a storage system.
externalParityGroupId	String	ID of the parity group on external volumes.
storageSystemId	String	ID of the storage system.
availableCapacity	Long	Unused capacity of the resource, in bytes.
capacity	Long	Total capacity of the system drive, in bytes.
externalStorageSystemId	String	ID of the external storage system.
externalStorageVendor	String	Name of the external storage system.
externalStorageProduct	String	Model of the external storage system.

Return codes

Status code	HTTP name	Description
200	OK	Success.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example code

Request with JSON command:

```
https://172.17.64.109/v1/storage-systems/410209/external-parity-groups
```

JSON response:

```
{
  "resources": [
    {
      "externalParityGroupId": "1-1",
      "storageSystemId": "410209",
      "availableCapacity": 1729179942912,
```

```
        "capacity": 1729179942912,
        "externalStorageSystemId": "420007",
        "externalStorageVendor": "EMC",
        "externalStorageProduct": "Symmetrix"
      },
      ...
    ]
}
```

Getting a specific external parity group in a storage system

You can display detailed information about a specific external parity group in a storage system.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/storage-systems/storageSystemId/
external-parity-groups/externalParityGroupId
```

Use the storage system ID as the *storageSystemId*.

Use the external parity group ID as the *externalParityGroupId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
      "externalParityGroupId": "",
      "storageSystemId": "",
      "availableCapacity": "",
      "capacity": "",
      "externalStorageSystemId": "",
      "externalStorageVendor": "",
      "externalStorageProduct": ""
}
```

Parameter	Type	Description
externalParityGroupId	String	ID of the parity group on external volumes.
storageSystemId	String	ID of the storage system.
availableCapacity	Long	Unused capacity of the resource, in bytes.
capacity	Long	Total capacity of the system drive, in bytes.
externalStorageSystemId	String	ID of the external storage system.
externalStorageVendor	String	Name of the external storage system.
externalStorageProduct	String	Model of the external storage system.

Return codes

Status code	HTTP name	Description
200	OK	Success.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example code

Request with JSON command:

```
https://172.17.64.109/v1/storage-systems/410209/external-parity-groups/1-1
```

JSON response:

```
{
      "externalParityGroupId": "1-1",
      "storageSystemId": "410031",
      "availableCapacity": "1729179942912",
      "capacity": "1729179942912",
      "externalStorageSystemId": "420007",
      "externalStorageVendor": "EMC",
      "externalStorageProduct": "Symmetrix"
}
```

Listing external parity groups summary

You can display a summary of external parity groups.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/storage-systems/storageSystemId/external-parity-groups/summary
```

Use the storage system ID as the *storageSystemId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "totalCapacity": ,
  "totalFreeCapacity": ,
  "numberOfExternalParityGroups":
}
```

Parameter	Type	Description
totalCapacity	Long	Total capacity of all external parity groups available for a storage system.
totalFreeCapacity	Long	Free capacity of all external parity groups available for a storage system.
numberOfExternalParityGroups	Integer	The number of external parity groups.

Return codes

Status code	HTTP name	Description
200	OK	Success.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.109/v1/storage-systems/50101/external-parity-groups/summary
```

Response structure

```
{
  "totalCapacity": 2881966571520,
  "totalFreeCapacity": 2881966571520,
  "numberOfExternalParityGroups": 2
}
```

Creating a parity group

You can create a parity group with the requested RAID configuration by using the specified disks. Additionally, you can also create and format the logical device (LDEV) on the parity group, so that the parity group is ready for pool creation. You can not create parity groups on VSP G1000, VSP G1500, or VSP F1500 storage systems. To set encryption on the parity groups on VSP G1000, VSP G1500, or VSP F1500 storage systems, set it in Device Manager - Storage Navigator.

HTTP request syntax (URI)

`POST https://`*`ipAddress`*`/v1/storage-systems/`*`storageSystemId`*`/parity-groups`

You can only view an external parity group but you are not able to create it using the API.

Use the storage system ID as the *storageSystemId*.

Request structure

The request body structure is shown below:

```
{
    "diskIds":[""],
    "raidLevel":"",
    "raidLayout":"",
    "encryption":""
}
```

Parameter	Required	Type	Description
diskIds	Yes	Integer	List of diskIds that are used to create the parity group.
raidLevel	Yes	String	RAID level. Valid values: RAID0, RAID1, RAID1+0, RAID0+1, RAID2, RAID3, RAID4, RAID5, or RAID6.
raidLayout	Yes	String	The RAID layout of the specified RAID level. For Gx00: RAID1+0 - (2D+2D), RAID5 - (3D+1P),(4D+1P),(6D+1P)& (7D+1P), RAID6 - (6D+2P),(14D+2P),(12D+2P). For VSP G1000, VSP G1500, VSP F1500: RAID5- (3D+1P),(7D+1P) RAID6 -(6D+2P),(14D+2P) RAID1+0 - (2D+2D), (2D+2D)x2

Parameter	Required	Type	Description
encryption	No	Boolean	Whether or not the data is encrypted. To set an encryption on the parity group, set the encryption parameter to true.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
  {
      "text": "",
      "messageCode": "",
      "parameters":
      {
      }
  },
 "user": "",
 "status": "",
 "startDate": ,
 "endDate": ,
 "parentJobId": ,
 "reports":
 [
     {
          "reportMessage":
     {
             "text": "",
             "messageCode": "",
             "parameters":
             {
                 "fileSystemId": ""
             }
         },
         "severity": "",
         "creationDate":
    }
 ],
 "links":
 [
      {
        "rel": "_self",
        "href": "/v1/jobs/"
 }
 ],
 "tags":
 [
 ],
 "isSystem":
}
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the

Status code	HTTP name	Description
		processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

The request with JSON command:

```
{"diskIds": [ "PVKEAR6B", "PVKB5TLB", "PVK075SB",
"S0M1MR870000B422JRR6" ],
"raidLevel": "RAID5","raidLayout": "3D+1P","encryption": true}
```

Example request

```
https://172.17.64.109/storage-systems/410209/parity-groups
```

Example response

```
{
        "jobId": "cb01b71a-36f0-41ae-9060-2d82517eb858",
        "title":
        {
            "text": "Creating parity group",
            "messageCode": "CreateParityGroupJobTitleMessage",
            "parameters":
            {
            }
        },
        "user": "sysadmin",
        "status": "IN_PROGRESS",
        "startDate": 1455837568839,
        "endDate": null,
        "parentJobId": null,
        "reports":
        [
        ],
        "links":
        [
            {
                "rel": "_self",
```

```
                "href": "/v1/jobs/
cb01b71a-36f0-41ae-9060-2d82517eb858"
            }
        ],
        "tags":
        [
        ],
        "isSystem": false
    }
```

Enabling compression on a parity group

You can enable data compression on FMD DC2 disks to utilize more virtual capacity in a parity group than the actual usable capacity.

HTTP request syntax (URI)

```
POST https://ipAddress/v1/storage-systems/storageSystemId/parity-
groups/parityGroupId/compress
```

Use the storage system ID as the *storageSystemId*.

Use the parity group ID as the *parityGroupId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
```

```
    ],
    "tags":
    [
    ],
    "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.

Status code	HTTP name	Description
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example code

Request with JSON command:

```
https://172.17.64.109/v1/storage-systems/410209/parity-groups/1-9/compress
```

Initializing a parity group

You can create and initialize pool volumes on a parity group if the pool volumes have not been created. You can also format any pool volumes that are in the blocked state.

This API is supported only when the parity group status is available or uninitialized.

- The parity group status is `Uninitialized`. This occurs when the parity group has no volumes, at least one of the pool volumes is in Blocked state, or one or more partitions is uninitialized and has a size greater than 16,787,456 blocks.
- The parity group status is `Available` but the available capacity is much less than the total capacity. This occurs when the pool volumes on the parity group do not account for the entire parity group capacity and there are unused partitions on the parity group.

HTTP request syntax (URI)

`POST https://`*`ipAddress`*`/v1/storage-systems/`*`storageSystemId`*`/parity-groups/`*`parityGroupId`*`/initialize`

Use the storage system ID as the *storageSystemId*.

Use the parity group ID as the *parityGroupId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
  {
      "text": "",
      "messageCode": "",
      "parameters":
      {
      }
  },
 "user": "",
 "status": "",
 "startDate": ,
 "endDate": ,
 "parentJobId": ,
 "reports":
 [
     {
          "reportMessage":
     {
             "text": "",
             "messageCode": "",
             "parameters":
             {
                 "fileSystemId": ""
             }
         },
         "severity": "",
         "creationDate":
    }
 ],
 "links":
 [
      {
        "rel": "_self",
        "href": "/v1/jobs/"
 }
 ],
 "tags":
 [
 ],
 "isSystem":
}
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.

Parameter	Type	Description
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.

Status code	HTTP name	Description
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource does not exist.

Example request

```
https://172.17.64.108/v1/storage-systems/450439/parity-
groups/1-2/initialize
```

Example response

```
{
 "jobId": "a88bd309-fe36-4d68-b3b3-342d1edf20e8",
  "title": {
     "text": "Initialize parity group",
     "messageCode":
"InitializeParityGroupSystemJobPreTitleMessage",
     "parameters": {}
    },
  "user": "sysadmin",
  "status": "IN_PROGRESS",
  "startDate": 1452129643172,
  "endDate": null,
  "parentJobId": null,
  "reports": [],
  "links": [
      {
          "rel": "_self",
          "href": "/v1/jobs/a88bd309-fe36-4d68-
b3b3-342d1edf20e8"
        }
    ],
   "tags": [],
   "isSystem": false
}
```

Deleting a parity group

You can delete a parity group from a supported storage system except VSP G1000, VSP G1500, or VSP F1500. When you delete a parity group, the disks that are in the parity group are no longer in use. You can then remove the storage system or reconfigure the storage system with another RAID configuration.

HTTP request syntax (URI)

```
DELETE https://ipAddress/v1/storage-systems/storageSystemId/
parity-groups/parityGroupId
```

Use the storage system ID as the *storageSystemId*.

Use the parity group ID as the *parityGroupId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
        "jobId": "c2aba251-b4a5-44d1-a846-54d32c2c33ff",
        "title":
        {
            "text": "Delete parity group",
            "messageCode": "DeleteParityGroupJobTitleMessage",
            "parameters":
            {
            }
        },
        "user": "sysadmin",
        "status": "IN_PROGRESS",
        "startDate": 1455838105134,
        "endDate": null,
        "parentJobId": null,
        "reports":
        [
        ],
        "links":
        [
            {
                "rel": "_self",
                "href": "/v1/jobs/c2aba251-b4a5-44d1-
a846-54d32c2c33ff"
            }
        ],
        "tags":
        [
        ],
        "isSystem": false
    }
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.

Parameter	Type	Description
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
204	No content	The request was successful, but the response does not exist.
401	Unauthorized	The operation is not authorized.

Status code	HTTP name	Description
403	Forbidden	The server failed to authenticate the request.

Example request

```
https://172.17.64.109/v1/storage-systems/410209/parity-
groups/1-9
```

Example response


```
{
        "jobId": "c2aba251-b4a5-44d1-a846-54d32c2c33ff",
        "title":
        {
            "text": "Delete parity group",
            "messageCode": "DeleteParityGroupJobTitleMessage",
            "parameters":
            {
            }
        },
        "user": "sysadmin",
        "status": "IN_PROGRESS",
        "startDate": 1455838105134,
        "endDate": null,
        "parentJobId": null,
        "reports":
        [
        ],
        "links":
        [
            {
                "rel": "_self",
                "href": "/v1/jobs/c2aba251-b4a5-44d1-
a846-54d32c2c33ff"
            }
        ],
        "tags":
        [
        ],
        "isSystem": false
    }
```


Getting parity group template

You can display a list of the possible methods for creating parity groups on the storage system, based on best practices. Use one or more methods from this list to configure parity groups. Alternatively, you can configure parity groups by selecting disks and allocating them to parity groups. For VSP G1000, VSP G1500, or VSP F1500, you can not get parity group templates.

For each disk type, this API returns the various RAID options for creating parity groups. For each RAID option, it shows how many parity groups can be created and the available usable capacity. It also identifies the recommended RAID configuration for every disk type and the number of spare disks that must be assigned based on best practices.

Additionally, this API returns the number of total disks for a given disk type that are available and the number of spare disks that are already allocated.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/storage-systems/storageSystemId/
templates/parity-group
```

Use the storage system ID as the *storageSystemId.*

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
    "parityGroupTemplateItems":
    [
        {
            "diskType": "",
            "speed": ,
            "size": "",
            "totalNumberOfDisks": ,
            "numberOfAvailableDisks": ,
            "numberOfNewHotSpares": ,
            "numberOfExistingHotSpares": ,
            "raidOptions":
            [
                {
                    "raidLayout": "",
                    "raidLevel": "",
                    "numberOfDisksForRaidLayout": ,
                    "numberOfParityGroups": ,
                    "usableCapacity": "",
                    "isDefault":,
                    "numberOfUnusedDisks":
                },
              ]
                                    }
    ]
}
```

Parameter	Type	Description
diskType	String	Disk type, such as FMD, FMD DC2, SAS, or SSD.
speed	Integer	The speed of the disk.
size	String	Size of the resource, in bytes.
totalNumberOfDisks	Integer	Total number of specific disk type.
numberOfAvailableDisks	Integer	The number of available disks for parity group creation.
numberOfNewHotSpares	Integer	Based on best practices, the number of additional hot spare disks needed for the disk type.
numberOfExistingHotSpares	Integer	The number of existing hot spare disks of the specific disk type.
raidOptions	List	List of RAID option parity group template items.
raidLevel	String	RAID level. Valid values: RAID1+0, RAID5, or RAID6.
raidLayout	String	RAID layout. This RAID layout should be of the specified RAID level. Valid values: For Gx00: • RAID1+0 - (2D+2D) • RAID5 - (3D+1P),(4D+1P),(6D+1P)& (7D +1P) • RAID6 – (6D+2P),(14D+2P),(12D+2P) For VSP G1000, G1500, F1500: • RAID5- (3D+1P),(7D+1P) • RAID6 –(6D+2P),(14D+2P) • RAID1+0 – (2D+2D), (2D+2D)x2
numberOfDisksForRaidLayout	Integer	The number of disks that is used to create a parity group with the RAID layout.
numberOfParityGroups	Integer	The maximum number of parity groups that can be created for the RAID layout.
usableCapacity	Long	Usable capacity of the parity group, in bytes.
isDefault	Boolean	True if RAID layout is the recommended RAID layout for the disk type.
numberOfUnusedDisks	Integer	The number of disks that are left unused after creating parity groups with this RAID layout.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.

Status code	HTTP name	Description
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.109/v1/storage-systems/410209/templates/parity-group
```

Example response


```
{
    "parityGroupTemplateItems":
    [
        {
            "diskType": "SAS",
            "speed": 7200,
            "size": "3916143603200",
            "totalNumberOfDisks": 24,
            "numberOfAvailableDisks": 3,
            "numberOfNewHotSpares": 0,
            "numberOfExistingHotSpares": 1,
            "raidOptions":
            [
                {
                    "raidLayout": "6D+1P",
                    "raidLevel": "RAID5",
                    "numberOfDisksForRaidLayout": 7,
                    "numberOfParityGroups": 0,
                    "usableCapacity": "0",
                    "isDefault": false,
                    "numberOfUnusedDisks": 3
                }
        ]
        }
   ]
}
```


Creating parity group template

You can configure parity groups that are based on best practices when adding new disks to a storage system. You can specify the RAID configuration and the number of parity groups to be created for each disk type in the storage system. For VSP G1000, VSP G1500, and VSP F1500 storage systems, you can not create a parity group template using this API.

This API does the following:

- Based on the total number of disks of each disk type, it identifies the number of spare disks to be reserved and the number of spare disks to be allocated.
- Creates the required number of parity groups.
- If the RAID level and layout are not specified, Storage Advisor creates and formats the pool volumes for each parity group.

Configuring parity groups with this API allows you to use a template that is based on the following best practices:

- **Best practice 1, Hot spare disk:** Storage Advisor determines the ratio of hot spare disks per disk type and the selection of hot spare disks from the following supported types:

Disk type	Hot spare ratio
SSD	1 per 32
FMD	1 per 24
FMD DC2	1 per 24
SAS	1 per 32

- **Best practice 2, RAID configuration and layout:** Storage Advisor provides a recommended RAID configuration and the number of disks per disk type and model based on the following information:

Disk type and speed	RAID and layout
SATA, SSD, FMD, SAS, FMD DC2	RAID 6: 6D+2
SAS 15K, SAS 10K	RAID 6: 6D + 2
SAS 7.2K	RAID 6: 14D+2

- **Best practice 3, Disk selection:** Disks are selected to create an individual parity group. The disks should be identical in terms of disk type, speed, and capacity.
- **Best practice 4, Logical device (LDEV) creation:** Storage Advisor create LDEVs on parity groups that can be used as pool volumes for data protection pools.

The API supports the following workflow for configuring parity groups:

For each disk type (SSD, FMD, FMD DC2, and SAS):

- Get the disk and identify the total number of disks needed based on best practice 1.
- Calculate the number of hot spare disks needed based on best practice 1.
- Assign the hot spare disks based on best practice 1.

For every different speed for the chosen disk type:

- Determine the RAID type and layout based on best practice 2 or user input, if provided.
- Based on the layout, calculate the number of parity groups to be created and the size of each parity group for this disk type and speed.

For each parity group to be created:
- Select the disk based on best practice 3.
- Create the parity group.
- Create LDEVs on the parity group based on best practice 4.
- Initialize and format LDEVs.

HTTP request syntax (URI)

```
POST https://ipAddress/v1/storage-systems/storageSystemId/
templates/parity-group
```

Use the storage system ID as the *storageSystemId*.

Request structure

The request body structure is shown below:

```
{
"createParityGroupItems":
[
{
"diskType":"",
"speed":,
"size":,
"encryption":,
"raidLevel":"",
"raidLayout":"",
"numberOfParityGroups":
}
]
}
```

Parameter	Required	Type	Description
diskType	Yes	String	Type of disk, such as FMD DC2, FMD, SAS, or SSD.
speed	Yes	Integer	The speed of the disk, measured in revolutions per minute. For FMD, SSD, or FMD DC2, the speed is 0.
size	Yes	Long	Size of the resource, in bytes.
encryption	No	Boolean	Whether or not the data is encrypted. To set an encryption on the parity group, set the encryption parameter to true.
raidLevel	Yes	String	RAID level. Valid values: RAID0, RAID1, RAID1+0, RAID0+1, RAID2, RAID3, RAID4, RAID5, or RAID6.

Parameter	Required	Type	Description
raidLayout	Yes	String	The RAID layout of the specified RAID level. For Gx00: RAID1+0 - (2D+2D), RAID5 - (3D+1P),(4D+1P),(6D+1P)& (7D+1P), RAID6 - (6D+2P),(14D+2P),(12D+2P).
numberOfParityGroups	Yes	Integer	The number of parity groups to be created. This should be less than or equal to the maximum number of parity groups that can be created for the RAID layout with the specified disk type.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.

Parameter	Type	Description
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.109/v1/storage-systems/410209/templates/
parity-group
```

Example request

```
{
"createParityGroupItems":
[
{
"diskType":"SAS",
"speed":10000,
"size":1729286481408,
"encryption":false,
"raidLevel":"RAID6",
"raidLayout":"6D+2P",
"numberOfParityGroups":1
}
]
}
```

Pool management resources

The following are pool management APIs:

Request	Method	URI	Role
Listing pools on page 87	GET	/v1/storage-systems/*storageSystemId*/storage-pools	Storage administrator System administrator Security administrator
Getting a specific pool on page 94	GET	/v1/storage-systems/*storageSystemId*/storage-pools/*storagePoolId*	Storage administrator System administrator Security administrator
Getting pool summaries on page 101	GET	/v1/storage-systems/*storageSystemId*/storage-pools/summary	Storage administrator System administrator

Request	Method	URI	Role
			Security administrator
Creating a pool on page 103	POST	/v1/storage-systems/*storageSystemId*/storage-pools	Storage administrator
Updating a pool on page 106	POST	/v1/storage-systems/*storageSystemId*/storage-pools/*storagePoolId*	Storage administrator
Deleting a pool on page 109	DELETE	/v1/storage-systems/*storageSystemId*/storage-pools/*storagePoolId*	Storage administrator

The following are pool management template APIs:

Request	Method	URI	Role
Getting pool template on page 111	GET	/v1/storage-systems/*storageSystemId*}/templates/pool	Storage Administrator System Administrator Security Administrator
Getting a specific pool template on page 114	GET	/v1/storage-systems/*storageSystemId*}/templates/pool/*storagePoolId*	Storage Administrator System Administrator Security Administrator
Creating pool template on page 115	POST	/v1/storage-systems/*storageSystemId*}/templates/pool	Storage Administrator
Updating pool template on page 119	POST	/v1/storage-systems/*storageSystemId*}/templates/pool/*storagePoolId*	Storage Administrator

Listing pools

You can display a list all the pools in a storage system.

HTTP request syntax (URI)

`GET https://`*`ipAddress`*`/v1/storage-systems/`*`storageSystemId`*`/storage-pools`

Use the storage system ID as the *storageSystemId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
"resources": [
        {
            "storagePoolId": ,
            "storageSystemId": "",
            "label": "",
            "capacityInBytes": ,
            "usedCapacityInBytes": ,
            "availableCapacityInBytes": ,
            "usedSubscribedCapacityInBytes": ,
            "logicalCapacityInBytes": ,
            "usedLogicalCapacityInBytes": ,
            "availableLogicalCapacityInBytes": ,
            "type": "",
            "utilizationThreshold1": ,
            "utilizationThreshold2": ,
            "subscriptionLimit": {
                "unlimited": ,
                "value":
            },
            "usedSubscription": ,
            "availableSubscription": {
                "unlimited": ,
                "value":
            },
            "status": "",
            "parityGroups": [
                {
                    "id": "",
                    "encryption": ,
                    "compression":
                }
            ],
            "externalParityGroupIds": [],
            "tiers": [
                {
                    "tier": "",
                    "capacity": ,
                    "usedCapacity": ,
                    "usage": {
                        "unlimited": ,
                        "value":
                    },
                    "bufferSpace": {
                        "newPageAssignment": {
                            "unlimited": ,
                            "value":
                        },
                        "tierRelocation": {
                            "unlimited": ,
```

```
                            "value":
                        }
                    },
                    "performanceUtilization": {
                        "unlimited": ,
                        "value":
                    }
                }
            ],
            "tieringMode": "",
            "monitoringMode": "",
            "activeFlashEnabled": ,
            "encrypted": "",
            "fmcCompressed": "",
            "deduplicationEnabled": ,
            "compressionDetails": {
                "compressionRate": ,
                "deduplicationRate": ,
                "savingsPercentage":
            },
            "fmcCompressionDetails": {
                "expansionRate": ,
                "compressionRate": ,
                "savingsPercentage":
            },
            "deduplicationSystemDataCapacityInBytes": ,
            "nasBoot": ,
        }
    ]
    "total": ,
    "nextToken":
}
```


Parameter	Type	Description
storagePoolId	String	ID of the storage pool.
storageSystemId	String	ID of the storage system.
Label	String	Name of the storage pool.
capacityInBytes	Long	Total pool capacity.
usedCapacityInBytes	Long	Current used capacity in the pool.
availableCapacityInBytes	Long	Unused capacity of the volume that is attached to the host.
usedSubscribedCapacityInBytes	Long	Used subscribed capacity for this pool.
logicalCapacityInBytes	Long	Unused logical capacity.
usedLogicalCapacityInBytes	Long	Used logical capacity for this pool.
availableLogicalCapacityInBytes	Long	Unused logical capacity of the volume that is attached to the host.
type	String	Pool type: • HDP • HDT • HTI

Parameter	Type	Description
utilizationThreshold1	Integer	The pool capacity utilization threshold at which first warning is issued.
utilizationThreshold2	Integer	The pool capacity utilization threshold at which second warning is issued.
subscriptionLimit	Object	If subscription limit is set, unlimited is false and value indicates the limit. If subscription limit is not set, unlimited is true.
unlimited	Boolean	Whether there is a subscription limit. Values are TRUE or FALSE.
value	Integer	The subscription limit value set for a pool. When the subscription limit is set, you cannot configure another DP-VOL if the new DP-VOL capacity would cause the subscription limit to be exceeded.
usedSubscription	Integer	Current subscribed capacity in this pool.
availableSubscription	String	The rate of subscription available for the pool, derived by "SubscriptionLimit" - "usedSubscription".
unlimited	Boolean	Whether there is a limit on available capacity. Values are TRUE or FALSE.
value	Integer	The rate of subscription available for the pool, derived by "SubscriptionLimit" - "usedSubscription". Null if the subscription is unlimited.
status	String	Volume status: Valid values: NORMAL, BLOCKED, BUSY, UNKNOWN, or NONE.
parityGroups	String	List of parity groups that belong to this pool.
id	String	ID of the parity groups.
encryption	Boolean	Whether the parity group is encrypted. Values are TRUE or FALSE.
compression	Boolean	Whether the parity group is compressed Values are TRUE or FALSE.
externalParityGroupIds	List	List of external parity groups that belong to this pool.
tiers	List	List of tiers, with details for each.
tier	String	The tier type. Valid values: Platinum, Gold, Silver, Bronze, External.
capacity	String	Capacity of the tier, in bytes.
usedCapacity	String	Tier capacity that is in use.
usage	Percentage	Tier usage.
unlimited	Boolean	Whether or not a limit is set.
value	Integer	
bufferSpace	BufferSpaceResource	Tier buffer space.
newPageAssignment	Percentage	The buffer space for new page assignment.
unlimited	Boolean	Whether or not the buffer space for new page assignment is limited. Values are TRUE or FALSE.
value	Integer	

Parameter	Type	Description
tierRelocation	Percentage	The buffer space for tier relocation.
unlimited	Boolean	Whether or not a limit is set.
value	Integer	
performanceUtilization	Percentage	Tier performance usage percentage.
unlimited	Boolean	Whether or not the buffer space for new page assignment is limited. Values are TRUE or FALSE.
value	Integer	
tieringMode	String	Tiering mode for HDT (Tiered) pool. Values: MANUAL, AUTOMATIC, NONE, UNKNOWN. The value for a non-HDT pool should be NONE.
monitoringMode	String	Monitoring mode for HDT (Tiered) pool. Values: PERIODICAL, CONTINUOUS, PERIODICAL_WITH_ACTIVE_FLASH, CONTINUOUS_WITH_ACTIVE_FLASH, NONE. The value for a non-HDT pool should be NONE.
activeFlashEnabled	Boolean	Whether or not active flash is enabled. To enable active flash, one of the tier must be Platinum and disk types: FMD, SSD, or FMD DC2. You also need enable the active flush license.
encrypted	Boolean	Whether or not the data is encrypted. Valid values: YES, NO, PARTIAL, or UNKNOWN.
fmcCompressed	String	Whether or not the data is compressed. Accelerated compression is only supported on FMD DC2 drives.
deduplicationEnabled	String	Whether or not "Deduplication and Compression" capacity saving is available.
compressionDetails	Object	The following attributes are displayed: compressionRate, deduplicationRate, and savingsPercentage.
compressionRate	Float	The ratio of data size compression using only FMD DC2 compression.
deduplicationRate	Float	Rate of deduplication.
savingsPercentage	Float	Displays the percentage of the capacity reduced by data compression with respect to the used capacity before the data compression. This does not display a percentage value until the data is compressed. If the savingsPercentage for a pool is not high enough, you can provision additional pool volumes to the pool from the parity groups using FMD DC2 drives.
fmcCompressionDetails	Object	Detailed information regarding FMD DC2 compression. If "fmcCompressed" is true, then this parameter is available.
expansionRate	Float	The ratio of the total capacity of FMD DC2 pool volumes with respect to the total capacity of FMD DC2 pool volumes assured for writing.
nasBoot	Boolean	Whether a pool consists of NAS boot volumes. Values are TRUE or FALSE.
deduplicationSystemDataCapacityInBytes	String	System data capacity that is reserved when "deduplicationEnabled" is true.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example code

Request with JSON command:

```
https://172.17.64.109/v1/file/storage-systems/410209/storage-pools
```

JSON response:


```
{
    "resources": [

        {
            "storagePoolId": 2,
            "storageSystemId": "410209",
            "label": "vjSnapPool",
            "capacityInBytes": 1724746039296,
            "usedCapacityInBytes": 748683264,
            "availableCapacityInBytes": 1723997356032,
            "usedSubscribedCapacityInBytes": 0,
            "logicalCapacityInBytes": 1724746039296,
            "usedLogicalCapacityInBytes": 748683264,
            "availableLogicalCapacityInBytes": 1723997356032,
            "type": "HTI",
            "utilizationThreshold1": 0,
            "utilizationThreshold2": 80,
            "subscriptionLimit": {
                "unlimited": false,
                "value": 0
            },
            "usedSubscription": 0,
            "availableSubscription": {
                "unlimited": false,
                "value": 0
            },
            "status": "NORMAL",
            "parityGroups": [
                {
                    "id": "1-3",
                    "encryption": false,
                    "compression": false
                }
            ],
```

```
        "externalParityGroupIds": [],
        "tiers": [
            {
                "tier": "Silver",
                "capacity": null,
                "usedCapacity": null,
                "usage": null,
                "bufferSpace": null,
                "performanceUtilization": null
            }
        ],
        "tieringMode": "NONE",
        "monitoringMode": "NONE",
        "activeFlashEnabled": false,
        "encrypted": "NO",
        "fmcCompressed": "NO",
        "deduplicationEnabled": false,
        "compressionDetails": {
            "compressionRate": 1,
            "deduplicationRate": 1,
            "savingsPercentage": 0
        },
        "fmcCompressionDetails": {
            "expansionRate": 1,
            "compressionRate": 1,
            "savingsPercentage": 0
        },
        "deduplicationSystemDataCapacityInBytes": 0,
        "nasBoot": false
    },
    {
        "storagePoolId": 3,
        "storageSystemId": "410033",
        "label": "AutoHDTPool-1",
        "capacityInBytes": 3453896097792,
        "usedCapacityInBytes": 0,
        "availableCapacityInBytes": 3453896097792,
        "usedSubscribedCapacityInBytes": 37497077760,
        "logicalCapacityInBytes": 3453896097792,
        "usedLogicalCapacityInBytes": 0,
        "availableLogicalCapacityInBytes": 3453896097792,
        "type": "HDT",
        "utilizationThreshold1": 20,
        "utilizationThreshold2": 90,
        "subscriptionLimit": {
            "unlimited": false,
            "value": 101
        },
        "usedSubscription": 1,
        "availableSubscription": {
            "unlimited": false,
            "value": 100
        },
        "status": "NORMAL",
        "parityGroups": [
            {
                "id": "1-2",
                "encryption": false,
```

```
                        "compression": false
                    }
                ],
                "externalParityGroupIds": [],
                "tiers": [
                    {
                        "tier": "Silver",
                        "capacity": 3453896097792,
                        "usedCapacity": 0,
                        "usage": {
                            "unlimited": false,
                            "value": 0
                        },
                        "bufferSpace": {
                            "newPageAssignment": {
                                "unlimited": false,
                                "value": 8
                            },
                            "tierRelocation": {
                                "unlimited": false,
                                "value": 2
                            }
                        },
                        "performanceUtilization": {
                            "unlimited": false,
                            "value": 0
                        }
                    }
                ],
                "tieringMode": "MANUAL",
                "monitoringMode": "PERIODICAL",
                "activeFlashEnabled": false,
                "encrypted": "NO",
                "fmcCompressed": "NO",
                "deduplicationEnabled": false,
                "compressionDetails": {
                    "compressionRate": 1,
                    "deduplicationRate": 1,
                    "savingsPercentage": 0
                },
                "fmcCompressionDetails": {
                    "expansionRate": 0,
                    "compressionRate": 1,
                    "savingsPercentage": 0
                },
                "deduplicationSystemDataCapacityInBytes": 0,
                "nasBoot": false
            }
        ],
        "total": 2,
        "nextToken": null
    }
```


Getting a specific pool

You can display detailed information about a specific pool.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/storage-systems/storageSystemId/storage-pools/storagePoolId
```

Use the storage system ID as the *storageSystemId*.

Use the storage pool ID as the *storagePoolId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
            "storagePoolId": ,
            "storageSystemId": "",
            "label": "",
            "capacityInBytes": ,
            "usedCapacityInBytes": ,
            "availableCapacityInBytes": ,
            "usedSubscribedCapacityInBytes": ,
            "logicalCapacityInBytes": ,
            "usedLogicalCapacityInBytes": ,
            "availableLogicalCapacityInBytes": ,
            "type": "",
            "utilizationThreshold1": ,
            "utilizationThreshold2": ,
            "subscriptionLimit": {
                "unlimited": ,
                "value":
            },
            "usedSubscription": ,
            "availableSubscription": {
                "unlimited": false,
                "value":
            },
            "status": "",
            "parityGroups": [
                {
                    "id": "",
                    "encryption": ,
                    "compression":
                }
            ],
            "externalParityGroupIds": [],
            "tiers": [
                {
                    "tier": "",
                    "capacity": ,
                    "usedCapacity": ,
                    "usage": {
                        "unlimited": ,
```

```
                        "value":
                    },
                    "bufferSpace": {
                        "newPageAssignment": {
                            "unlimited": ,
                            "value":
                        },
                        "tierRelocation": {
                            "unlimited": ,
                            "value":
                        }
                    },
                    "performanceUtilization": {
                        "unlimited": ,
                        "value":
                    }
                }
            ],
            "tieringMode": "",
            "monitoringMode": "",
            "activeFlashEnabled": ,
            "encrypted": "",
            "fmcCompressed": "",
            "deduplicationEnabled": ,
            "compressionDetails": {
                "compressionRate": ,
                "deduplicationRate": ,
                "savingsPercentage":
            },
            "fmcCompressionDetails": {
                "expansionRate": ,
                "compressionRate": ,
                "savingsPercentage":
            },
            "deduplicationSystemDataCapacityInBytes": ,
            "nasBoot": ,
        }
```


Parameter	Type	Description
storagePoolId	String	ID of the storage pool.
storageSystemId	String	ID of the storage system.
Label	String	Name of the storage pool.
capacityInBytes	Long	Total pool capacity.
usedCapacityInBytes	Long	Current used capacity in the pool.
availableCapacityInBytes	Long	Unused capacity of the volume that is attached to the host.
usedSubscribedCapacityInBytes	Long	Used subscribed capacity for this pool.
logicalCapacityInBytes	Long	Unused logical capacity.
usedLogicalCapacityInBytes	Long	Used logical capacity for this pool.

Parameter	Type	Description
availableLogicalCapacityInBytes	Long	Unused logical capacity of the volume that is attached to the host.
type	String	Pool type: • HDP • HDT • HTI
utilizationThreshold1	Integer	The pool capacity utilization threshold at which first warning is issued.
utilizationThreshold2	Integer	The pool capacity utilization threshold at which second warning is issued.
subscriptionLimit	Object	If subscription limit is set, unlimited is false and value indicates the limit. If subscription limit is not set, unlimited is true.
unlimited	Boolean	Whether there is a subscription limit. Values are TRUE or FALSE.
value		
usedSubscription	Integer	Current subscribed capacity in this pool.
availableSubscription	String	Available capacity of this pool.
unlimited	Boolean	Whether there is a limit on available capacity. Values are TRUE or FALSE.
value		
status	String	Volume status: Valid values: NORMAL, BLOCKED, BUSY, UNKNOWN, or NONE.
parityGroups	String	List of parity groups that belong to this pool.
id	String	ID of the parity groups.
encryption	Boolean	Whether the parity group is encrypted. Values are TRUE or FALSE.
compression	Boolean	Whether the parity group is compressed Values are TRUE or FALSE.
externalParityGroupIds	List	List of external parity groups that belong to this pool.
tiers	List	List of tiers, with details for each.
tier	String	The tier type. Valid values: Platinum, Gold, Silver, Bronze, External.
capacity	String	Capacity of the tier, in bytes.
usedCapacity	String	Tier capacity that is in use.
usage	Percentage	Tier usage.
unlimited	Boolean	Whether or not a limit is set.
value	Integer	

Parameter	Type	Description
bufferSpace	BufferSpaceResource	Tier buffer space.
newPageAssignment	Percentage	The buffer space for new page assignment.
unlimited	Boolean	Whether or not the buffer space for new page assignment is limited. Values are TRUE or FALSE.
value	Integer	
tierRelocation	Percentage	The buffer space for tier relocation.
unlimited	Boolean	Whether or not a limit is set.
value	Integer	
performanceUtilization	Percentage	Tier performance usage percentage.
unlimited	Boolean	Whether or not the buffer space for new page assignment is limited. Values are TRUE or FALSE.
value	Integer	
tieringMode	String	Tiering mode for HDT (Tiered) pool. Values: MANUAL, AUTOMATIC, NONE, UNKNOWN. The value for a non-HDT pool should be NONE.
monitoringMode	String	Monitoring mode for HDT (Tiered) pool. Values: PERIODICAL, CONTINUOUS, PERIODICAL_WITH_ACTIVE_FLASH, CONTINUOUS_WITH_ACTIVE_FLASH, NONE. The value for a non-HDT pool should be NONE.
activeFlashEnabled	Boolean	Whether or not active flash is enabled. To enable active flash, one of the tier must be Platinum and disk types: FMD, SSD, or FMD DC2. You also need enable the active flush license.
encrypted	Boolean	Whether or not the data is encrypted. Valid values: YES, NO, PARTIAL, or UNKNOWN.
fmcCompressed	String	Whether or not the data is compressed. Accelerated compression is only supported on FMD DC2 drives.
deduplicationEnabled	String	Whether or not "Deduplication and Compression" capacity saving is available.
compressionDetails	Object	The following attributes are displayed: compressionRate, deduplicationRate, and savingsPercentage.
compressionRate	Float	The ratio of data size compression using only FMD DC2 compression.
deduplicationRate	Float	Rate of deduplication.
savingsPercentage	Float	Displays the percentage of the capacity reduced by data compression with respect to the used

Parameter	Type	Description
		capacity before the data compression. This does not display a percentage value until the data is compressed. If the savingsPercentage for a pool is not high enough, you can provision additional pool volumes to the pool from the parity groups using FMD DC2 drives.
fmcCompressionDetails	Object	Detailed information regarding FMD DC2 compression. If "fmcCompressed" is true, then this parameter is available.
expansionRate	Float	The ratio of the total capacity of FMD DC2 pool volumes with respect to the total capacity of FMD DC2 pool volumes assured for writing.
deduplicationSystemDataCapacityInBytes	String	System data capacity that is reserved when "deduplicationEnabled" is true.
nasBoot	Boolean	Whether a pool consists of NAS boot volumes. Values are TRUE or FALSE.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example code

Request with JSON command:

```
https://172.17.64.109/v1/file/storage-systems/410209/storage-pools/0
```

JSON response:

```
{
    "storagePoolId": 3,
    "storageSystemId": "410033",
    "label": "AutoHDTPool-1",
    "capacityInBytes": 3453896097792,
    "usedCapacityInBytes": 0,
    "availableCapacityInBytes": 3453896097792,
```

```
"usedSubscribedCapacityInBytes": 37497077760,
"logicalCapacityInBytes": 3453896097792,
"usedLogicalCapacityInBytes": 0,
"availableLogicalCapacityInBytes": 3453896097792,
"type": "HDT",
"utilizationThreshold1": 20,
"utilizationThreshold2": 90,
"subscriptionLimit": {
    "unlimited": false,
    "value": 101
},
"usedSubscription": 1,
"availableSubscription": {
    "unlimited": false,
    "value": 100
},
"status": "NORMAL",
"parityGroups": [
    {
        "id": "1-2",
        "encryption": false,
        "compression": false
    }
],
"externalParityGroupIds": [],
"tiers": [
    {
        "tier": "Silver",
        "capacity": 3453896097792,
        "usedCapacity": 0,
        "usage": {
            "unlimited": false,
            "value": 0
        },
        "bufferSpace": {
            "newPageAssignment": {
                "unlimited": false,
                "value": 8
            },
            "tierRelocation": {
                "unlimited": false,
                "value": 2
            }
        },
        "performanceUtilization": {
            "unlimited": false,
            "value": 0
        }
    }
],
"tieringMode": "MANUAL",
"monitoringMode": "PERIODICAL",
"activeFlashEnabled": false,
"encrypted": "NO",
"fmcCompressed": "NO",
"deduplicationEnabled": false,
"compressionDetails": {
    "compressionRate": 1,
```

```
            "deduplicationRate": 1,
            "savingsPercentage": 0
        },
        "fmcCompressionDetails": {
            "expansionRate": 0,
            "compressionRate": 1,
            "savingsPercentage": 0
        },
        "deduplicationSystemDataCapacityInBytes": 0,
        "nasBoot": false
    }
```

Getting pool summaries

You can display a summary of pools based on their type, HDP, HDT, or HTI.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/storage-systems/storageSystemId/storage-pools/summary
```

Use the storage system ID as the *storageSystemId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
   "summariesByType":
   [
        {
           "poolType": "",
           "totalCapacity": ,
           "usedCapacity": ,
           "availableCapacity": ,
           "usedSubscribedCapacity": ,
           "poolCount": ,
        },
        .....
   ]
}
```

Parameter	Type	Description
poolType	String	Pool type, can be of the following values or the name of a tier that is available in the storage system. • HDP - Thin pools • HDT - Tiered pools • HTI - Snap pools

Parameter	Type	Description
usedCapacity	String	Sum of used capacity across all pools of the specified type in the storage system, in bytes.
availableCapacity	Long	Unused capacity of the resource, in bytes.
usedSubscribedCapacity	String	Subscribed used capacity across all the pools of the specified type on that storage system.
totalCapacity	String	Total capacity of the specified pool type in the storage system, in bytes.
poolCount	Integer	Number of pools in the pool type that is available on the storage system.

Return codes

Status code	HTTP name	Description
200	OK	Success.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example code

Request with JSON command:

```
https://172.17.64.109/v1/storage-systems/410209/storage-pools/summary
```

JSON response:

```
{
   "summariesByType":
   [
        {
           "poolType": "HDP",
           "totalCapacity": "23819314003968",
           "usedCapacity": "3748436901888",
           "availableCapacity": "20070877102080",
           "usedSubscribedCapacity": "167136337068032"
           "poolCount": 4
        },
```

```
    ]
}
```

Creating a pool

You can create a pool with a list of parity groups. All parity groups must belong to the same storage system and the pool type.

HTTP request syntax (URI)

```
POST https://ipAddress/v1/storage-systems/storageSystemId/
storage-pools
```

Use the storage system ID as the *storageSystemId*.

Request structure

The request body structure is shown below:

```
{
"label":" ",
"type":"",
"activeFlashEnabled":,
"utilizationThreshold1": ,
"utilizationThreshold2":,
"subscriptionLimit": {
"value" : ,
"unlimited":
},
"parityGroupIds":[""]
}
```

Parameter	Required	Type	Description
label	Yes	String	The pool name.
type	Yes	String	The pool type: HDP, HDT, or HTI.
activeFlashEnabled	No	Boolean	Whether or not active flash is enabled. To enable it, one of the tier must be a Platinum tier and one of the disk type: FMD, SSD, or FMD DC2. You also need to install the active flush license.
utilizationThreshold1	No	Integer	The pool capacity utilization threshold at which the first warning is issued. The range is between 1 - 100. If the utilizationThreshold1 is not specified, Storage Advisor sets it to 70%.
utilizationThreshold2	No	Integer	The pool capacity utilization threshold at which the second warning is issued. The range is between 1 - 100. The value for utilizationThreshold2 must be greater than the value for utilizationThreshold1. If utilizationThreshold2 is not specified, Storage Advisor sets it to 80%.

Parameter	Required	Type	Description
subscriptionLimit	No	Integer	This is the maximum volume capacity subscription that is allowed on a given storage pool. The allowed values are between 1 - 65534. To set unlimited subscription limit, set unlimited = true. If the subscriptionLimit is not specified, Storage Advisor sets this to 100%.
parityGroupIds	No	String	List of parity group IDs that belong to this pool.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.

Parameter	Type	Description
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.109/v1/file/storage-systems/410209/storage-
pools
```

Example request

```
{
"label":" HDT-encrypt-G1000-P0",
"type":"HDT",
"activeFlashEnabled":true,
"utilizationThreshold1": 90,
"utilizationThreshold2":95,
"subscriptionLimit": {
"value" : 100,
"unlimited": false
},
"parityGroupIds":["5-1"]
}
```

Updating a pool

You can update a pool, such as renaming or expanding the pool by adding parity groups, changing the threshold and subscription limits for the pool, and changing the pool type from HDP to HDT. However, you can not delete or update any parameters on pools created on external parity groups.

HTTP request syntax (URI)

```
POST https://ipAddress/v1/storage-systems/storageSystemId/
storage-pools/storagePoolId
```

Use the storage system ID as the *storageSystemId*.

Use the storage pool ID as the *storagePoolId*.

Request structure

The request body structure is shown below:

```
{
"label":" ",
"type":"",
"activeFlashEnabled":,
"utilizationThreshold1": ,
"utilizationThreshold2":,
"subscriptionLimit": {
"value" : ,
"unlimited":
},
"parityGroupIds":[""]
}
```

Parameter	Required	Type	Description
label	No	String	The pool name.
poolType	No	String	The pool type: HDP, HDT, and HTI.
activeFlashEnabled	No	Boolean	Whether or not active flash is enabled. To enable it, one of the tier must be a Platinum tier and one of the disk type: FMD, SSD, or FMD DC2. You also need to install the active flush license.
utilizationThreshold1	No	Integer	The pool capacity utilization threshold at which the first warning is issued. The range is between 1 - 100. If the utilizationThreshold1 is not specified, Storage Advisor sets it to 70%.
utilizationThreshold2	No	Integer	The pool capacity utilization threshold at which the second warning is issued. The range is between 1 - 100. The value for utilizationThreshold2 must be greater than the value for utilizationThreshold1. If utilizationThreshold2 is not specified, Storage Advisor sets it to 80%.
subscriptionLimit	No	Integer	This is the maximum volume capacity subscription that is allowed on a given storage pool. The allowed values are between 1 - 65534. To set unlimited subscription limit, set unlimited = true. If the subscriptionLimit is not specified, Storage Advisor sets this to 100%.
parityGroupIds	No	String	List of parity group IDs that belong to this pool.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
```

```
    [
        {
            "rel": "_self",
            "href": "/v1/jobs/jobId"
        }
    ],
    "tags":
    [
    ],
    "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
401	Unauthorized	The operation is not authorized.

Status code	HTTP name	Description
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.115/v1/storage-systems/440084/storage-pools
```

Example request

```
{
"label":" HDT-encrypt-G1000-P0",
"type":"HDT",
"activeFlashEnabled":true,
"utilizationThreshold1": 90,
"utilizationThreshold2":95,
"subscriptionLimit": {
"value" : 100,
"unlimited": false
},
"parityGroupIds":["5-1"]
}
```

Deleting a pool

You can delete a pool from a storage system.

HTTP request syntax (URI)

DELETE https://*ipAddress*/v1/storage-systems/*storageSystemId*/storage-pools/*storagePoolId*

Use the storage system ID as the *storageSystemId*.

Use the storage pool ID as the *storagePoolId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
```

```
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.

Parameter	Type	Description
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
204	No content	The request was successful, but the response does not exist.
400	Bad request	Required HTTP header was not specified.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Getting pool template

You can list all the different pool size options that are available to expand a given pool. You must specify either the tier name or the capacity, diskType, raidlLevel, raidLayout, and speed.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/storage-systems/storageSystemId/
templates/pool
```

Use the storage system ID as the *storageSystemId*.

Request structure

Not applicable.

Response structure

The request body structure is shown below:

```
{
  "label": ,
```

```
 "utilizationThreshold1": ,
 "utilizationThreshold2": ,
 "subscriptionLimit": {
   "unlimited": ,
   "value":
 },
 "tiers": [
   {
     "name": "",
     "templateSubTiers": [
       {
         "description": "",
         "diskType": "",
         "speed": ,
         "capacity": "",
         "raidLevel": "",
         "raidLayout": "",
         "availableSizesInBytes": [
           ""
         ]
}
```

Parameter	Type	Description
label	String	Name of the storage pool.
utilizationThreshold1	String	The pool capacity utilization threshold at which first warning is issued.
utilizationThreshold2	String	The pool capacity utilization threshold at which second warning is issued.
subscriptionLimit	String	Maximum subscription of volume capacity allowed on this pool. If there is an unlimited subscription limit, unlimited = true.
tiers	String	Tiers that belong in the pool.
name	String	Name of the tier.
description	String	Short description of the pool.
diskType	String	Type of disk, such as FMD DC2, FMD, SAS, or SSD.
speed	String	The speed of the disk, measured in revolutions per minute.
capacity	Long	Capacity of the tier in bytes.
raidLevel	String	RAID level. Valid values: RAID1+0, RAID5, or RAID6.
raidLayout	String	RAID layout. This RAID layout should be of the specified RAID level. Valid values: For Gx00: • RAID1+0 - (2D+2D) • RAID5 - (3D+1P),(4D+1P),(6D+1P)& (7D +1P) • RAID6 – (6D+2P),(14D+2P),(12D+2P)

Parameter	Type	Description
		For VSP G1000, G1500, F1500: • RAID5- (3D+1P),(7D+1P) • RAID6 –(6D+2P),(14D+2P) • RAID1+0 – (2D+2D), (2D+2D)x2
availiableSizesInBytes	Long	Available sizes to use for creating and updating the pool.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource does not exist.

Example request

```
https://172.17.64.109/v1/file/storage-systems/410209/templates/pool
```

Example response


```
{
  "label": null,
  "utilizationThreshold1": 70,
  "utilizationThreshold2": 80,
  "subscriptionLimit": {
    "unlimited": false,
    "value": 100
  },
  "tiers": [
    {
      "name": "Platinum",
      "templateSubTiers": [
        {
          "description": "FMD RAID1+0 2D+2D",
          "diskType": "FMD",
          "speed": 0,
          "capacity": "1759216926208",
          "raidLevel": "RAID1+0",
          "raidLayout": "2D+2D",
          "availableSizesInBytes": [
            "3518431756288"
```

```
            ]
}
```

Getting a specific pool template

You can list the different pool sizes that can be created for a specific storage pool, based on the available resources and applying best practices.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/storage-systems/storageSystemId/
templates/pool/storagePoolId
```

Use the storage system ID as the *storageSystemId*.

Use the storage pool ID as the *storagePoolId*.

Request structure

Not applicable.

Response structure

```
{
  "label": "",
  "utilizationThreshold1":  ,
  "utilizationThreshold2":  ,
  "subscriptionLimit": {
    "value":  ,
    "unlimited":
  },
  "tiers": [
    {
      "templateSubTiers": [
        {
          "availableSizesInBytes": [
            ""
          ],
          "diskType": "",
          "speed":  ,
          "capacity": {
            "bytes":
          },
          "raidLevel": "",
          "raidLayout": "",
          "description": ""
        }
      ],
      "name": ""
    }
  ]
}
```

Parameter	Type	Description
label	String	Name of the storage pool.
utilizationThreshold1	String	The pool capacity utilization threshold at which first warning is issued.
utilizationThreshold2	String	The pool capacity utilization threshold at which second warning is issued.
subscriptionLimit	String	Maximum subscription of volume capacity allowed on this pool. If there is an unlimited subscription limit, unlimited = true.
tiers	String	Tiers that belong in the pool.
availableSizesInBytes	String	Unused capacity of the volume that is attached to the host.
diskType	String	Type of disk, such as FMD DC2, FMD, SAS, or SSD.
speed	String	The speed of the disk, measured in revolutions per minute.
capacity	String	Capacity of the tier in bytes.
raidLevel	String	RAID level, such as RAID 5 or RAID 6.
raidLayout	String	RAID layout.
description	String	Short description of the pool.
name	String	Name of the tier.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource does not exist.

Creating pool template

Using best practices, you can create a pool of a specified size and tier. If more than one tier is requested, a tiered pool (or HDT) is created. The tier `name` and the available pool size, `sizeToUseInBytes`, are the required parameters . Other disk parameters, such as, `speed`, `capacity`, `raidLevel`, `raidLayout`, and `diskType` are ignored, if specified.

The pool size must be one of the possible sizes returned by the GET pool template API.

HTTP request syntax (URI)

```
POST https://ipAddress/v1/storage-systems/storageSystemId/
templates/pool
```

Use the storage system ID as the *storageSystemId*.

Request structure

The request body structure is shown below:

```
{
  "utilizationThreshold1": ,
  "utilizationThreshold2": ,
  "subscriptionLimit": {
    "unlimited": ,
    "value":
  },
  "htiPool": ,
  "poolTemplateSubTiers": [
    {
      "capacity": {
        "bytes":
      },
      "diskType": "",
      "raidLevel": "",
      "raidLayout": "",
      "speed": ,
      "sizeToUseInBytes": "",
      "name": ""
    }
  ],
  "label": ""
}
```

Parameter	Required	Type	Description
utilizationThreshold1	No	Integer	The pool capacity utilization threshold at which the first warning is issued. The range is between 1 - 100. If the utilizationThreshold1 is not specified, Storage Advisor sets it to 70%.
utilizationThreshold2	No	Integer	The pool capacity utilization threshold at which the second warning is issued. The range is between 1 - 100. The value for utilizationThreshold2 must be greater than the value for utilizationThreshold1. If utilizationThreshold2 is not specified, Storage Advisor sets it to 80%.
subscriptionLimit	No	Integer	This is the maximum volume capacity subscription that is allowed on a given storage pool. The allowed values are between 1 - 65534.

Parameter	Required	Type	Description
			To set unlimited subscription limit, set unlimited = true. If the subscriptionLimit is not specified, Storage Advisor sets this to 100%.
htiPool	No	Boolean	Determines whether the pool is a HTI pool. Set this to be true when you want the pool to be a HTI pool.
diskType	Yes	String	Type of disk, such as FMD DC2, FMD, SAS, or SSD.
raidLevel	Yes	String	RAID level. Valid values: RAID0, RAID1, RAID1+0, RAID0+1, RAID2, RAID3, RAID4, RAID5, or RAID6.
raidLayout	Yes	String	The RAID layout of the specified RAID level. For Gx00: RAID1+0 - (2D+2D), RAID5 - (3D+1P),(4D+1P),(6D+1P)& (7D+1P), RAID6 - (6D+2P),(14D+2P),(12D+2P). For VSP G1000, VSP G1500, VSP F1500: RAID5- (3D+1P),(7D+1P) RAID6 -(6D+2P),(14D+2P) RAID1+0 - (2D+2D), (2D+2D)x2
speed	Yes	Integer	The speed of the disk, measured in revolutions per minute. For FMD, SSD, or FMD DC2, the speed is 0.
sizeToUseInBytes	Yes	String	The size to be used in creating and updating the pool (Based on all availableSizesInBytes).
name	Yes	String	Name of the tier, such as Platinum, Gold, Silver, Bronze, or External.
label	No	String	Name of the storage pool. This should be a unique name for the storage pool.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
```

```
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource does not exist.

Updating pool template

Using best practices, you can update a pool of a specified size and tier. If more than one tier is requested, a tiered pool (or HDT) is created. You must specify either the tier name or the capacity, diskType, raidlLevel, raidLayout, and speed.

HTTP request syntax (URI)

`POST https://`*`ipAddress`*`/v1/storage-systems/`*`storageSystemId`*`/templates/pool/`*`storagePoolId`*

Use the storage system ID as the *storageSystemId*.

Use the storage pool ID as the *storagePoolId*.

Request structure

The request body structure is shown below:

```
{
  "utilizationThreshold1": ,
  "utilizationThreshold2": ,
  "subscriptionLimit": {
    "unlimited": ,
    "value":
  },
  "htiPool": ,
  "poolTemplateSubTiers": [
    {
      "capacity": {
        "bytes":
      },
      "diskType": "",
      "raidLevel": "",
      "raidLayout": "",
      "speed": ,
```

```
      "sizeToUseInBytes": "",
      "name": ""
    }
  ],
  "label": ""
}
```

Parameter	Required	Type	Description
utilizationThreshold1	Yes	String	The pool capacity utilization threshold at which first warning is issued. Range is 0 - 100.
utilizationThreshold2	Yes	String	The pool capacity utilization threshold at which second warning is issued. Range is 0 - 100 and should be at a higher value than utilizationThreshold1.
subscriptionLimit	No	String	Maximum subscription of volume capacity allowed on this pool. Value must be greater than 0. If there is an unlimited subscription limit, unlimited = true.
htiPool	No	Boolean	Determines whether the pool is a HTI pool. Set this to be true when you want the pool to be a HTI pool.
capacity	No	String	Capacity of the tier in bytes.
diskType	No	String	Type of disk, such as FMC, FMD, SAS, or SSD.
raidLevel	No	String	RAID level, such as RAID 5 or RAID 6.
raidLayout	No	String	RAID layout
speed	No	String	The speed of the disk, measured in revolutions per minute.
sizeToUseInBytes	Yes	String	The size to be used in creating and updating the pool (Based on all availableSizesInBytes).
name	No	String	Name of the tier.
label	No	String	Name of the storage pool. This should be a unique name for the storage pool.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
```

```
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
200	OK	Success.
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
204	No content	The request was successful, but the response does not exist.
400	Bad request	Required HTTP header was not specified.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
404	Not found	The specified storage system ID is not valid or the storage system does not exist.
409	Conflict	The specified resource type does not match the existing resource type.
412	Precondition failed	The server does not meet one of the preconditions that the requester put in the request.
503	Service unavailable	The server is currently unable to receive requests. Retry your request.
504	Gateway timeout	The request timed out waiting for a response. The Storage Advisor is not able to connect to the node.

Volume management resources

Request	Method	URI	Role
Listing volumes on page 124	GET	/v1/storage-systems/*storageSystemId*/volumes	Storage administrator

Request	Method	URI	Role
			System administrator Security administrator
Getting volume details on page 128	GET	/v1/storage-systems/*storageSystemId*/volumes/volumeId	Storage administrator System administrator Security administrator

The following requests can be used when you want to create, update, delete, or attach volumes in a pool in the storage system.

Request	Method	URI	Role
Creating a volume on page 134	POST	/v1/storage-systems/*storageSystemId*/volumes	Storage administrator
Updating a volume on page 138	POST	/v1/storage-systems/*storageSystemId*/volumes	Storage administrator
Deleting a volume on page 141	DELETE	/v1/storage-systems/*storageSystemId*/volumes	Storage administrator
Detaching a volume on page 144	POST	/v1/volume-manager/detach	Storage administrator
Edit volume LUN path on page 169	POST	/v1/volume-manager/edit-lun-paths	Storage administrator
Getting auto-selection paths on page 174	GET	/v1/volume-manager/auto-path-select	Storage administrator
Getting host groups on page 178	GET	/v1/storage-systems/*storageSystemId*/hostgroups	Storage administrator

The following requests can be used when you want to make bulk volume management requests:

Request	Method	URI	Role
Creating multiple volumes on page 146	POST	/v1/volume-manager/create	Storage administrator
Attaching volumes on page 150	POST	/v1/volume-manager/attach	Storage administrator

Request	Method	URI	Role
Creating and attaching volumes on page 156	POST	/v1/volume-manager/create-attach	Storage administrator
Creating, attaching, and protecting volumes on page 163	POST	/v1/volume-manager/create-attach-protect	Storage administrator

Listing volumes

You can display a list of all volumes in a storage system.

HTTP request syntax (URI)

`GET https://ipAddress/v1/storage-systems/storageSystemId/volumes`

Use the storage system ID as the *storagesystemId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
    "resources":
    [
        {
            "volumeId": ,
            "storageSystemId": "",
            "poolId": "",
            "label": "",
            "size": "",
            "usedCapacity": "",
            "availableCapacity": "",
            "utilization": ,
            "status": "",
            "type": "",
            "provisioningStatus": "",
            "attachedVolumeServerSummary":
              {
                [
                  {
                     "serverId": ,
                     "paths":
                       [
                         {
                           "storagePortId": "",
                           "storageSystemId": "",
                           "lun": ,
                           "name": "",
                           "hostMode": "",
                           "wwns": [],
                           "hostModeOptions": []
```

```
                        }
                    ]
                }

            "dataProtectionSummary": "",
            {
                "replicationType": [],
                "volumeType": [],
                "replicationGroupIdMap":
                {
                },
                "hasFailures": ,
                "secondaryVolumeCount": ,
                "secondaryVolumeFailures":
            },
            "gadSummary":
            {
                "vsmId": "",
                "virtualLdevId": "",
                "volumeType": ""
            },
            "dkcDataSavingType": "",
        }
    ]
    "total": ,
    "nextToken":
}
```

Parameter	Type	Description
volumeId	Long	ID number of the volume within the parent storage system.
storageSystemId	String	ID of the storage system.
poolId	String	ID of the pool from which the resource is allocated.
label	String	Name of the volume.
size	Long	Size of the volume, in bytes.
usedCapacity	Long	Sum of used capacity per volume resource, in bytes.
availableCapacity	Long	Unused capacity of the resource, in bytes.
utilization	Integer	The percentage usage of the volume capacity. The utilization percentage= (usedCapacity/size) *100.
status	String	Volume status: Valid values: NORMAL, BLOCKED, BUSY, UNKNOWN, or NONE.
type	String	Type of pool from which the volume is allocated. Valid values: HDP, HDT, or HTI.
provisioningStatus	String	Provisioning status of a volume. Valid values: ATTACHED, UNATTACHED, or UNMANAGED.

Parameter	Type	Description
attachedVolumeServerSummary	List	Volume provisioning summary details.
serverId	Integer	ID of the server.
paths	List	Paths that exist on the volume.
storagePortId	Long	ID of the storage port.
storageSystemId	String	ID of the storage system.
lun	Integer	ID of the LUN.
name	String	Name of the resource.
hostMode	String	Host mode set for the volume.
wwns	List	List of World Wide Names.
hostModeOptions	List of Integers	Host mode options for the volume.
dataProtectionSummary	Object	List of the data protection attributes of the volume.
replicationType	String	Volume replication type. Valid values: • SNAP_ON_SNAP: Snapshot pair that can be cascaded. • SNAP_CLONE: A pair relationship in which the secondary volume of the pair will be a real volume of the primary volume. • CLONE • SNAP: Snapshot
volumeType	Set	Type of volume in the replication. Valid values: P-VOL, S-VOL, or UNPROTECTED.
replicationGroupIdMap	Object	Replication group ID map. Consisting of the replication group ID and the replication group name for each of the replication group the volume belongs to.
hasFailures	Boolean	Whether or not the volume has replication failures.
secondaryVolumeCount	Integer	Count of secondary volume pairs protecting the primary volume.
secondaryVolumeFailures	Integer	Count of failed volume pairs where this volume is a S-VOL.
gadSummary	Object	List of the GAD attributes of the volume. If there is no GAD pair, this returns null.
vsmId	String	ID number of the virtual storage machine (VSM).
virtualLdevID	String	ID number of the virtual volume.
volumeType	String	Volume type. Valid values: Active-Primary, Active-Secondary
dkcDataSavingType	String	Type of controller-based capacity saving. Valid values are COMPRESSION,

Parameter	Type	Description
		DEDUPLICATION_AND_COMPRESSION, and NONE.
total	Long	Total number of resources.
nextToken	String	The API will return up to 100 resources with one call. This parameter is used for pagination when there are more than 100 resources in the system. At the bottom of the returned response is a link to another GET call you can make to retrieve the next page of resources. Copy the href link that includes the next token and paste it in your Storage Advisor browser.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example Request

```
GET https://172.17.64.116/v1/storage-systems/410209/volumes
```

Example response

```
{
    "resources":
    [
        {
            "volumeId": 68,
            "storageSystemId": "410209",
            "poolId": "0",
            "label": "100-GAD-PAIRS_41176_41180129",
            "size": 5368709120,
            "usedCapacity": 0,
            "availableCapacity": 5368709120,
            "utilization":
0,
            "status":
"NORMAL",
```

```
                "type": "HDT":,
                "provisioningStatus": "ATTACHED"
                "attachedVolumeServerSummary":
                  {
                    [
                      {
                         "serverId": 1,
                         "paths":
                           [
                             {
                               "storagePortId": "CL2-G",
                               "storageSystemId": "410209",
                               "lun": 33,
                               "name": "GAD_ESX_6524",
                               "hostmode": "VMWARE",
                               "wwns": ["5000087000536424"],
                               "hostModeOptions": []
                             }
                           ]
                      }
                    ]
                "dataProtectionSummary":
                {
                    "replicationType": ["SNAP"],
                    "volumeType": ["P-VOL"],
                    "replicationGroupIdMap":
                    {
                        "7": "RL_SNAP_41180_41176_68"
                    },
                    "hasFailures": false,
                    "secondaryVolumeCount": 2,
                    "secondaryVolumeFailures": 0
                },
                "gadSummary": {
                    "vsmId": "2",
                    "virtualLdevId": "68",
                    "volumeType": "Active-Primary"
                },
                "dkcDataSavingType": "NONE",
            }

            ...
        ],
    "total": 12,
    "nextToken": null
}
```


Getting volume details

You can display the detailed information for a specific volume in the storage system.

HTTP request syntax (URI)

`GET https://`*`ipAddress`*`/v1/storage-systems/`*`storageSystemId`*`/volumes/`*`volumeId`*

Use the storage system ID as the *storagesystemId*.

Use the volume ID as the *volumeId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
        "volumeId": ,
        "storageSystemId": "",
        "poolId": "",
        "label": "",
        "size": "",
        "usedCapacity": "",
        "availableCapacity": "",
        "utilization": ,
        "status": "",
        "type": "":,
        "provisioningStatus": ""
        "attachedVolumeServerSummary":
          {
            [
              {
                 "serverId": ,
                 "paths":
                   [
                     {
                       "storagePortId": "",
                       "storageSystemId": "",
                       "lun": ,
                       "name": "",
                       "hostmode": "",
                       "wwns":
                         [""],
                       "hostModeOptions": []
                 }
               ]
             }
        ]
        "dataProtectionSummary": "",
        {
            "replicationType":
            [""],
            "volumeType":
            [""],
            "replicationGroupIdMap":
            {
            },
            "hasFailures": ,
            "secondaryVolumeCount": ,
            "secondaryVolumeFailures":
        },
```

```
        "gadSummary": {
                "vsmId": "",
                "virtualLdevId": "",
                "volumeType": ""
         },
        "dkcDataSavingType": "",
        ]
}
```

Parameter	Type	Description
volumeId	Long	ID number of the volume within the parent storage system.
storageSystemId	String	ID of the storage system.
poolId	String	ID of the pool from which the resource is allocated.
label	String	Name of the volume.
size	Long	Size of the volume, in bytes.
usedCapacity	Long	Sum of used capacity per volume resource, in bytes.
availableCapacity	Long	Unused capacity of the resource, in bytes.
utilization	Integer	The percentage usage of the volume capacity. The utilization percentage= (usedCapacity/size) *100.
status	String	Volume status: Valid values: NORMAL, BLOCKED, BUSY, UNKNOWN, or NONE.
type	String	Type of pool from which the volume is allocated. Valid values: HDP, HDT, or HTI.
provisioningStatus	String	Provisioning status of a volume. Valid values: ATTACHED, UNATTACHED, or UNMANAGED.
attachedVolumeServerSummary	List	Volume provisioning summary details.
serverId	Integer	ID of the server.
paths	List	Paths that exist on the volume.
storagePortId	Long	ID of the storage port.
storageSystemId	String	ID of the storage system.
lun	Integer	ID of the LUN.
name	String	Name of the resource.
hostMode	String	Host mode set for the volume.
wwns	List	List of World Wide Names.
hostModeOptions	List of Integers	Host mode options for the volume.
dataProtectionSummary	Object	List of the data protection attributes of the volume.
replicationType	String	Volume replication type. Valid values:

Parameter	Type	Description
		• SNAP_ON_SNAP: Snapshot pair that can be cascaded. • SNAP_CLONE: A pair relationship in which the secondary volume of the pair will be a real volume of the primary volume. • CLONE • SNAP: Snapshot
volumeType	Set	Type of volume in the replication. Valid values: P-VOL, S-VOL, or UNPROTECTED.
replicationGroupIdMap	Object	Replication group ID map. Consisting of the replication group ID and the replication group name for each of the replication group the volume belongs to.
hasFailures	Boolean	Whether or not the volume has replication failures.
secondaryVolumeCount	Integer	Count of secondary volume pairs protecting the primary volume.
secondaryVolumeFailures	Integer	Count of failed volume pairs where this volume is a S-VOL.
gadSummary	Object	List of the GAD attributes of the volume. If there is no GAD pair, this returns null.
vsmId	String	ID number of the virtual storage machine (VSM).
virtualLdevID	String	ID number of the virtual volume.
volumeType	String	Volume type. Valid values: Active-Primary, Active-Secondary
dkcDataSavingType	String	Type of controller-based capacity saving. Valid values are COMPRESSION, DEDUPLICATION_AND_COMPRESSION, and NONE.
total	Long	Total number of resources.
nextToken	String	The API will return up to 100 resources with one call. This parameter is used for pagination when there are more than 100 resources in the system. At the bottom of the returned response is a link to another GET call you can make to retrieve the next page of resources. Copy the href link that includes the next token and paste it in your Storage Advisor browser.

Return codes

Status code	HTTP name	Description
200	OK	Success.

Status code	HTTP name	Description
400	Bad request	Required HTTP header was not specified.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.111/v1/storageSystems/100100100101/volumes/5
```

Example response


```
{
       "volumeId": 68,
       "storageSystemId": "410209",
       "poolId": "0",
       "label": "100-GAD-PAIRS_41176_41180129",
       "size": "5368709120",
       "usedCapacity": "0",
       "availableCapacity": "5368709120",
       "utilization": 0,
       "status":
"NORMAL",
       "type": "HDT":,
       "provisioningStatus": "ATTACHED"
       "attachedVolumeServerSummary":
         {
           [
             {
                "serverId": 1,
                "paths":
                  [
                    {
                      "storagePortId": "CL2-G",
                      "storageSystemId": "410209",
                      "lun": 33,
                      "name": "GAD_ESX_6524",
                      "hostmode": "VMWARE",
                      "wwns": ["5000087000536424"],
                      "hostModeOptions": []
                    }
                  ]
             }
           ]
         }
```

```
          "dataProtectionSummary":
          {
             "replicationType": ["SNAP"],
             "volumeType": ["P-VOL"],
             "replicationGroupIdMap":
             {
                 "7": "RL_SNAP_41180_41176_68"
             },
             "hasFailures": false,
             "secondaryVolumeCount": 2,
             "secondaryVolumeFailures":0
          },
          "gadSummary":
          {
                "vsmId": "2",
                "virtualLdevId": "68",
                "volumeType": "Active-Primary"
          },
          "dkcDataSavingType": "NONE",
 }
```

Getting volumes summary

You can display a list of volumes with pool types attached to the volumes.

HTTP request syntax (URI)

`GET https://`*`ipAddress`*`/v1/storage-systems/`*`storageSystemId`*`/volumes/summary`

Use the storage system ID as the *storageSystemId*.

Response structure

The response body structure is shown below:

```
{
   "volumeCountByType":
   {
    "HDP":
    "HDT":
    "HTI":
   },
  "numberOfVolumes":
}
```

Parameter	Type	Description
volumeCountByType	List	List of pool types where the volume is attached.
numberOfVolumes	Integer	Total number of volumes.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.111/v1/storage-systems/410031/volumes/summary
```

Example response

```
{
  "volumeCountByType":
   {
    "HDT": 1,
    "HDP": 6
   },
  "numberOfVolumes": 7
}
```

Creating a volume

You can create a volume on a given pool or create a snapshot of a volume.

HTTP request syntax (URI)

`POST https://`*`ipAddress`*`/v1/storage-systems/`*`storageSystemId`*`/volumes`

Use the storage system ID where the volume is to be created as the *storageSystemId*.

Request structure

The request body structure is shown below:

```
{
  "capacityInBytes": "",
  "poolId": "",
  "dkcDataSavingType": ""
  "label": ""
}
```

Parameter	Required	Type	Description
capacityInBytes	Yes	Long	The size of the volume to be created.
poolId	Yes	String	ID of the storage pool.
dkcDataSavingType	No	String	Type of controller-based capacity saving. Valid values are COMPRESSION and DEDUPLICATION_AND_COMPRESSION. The deduplication setting of the target storage pool is automatically enabled if DEDUPLICATION_AND_COMPRESSION is selected, and if it is the first time a storage pool creates volumes using deduplication and compression.
label	No	String	Description of the volume up to 32 characters. The following characters are not supported: :,;*?"<>

Response structure

The response body structure is shown below:

```
{
    "jobId": "",
    "title":
    {
        "text": "",
        "messageCode": "",
        "parameters":
        {
        }
    },
    "user": "",
    "status": "",
    "startDate": ,
    "endDate": ,
    "parentJobId": ,
    "reports":
    [
    ],
    "links":
    [
        {
            "rel": "",
            "href": ""
        }
    ],
    "tags":
    [
    ],
    "isSystem":
}
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
400	Bad request	Required HTTP header was not specified.
401	Unauthorized	The operation is not authorized.

Status code	HTTP name	Description
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
{
"capacityInBytes": "5368709120",
"poolId": "0",
"dkcDataSavingType": "DEDUPLICATION_AND_COMPRESSION"
"label": "test-volume-MD"
}
```

Example request

```
https://172.17.64.111/v1/440084/volumes
```

Example response

```
    {
        "jobId": "1f201bfe-a49b-4269-84b7-dc53c38f5bf6",
        "title":
        {
            "text": "Create volume",
            "messageCode": "CreateVolumeJobTitleMessage",
            "parameters":
            {
            }
        },
        "user": "sysadmin",
        "status": "IN_PROGRESS",
        "startDate": 1456964712680,
        "endDate": null,
        "parentJobId": null,
        "reports":
        [
        ],
        "links":
        [
            {
                "rel": "_self",
                "href": "/v1/jobs/1f201bfe-a49b-4269-84b7-
dc53c38f5bf6"
            }
```

```
        ],
        "tags":
        [
        ],
        "isSystem": false
    }
```

Updating a volume

You can rename or expand a volume on a storage system. If a volume is a part of a replication group it cannot be updated or deleted.

HTTP request syntax (URI)

`POST https://ipAddress/v1/storage-systems/storageSystemId/volumes/volumeId`

Use the storage system ID where the volume is to be updated as the *storageSystemId*.

Request structure

The request body structure is shown below:

```
{
  "capacityInBytes": "",
  "label": ""
  "dkcDataSavingType": ""
}
```

Parameter	Required	Type	Description
capacityInBytes	Yes	Long	Expanded size of the volume. The new size should be larger than the current size of the volume.
label	No	String	Description of the volume up to 32 characters. The following characters are not supported: :,;*?"<>
dkcDataSavingType	No	String	Type of controller-based capacity saving. Valid values are COMPRESSION, DEDUPLICATION_AND_COMPRESSION, and NONE. The deduplication setting of the target storage pool is automatically enabled if DEDUPLICATION_AND_COMPRESSION is selected, and if it is the first time a storage pool creates volumes using deduplication and compression.

Response structure

The response body structure is shown below:

```
{
    "jobId": "",
    "title":
    {
        "text": "",
        "messageCode": "",
        "parameters":
        {
        }
    },
    "user": "",
    "status": "",
    "startDate": ,
    "endDate": ,
    "parentJobId": ,
    "reports":
    [
    ],
    "links":
    [
        {
            "rel": "",
            "href": ""
        }
    ],
    "tags":
    [
    ],
    "isSystem":
}
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors

Parameter	Type	Description
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

The request with JSON command:

```
{
"capacityInBytes": "5368709120",
"label": "test-volume-MD"
"dkcDataSavingType": "DEDUPLICATION_AND_COMPRESSION"
}
```

Example request

The request with JSON command:

```
https://172.17.64.111/v1/storage-systems/410500/volumes/volumeId
```

Deleting a volume

You can delete a volume from a specified storage system.

HTTP request syntax (URI)

`DELETE https://`*`ipAddress`*`/v1/storage-systems/`*`storageSystemId`*`/volumes/`*`volumeId`*

Use the storage system ID where the volume is to be deleted as the *storageSystemId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
    "jobId": "",
    "title":
    {
        "text": "",
        "messageCode": "",
        "parameters":
        {
        }
    },
    "user": "",
    "status": "",
    "startDate": ,
    "endDate": ,
    "parentJobId": ,
    "reports":
    [
    ],
    "links":
    [
        {
            "rel": "",
            "href": ""
        }
    ],
    "tags":
    [
    ],
```

```
        "isSystem":
    }
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.

Status code	HTTP name	Description
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

The request with JSON command:

```
https://172.17.64.111/v1/storage-systems/410500/volumes/17
```

Example response

```
    {
        "jobId": "fa9e6498-a578-43ab-a870-7a47cf7f821e",
        "title":
        {
            "text": "Delete volume",
            "messageCode": "DeleteVolumeJobTitleMessage",
            "parameters":
            {
            }
        },
        "user": "sysadmin",
        "status": "IN_PROGRESS",
        "startDate": 1456966858017,
        "endDate": null,
        "parentJobId": null,
        "reports":
        [
        ],
        "links":
        [
            {
                "rel": "_self",
                "href": "/v1/jobs/fa9e6498-a578-43ab-
a870-7a47cf7f821e"
            }
        ],
        "tags":
        [
        ],
        "isSystem": false
    }
```

Detaching a volume

You can detach a volume from a server.

HTTP request syntax (URI)

```
POST https://ipAddress/v1/volume-manager/detach
```

Request Structure

```
{
  "volumeId": ,
  "serverId": ,
  "storageSystemId": "",
  "removeConnection":
}
```

Parameter	Required	Type	Description
volumeId	Yes	String	ID of the volume to be detached.
serverId	Yes	Integer	ID of the server that the volume is detaching from.
storageSystemId	Yes	String	ID of the storage system.
removeConnection	Yes	Boolean	Whether or not the zoning access to the server is removed.

Response structure

The response body structure is shown below:

```
{
    "jobId": "",
    "title":
    {
        "text": "",
        "messageCode": "",
        "parameters":
        {
        }
    },
    "user": "",
    "status": "",
    "startDate": ,
    "endDate": ,
    "parentJobId": ,
    "reports":
    [
    ],
    "links":
    [
        {
            "rel": "",
            "href": ""
        }
```

```
        ],
        "tags":
        [
        ],
        "isSystem":
    }
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the

Status code	HTTP name	Description
		processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
{
  "volumeId": "17",
  "serverId": "3",
  "storageSystemId": "440084",
  "removeConnection": "false"
}
```

Example request

```
https://172.17.64.111/v1/volume-manager/detach
```

Creating multiple volumes

You can create different volumes, poolType, and tier on the storage system. If a pool ID is not specified, the least utilized pool for the given pool type is selected.

HTTP request syntax (URI)

`POST https://ipAddress/v1/volume-manager/create`

Request structure

The request body structure is shown below:

```
{
   "storageSystemId": "",
   "volumes": [{
      "poolType": "",
      "numberOfVolumes": ,
      "label": "",
      "suffix": ,
      "capacity": "",
      "poolId":,
```

```
      "dkcDataSavingType": "",
      }]
}
```

Parameter	Required	Type	Description
storageSystemId	Yes	String	Storage system ID.
poolType	Yes	String	The pool type can be HDT or the name of a tier that is available in the system.
numberOfVolumes	Yes	Integer	Number of volumes. Must be greater than zero.
label	No	String	Name of the volume.
suffix	No	Integer	Suffix number appended to the end of the volume name.
capacity	Yes	Long	The size of the volume to be created.
poolId	No	String	ID of the storage pool. If poolId is not specified, then the least utilized pool of the specified type is selected.
dkcDataSavingType	No	String	Type of controller-based capacity saving. Valid values are COMPRESSION and DEDUPLICATION_AND_COMPRESSION. The deduplication setting of the target storage pool is automatically enabled if DEDUPLICATION_AND_COMPRESSION is selected, and if it is the first time a storage pool creates volumes using deduplication and compression.

Response structure

The response body structure is shown below:

```
    {
        "jobId": "",
        "title":
        {
            "text": "",
            "messageCode": "",
            "parameters":
            {
            }
        },
        "user": "",
        "status": "",
        "startDate": ,
        "endDate": ,
        "parentJobId": ,
        "reports":
        [
        ],
        "links":
        [
            {
```

```
                "rel": "",
                "href": ""
            }
        ],
        "tags":
        [
        ],
        "isSystem":
    }
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.

Status code	HTTP name	Description
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
{
    "storageSystemId": "410395",
    "volumes": [{
  "poolType": "Platinum",
  "numberOfVolumes": 1,
  "label": "Test",
  "suffix": 0,
  "capacity": "1073741824",
  "poolId": 0
  "dkcDataSavingType": "DEDUPLICATION_AND_COMPRESSION",
  }]
}
```

Example request

```
https://172.17.64.118/v1/volume-manager/create
```

Example response

```
{
  "jobId": "9759454d-1c97-4d9a-9528-152855406af2",
  "title": {
    "text": "Create volumes from template",
    "messageCode": "CreateVolumesFromTemplateJobTitleMessage",
    "parameters": {}
  },
  "user": "sysadmin",
  "status": "IN_PROGRESS",
  "startDate": 1456776122736,
  "endDate": null,
  "parentJobId": null,
  "reports": [],
  "links": [
    {
```

```
      "rel": "_self",
      "href": "/v1/jobs/9759454d-1c97-4d9a-9528-152855406af2"
    }
  ],
  "tags": [],
  "isSystem": false
}
```

Attaching volumes

You can attach one or more volumes to servers registered in Storage Advisor.

HTTP request syntax (URI)

```
POST https://ipAddress/v1/volume-manager/attach
```

Request structure

The request body structure is shown below:

```
{
 "storageSystemId": "",
 "hostMode": "",
 "hostModeOptions": [
 ],
 "enableZoning": ,
 "enableLunUnification": ,
 "volumes": [
    {
       "lun": ,
       "volumeId":
    },
    ...
 ],
 ports:[
   {
      "serverId": ,
      "serverWwns": [""]
      "portIds": [""]
   },
 ]
}
```

Parameter	Required	Type	Description
storageSystemId	No	String	ID of the storage system.
hostMode		String	Host mode set for the volume.
hostModeOptions	No	intendedImage	Host mode options set for the volume. Default values are automatically set in

Parameter	Required	Type	Description
			case the server OS is either VMWARE_EX or WIN_EX. The valid values are as follows: • null - AutoSelect • 2 - VERITAS Database Edition/ Advanced Cluster • 6 - TPRLO • 7 - Automatic recognition function of LUN • 12 - No display for ghost LUN • 13 - SIM report at link failure • 14 - HP TruCluster with TrueCopy function • 15 - HACMP • 22 - VERITAS Cluster Server • 23 - REC command support • 25 - Windows Server Failover Cluster (WSFC), Microsoft Failover Cluster (MSFC), Symantec Cluster Server (old name : Veritas Cluster Server (VCS)), or run the PERSISTENT RESERVE OUT (Service Action = REGISTER AND IGNORE EXISTING KY) command. • 33 - Set/Report Device Identifier enable • 39 - Change the nexus specified in the SCSI Target Reset • 40 - V-Vol expansion • 41 - Prioritized device recognition command • 43 - Returns Queue Full to the host when a command

Parameter	Required	Type	Description
			queue USP V or USP VM is full • 49 - BB Credit Set Up Option 1 • 50 - BB Credit Set Up Option 2 • 51 - Round trip Set up Option • 54 - (VAAI) Support Option for the EXTENDED COPY command • 60 - LUNO Change Guard • 63 - (VAAI) Support option for vStorage APIs based on T10 standards • 67 - Change of the ED_TOV value • 68 - Support Page Reclamation for Linux • 71 - Change the Unit Attention for Blocked Pool-VOLs • 72 - AIX GPFS Support • 73 - Support Option for WS2012 • 78 - The non-preferred path option • 80 - Multi Text OFF Mode • 81 - Connect Open Enterprise Server produced by Novell or winBoot/i produced by emBoot • 82 - Discovery CHAP Mode • 83 - Report iSCSI Full Portal List Mode • 88 - Port Consolidation • 96 - Change the nexus specified in the SCSI Logical Unit Reset • 97 - Proprietary ANCHOR command support • 100 - Hitachi HBA (Fabric Emulation

Parameter	Required	Type	Description
			Mode) Connection Option • 102 - (GAD) Standard Inquiry Expansion for HCS • 105 - Task Set Full response in the event of IO overload
enableZoning	No	Boolean	Whether or not zones are created on the SAN fabric. If enableZoning is set to false, then zoning is disabled. Default value false.
enableLunUnification	No	Boolean	Whether or not Lun (logical unit number) assignments for volumes that span multiple servers are consistent.
lun	No	Integer	Logical unit number. Enter a number from 0 to 2047.
volumeId	Yes	Long	ID of the volume.
serverId	Yes	Integer	ID of the server.
serverWwns	No	List	The WWNs for a server. If a WWN is not specified, then all WWNs associated with the server are used.
portIds	No	List	Port IDs.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
```

```
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.118/v1/volume-manager/attach
```

```
{
 "hostMode": "LINUX",
 "hostModeOptions": [
   4,
   5
 ],
 "enableZoning": false,
 "enableLunUnification": false,
 "volumes": [
    {
       "lun": 1,
       "volumeId": 2
    },
    ...
 ],
 ports:[
   {
      "serverId": 1,
      "serverWwns": ["1122334455667788"]
      "portIds": ["CL1-A"]
   },
   {
      "serverId": 1,
      "serverWwns": ["2222334455667788"]
      "portIds": ["CL1-A"]
   }
   ...
 ]
}
```

Creating and attaching volumes

You can create multiple volumes on the storage system and attach them to servers registered in Storage Advisor.

Note: This API will be usable in Storage Advisor v2.1, but will be deprecated in the following version.

Prerequisites

- There are valid parity groups, pools, servers, intended image type, port ID, and host WWNs in the storage system.
- The intended image type must match the OS on the server.
- There is sufficient disk capacity for all the volumes to be created in the specified pool or pool type in the storage system.

HTTP request syntax (URI)

```
POST https://ipAddress/v1/volume-manager/create-attach
```

Request Structure

The request body structure is shown below:

```
   {
   "storageSystemId": "",
   "hostModeOptions": [],
   "intendedImageType":"",
   "ports": [{
      "serverId": ,
      "serverWwns": [""],
      "portIds": [""]
   }],
   "enableZoning": ,
   "enableLunUnification": ,
   "volumes": [{
      "poolType": "",
      "numberOfVolumes": ,
      "label": "",
      "suffix": ,
      "capacity": "",
      "poolId":
      "dkcDataSavingType": ""
   }]
}
```

Parameter	Required	Type	Description
storageSystemId	No	String	ID of the storage system.
hostModeOptions	No	intendedImage	Host mode options set for the volume. Default values are automatically set in case the server

Parameter	Required	Type	Description
			OS is either VMWARE_EX or WIN_EX. The valid values are as follows: • null - AutoSelect • 2 - VERITAS Database Edition/Advanced Cluster • 6 - TPRLO • 7 - Automatic recognition function of LUN • 12 - No display for ghost LUN • 13 - SIM report at link failure • 14 - HP TruCluster with TrueCopy function • 15 - HACMP • 22 - VERITAS Cluster Server • 23 - REC command support • 25 - Windows Server Failover Cluster (WSFC), Microsoft Failover Cluster (MSFC), Symantec Cluster Server (old name : Veritas Cluster Server (VCS)), or run the PERSISTENT RESERVE OUT (Service Action = REGISTER AND IGNORE EXISTING KY) command. • 33 - Set/Report Device Identifier enable • 39 - Change the nexus specified in the SCSI Target Reset • 40 - V-Vol expansion • 41 - Prioritized device recognition command • 43 - Returns Queue Full to the host when a command queue USP V or USP VM is full • 49 - BB Credit Set Up Option 1 • 50 - BB Credit Set Up Option 2 • 51 - Round trip Set up Option • 54 - (VAAI) Support Option for the EXTENDED COPY command • 60 - LUNO Change Guard • 63 - (VAAI) Support option for vStorage APIs based on T10 standards • 67 - Change of the ED_TOV value • 68 - Support Page Reclamation for Linux • 71 - Change the Unit Attention for Blocked Pool-VOLs • 72 - AIX GPFS Support • 73 - Support Option for WS2012 • 78 - The non-preferred path option • 80 - Multi Text OFF Mode • 81 - Connect Open Enterprise Server produced by Novell or winBoot/i produced by emBoot • 82 - Discovery CHAP Mode • 83 - Report iSCSI Full Portal List Mode • 88 - Port Consolidation • 96 - Change the nexus specified in the SCSI Logical Unit Reset • 97 - Proprietary ANCHOR command support • 100 - Hitachi HBA (Fabric Emulation Mode) Connection Option

Parameter	Required	Type	Description
			• 102 - (GAD) Standard Inquiry Expansion for HCS • 105 - Task Set Full response in the event of IO overload
intendedImageType	No	String	The server operating system. If an OS is not specified, then all the servers must have the same OS. Valid values: "HP_UX,SOLARIS,AIX,WIN,LINUX,TRU64,OVMS, NETWARE,HI_UX,VMWARE,VMWARE_EX,WIN_EX ,UVM".
ports	No	List	Collection of ports.
serverId	Yes	Integer	ID of the server.
serverWwns	No	List	The WWNs for a server. If a WWN is not specified, then all WWNs associated with the server are used.
portIds	No	List	Port IDs.
enableZoning	No	Boolean	Whether or not zones are created on the SAN fabric. If enableZoning is set to false, then zoning is disabled. Default value false.
enableLunUnification	No	Boolean	Whether or not Lun (logical unit number) assignments for volumes that span multiple servers are consistent.
volumes	No	List	Collection of volume items.
poolType	Yes	String	The pool type can be HDT or the name of a tier that is available in the system.
numberOfVolumes	Yes	Integer	Number of volumes. Must be greater than zero.
label	No	String	The name of the resource.
suffix	No	Integer	Suffix number appended to the end of the volume name.
capacity	No	Long	Tier capacity
poolId	Yes	String	ID of the storage pool.
dkcDataSavingType	No	String	Type of controller-based capacity saving. Valid values are COMPRESSION and DEDUPLICATION_AND_COMPRESSION. The deduplication setting of the target storage pool is automatically enabled if DEDUPLICATION_AND_COMPRESSION is selected, and if it is the first time a storage pool creates volumes using deduplication and compression.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.

Parameter	Type	Description
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example 1 (request)

The following JSON example creates four 1-gigabyte volumes in the bronze tier of a non-specified pool for a server (server ID 1). When a pool tier is specified as the pool type without a pool ID, Storage Advisor selects the available pool tiers that match the pool type in the storage system.

```
https://172.17.64.118/v1/volume-manager/create-attach

{
"storageSystemId": "410033",
"hostModeOptions": [],
"intendedImageType": "LINUX",
"ports": [
{ "serverId": 1, "serverWwns": [], "portIds": [] }

],
"enableZoning": true,
"enableLunUnification": false,
```

```
"volumes": [
{
"poolType": "Bronze",
"numberOfVolumes": 4,
"label": "TestCreateAttach",
"suffix": 0,
"capacity":1073741824,
"poolId": null
"dkcDataSavingType": "DEDUPLICATION_AND_COMPRESSION"
}
]
}
```

Example 2 (request)

The following JSON example creates four 1-gigabyte volumes in a unspecified tiered pool for a server (server ID 1). When you create a tiered pool volume without specifying a pool ID, Storage Advisor selects the least used tiered pool in the storage system.

```
https://172.17.64.111/v1/volume-manager/create-attach

{
"storageSystemId": "410033",
"hostModeOptions": [],
"intendedImageType": "VMWARE",
"ports": [
{ "serverId": 1, "serverWwns": [], "portIds": [] }

],
"enableZoning": true,
"enableLunUnification": false,
"volumes": [
{
"poolType": "HDT",
"numberOfVolumes": 4,
"label": "TestCreateAttach",
"suffix": 0,
"capacity":1073741824,
"poolId": null
"dkcDataSavingType": "DEDUPLICATION_AND_COMPRESSION"
}
]
}
```

Example 3 (request)

The following JSON example creates a single 1-gigabyte volume in the specified pool (pool ID 0) for a server (server ID 1).

```
https://172.17.64.118/v1/volume-manager/create-attach

{
```

```
    "storageSystemId": "410395",
    "hostModeOptions": [],
    "intendedImageType": "",
    "ports": [{
        "serverId": 1,
        "serverWwns": ["1000000000000000"],
        "portIds": ["CL1-A"]
    }],
    "enableZoning": false,
    "enableLunUnification": false,
    "volumes": [{
        "poolType": "Platinum",
        "numberOfVolumes": 1,
        "label": "TEST",
        "suffix": 0,
        "capacity": "1073741824",
        "poolId": 0
  "dkcDataSavingType": "DEDUPLICATION_AND_COMPRESSION"
    }]
}
```

Example 4 (request)

The following JSON example creates four 1-gigabyte volumes and attaches them to two servers that use consistent LUN IDs for the volumes.

```
https://172.17.64.118/v1/volume-manager/create-attach

{
"storageSystemId": "410033",
"hostModeOptions": [],
"intendedImageType": "win",
"ports": [
{ "serverId": 1, "serverWwns": [], "portIds": [] },
{ "serverId": 2, "serverWwns": [], "portIds": [] }

],
"enableZoning": true,
"enableLunUnification": true,
"volumes": [
{
"poolType": "Bronze",
"numberOfVolumes": 4,
"label": "TestCreateAttach",
"suffix": 0,
"capacity":1073741824,
"poolId": null
"dkcDataSavingType": "DEDUPLICATION_AND_COMPRESSION"
}
]
}
```

Creating, attaching, and protecting volumes

You can create multiple volumes of different sizes, attach them to multiple servers, and configure data protection in a single operation.

HTTP request syntax (URI)

```
POST https://ipAddress/v1/volume-manager/create-attach-protect
```

Request Structure

The request body structure is shown below:

```
{
    "storageSystemId": "",
    "hostModeOptions": [],
    "intendedImageType": "",
    "ports": [{
        "serverId": ,
        "serverWwns": [""],
        "portIds": [""]
    }],
    "enableZoning": ,
    "enableLunUnification": ,
    "volumes": [{
        "poolType": "",
        "numberOfVolumes": ,
        "label": "",
        "suffix": ,
        "capacity": "",
        "poolId":
        "dkcDataSavingType": "",
    }],
    "skipProtection": ,
    "replicationGroup": {
        "replicationType": "",
        "consistencyGroupNeeded": ,
        "replicationGroupName": "",
        "replicationGroupId": ,
        "schedule": {
            "hour": ,
            "minute": ,
            "recurringUnit": "",
            "recurringUnitInterval": ,
            "dayOfWeek": ,
            "dayOfMonth":
        },
        "numberOfBackups":
    }
}
```

Parameter	Required	Type	Description
storageSystemId	No	String	ID of the storage system.

Parameter	Required	Type	Description
hostModeOptions	No	intendedImage	Host mode options set for the volume. Default values are automatically set in case the server OS is either VMWARE_EX or WIN_EX. The valid values are as follows: • null - AutoSelect • 2 - VERITAS Database Edition/Advanced Cluster • 6 - TPRLO • 7 - Automatic recognition function of LUN • 12 - No display for ghost LUN • 13 - SIM report at link failure • 14 - HP TruCluster with TrueCopy function • 15 - HACMP • 22 - VERITAS Cluster Server • 23 - REC command support • 25 - Windows Server Failover Cluster (WSFC), Microsoft Failover Cluster (MSFC), Symantec Cluster Server (old name : Veritas Cluster Server (VCS)), or run the PERSISTENT RESERVE OUT (Service Action = REGISTER AND IGNORE EXISTING KY) command. • 33 - Set/Report Device Identifier enable • 39 - Change the nexus specified in the SCSI Target Reset • 40 - V-Vol expansion • 41 - Prioritized device recognition command • 43 - Returns Queue Full to the host when a command queue USP V or USP VM is full • 49 - BB Credit Set Up Option 1 • 50 - BB Credit Set Up Option 2 • 51 - Round trip Set up Option • 54 - (VAAI) Support Option for the EXTENDED COPY command • 60 - LUNO Change Guard • 63 - (VAAI) Support option for vStorage APIs based on T10 standards • 67 - Change of the ED_TOV value • 68 - Support Page Reclamation for Linux • 71 - Change the Unit Attention for Blocked Pool-VOLs • 72 - AIX GPFS Support • 73 - Support Option for WS2012 • 78 - The non-preferred path option • 80 - Multi Text OFF Mode • 81 - Connect Open Enterprise Server produced by Novell or winBoot/i produced by emBoot • 82 - Discovery CHAP Mode • 83 - Report iSCSI Full Portal List Mode • 88 - Port Consolidation • 96 - Change the nexus specified in the SCSI Logical Unit Reset • 97 - Proprietary ANCHOR command support

Parameter	Required	Type	Description
			• 100 - Hitachi HBA (Fabric Emulation Mode) Connection Option • 102 - (GAD) Standard Inquiry Expansion for HCS • 105 - Task Set Full response in the event of IO overload
intendedImageType	No	String	The server operating system. If an OS is not specified, then all the servers must have the same OS. Valid values: "HP_UX,SOLARIS,AIX,WIN,LINUX,TRU64,OVMS, NETWARE,HI_UX,VMWARE,VMWARE_EX,WIN_EX ,UVM".
ports	No	List	Collection of ports.
serverId	Yes	Integer	ID of the server.
serverWwns	No	List	The WWNs for a server. If a WWN is not specified, then all WWNs associated with the server are used.
portIds	No	String	Storage ports where the volume is attached. If ports are not specified, it automatically selects an available port.
enableZoning	No	Boolean	Whether or not zones are created on the SAN fabric. If enableZoning is set to false, then zoning is disabled. Default value false.
enableLunUnification	No	Boolean	Whether or not Lun (logical unit number) assignments for volumes that span multiple servers are consistent.
volumes	No	List	Collection of volume items.
poolType	Yes	String	The pool type can be HDT or the name of a tier that is available in the system.
numberOfVolumes	Yes	Integer	Number of volumes. Must be greater than zero.
label	No	String	Name of the volume.
suffix	No	Integer	Suffix number appended to the end of the volume name.
capacity	Yes	String	The file system size limit, in bytes. Min = 1, max = 1099511627776.
poolId	No	String	ID of the storage pool.
dkcDataSavingType	No	String	Type of controller-based capacity saving. Valid values are COMPRESSION and DEDUPLICATION_AND_COMPRESSION. The deduplication setting of the target storage pool is automatically enabled if DEDUPLICATION_AND_COMPRESSION is selected, and if it is the first time a storage pool

Parameter	Required	Type	Description
			creates volumes using deduplication and compression.
skipProtection	Yes	Boolean	Whether or not skip data protection. When skipProtection is true, all listed replication parameters are ignored.
replicationType	No	String	Type of replication technology to use, such as SNAP or CLONE.
consistencyGroupNeeded	No	Boolean	Whether a consistency group is needed or not.
replicationGroupName	No	String	Name of the replication group. Enter up to 28 alphanumeric characters, hyphens, and underscores in the name, but it must not start with a hyphen.
replicationGroupId	No	Long	ID of the replication group.
schedule	Yes	Object	Required if type is SNAP. Interval at which the snapshots are taken, such as: • hour; Integer, valid values: 0-23 • minute; Integer, valid values: 0-59 • recurringUnit; String, ('HOURLY', 'DAILY','WEEKLY', 'MONTHLY') • recurringUnitInterval; Integer, (null, or any positive integer) • dayOfWeek; String[ ], (null, or 'SUN', 'MON','TUE', 'WED', 'THU', 'FRI', 'SAT') • dayOfMonth; Integer, (null, or 1-31) Note: • Minute is required if HOURLY is chosen. • Hour and minute are required if DAILY is chosen • recurringUnitInterval is only applicable if HOURLY is chosen • dayOfWeek is only applicable if WEEKLY is chosen • dayOfMonth is only applicable if MONTHLY is chosen
numberOfBackups	No	Integer	Number of backup copies that needs to be created.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
```

```
        {
        }
    },
    "user": "",
    "status": "",
    "startDate": ,
    "endDate": ,
    "parentJobId": ,
    "reports":
    [
    ],
    "links":
    [
        {
            "rel": "_self",
            "href": "/v1/jobs/jobId"
        }
    ],
    "tags":
    [
    ],
    "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the

Parameter	Type	Description
		system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.115/v1/volume-manager/create-attach-protect
```

Example request

```
{
    "storageSystemId": "410395",
    "hostModeOptions": [],
    "intendedImageType":"LINUX",
    "ports": [{
        "serverId": 1,
        "serverWwns": ["1000000000000000"],
        "portIds": ["CL1-A"]
    }],
    "enableZoning": false,
    "enableLunUnification": false,
    "volumes": [{
        "poolType": "Platinum",
        "numberOfVolumes": 1,
        "label": "john",
        "suffix": 0,
        "capacity": "1073741824",
        "poolId": 0
        "dkcDataSavingType": "DEDUPLICATION_AND_COMPRESSION",
    }],
    "skipProtection": false,
```

```
    "replicationGroup": {
        "replicationType": "SNAP",
        "consistencyGroupNeeded": false,
        "replicationGroupName": "my-snapshot",
        "replicationGroupId": null,
        "schedule": {
            "hour": 0,
            "minute": 0,
            "recurringUnit": "DAILY",
            "recurringUnitInterval": null,
            "dayOfWeek": null,
            "dayOfMonth": null
        },
        "numberOfBackups": 1
    }
}
```

Edit volume LUN path

HTTP request syntax (URI)

`POST https://ipAddress/v1/volume-manager/edit-lun-paths`

Request structure

```
{

   "enableZoning": ,
   "hostMode":"",
   "hostModeOptions":[

   ],
   "updates":[
      {
         "storageSystemId":"",
         "volumeId":,
         "lun":
      }
   ]
}
```

Parameter	Required	Type	Description
enableZoning	Yes	Boolean	Provide the value "true" to edit the volume LUN path.
hostMode		String	Host mode set for the volume.
hostModeOptions	No	intendedImage	Host mode options set for the volume. Default values are automatically set in case the server OS is

Parameter	Required	Type	Description
			either VMWARE_EX or WIN_EX. The valid values are as follows: • null - AutoSelect • 2 - VERITAS Database Edition/ Advanced Cluster • 6 - TPRLO • 7 - Automatic recognition function of LUN • 12 - No display for ghost LUN • 13 - SIM report at link failure • 14 - HP TruCluster with TrueCopy function • 15 - HACMP • 22 - VERITAS Cluster Server • 23 - REC command support • 25 - Windows Server Failover Cluster (WSFC), Microsoft Failover Cluster (MSFC), Symantec Cluster Server (old name : Veritas Cluster Server (VCS)), or run the PERSISTENT RESERVE OUT (Service Action = REGISTER AND IGNORE EXISTING KY) command. • 33 - Set/Report Device Identifier enable • 39 - Change the nexus specified in the SCSI Target Reset • 40 - V-Vol expansion • 41 - Prioritized device recognition command • 43 - Returns Queue Full to the host when a command queue USP V or USP VM is full

Parameter	Required	Type	Description
			• 49 - BB Credit Set Up Option 1 • 50 - BB Credit Set Up Option 2 • 51 - Round trip Set up Option • 54 - (VAAI) Support Option for the EXTENDED COPY command • 60 - LUNO Change Guard • 63 - (VAAI) Support option for vStorage APIs based on T10 standards • 67 - Change of the ED_TOV value • 68 - Support Page Reclamation for Linux • 71 - Change the Unit Attention for Blocked Pool-VOLs • 72 - AIX GPFS Support • 73 - Support Option for WS2012 • 78 - The non-preferred path option • 80 - Multi Text OFF Mode • 81 - Connect Open Enterprise Server produced by Novell or winBoot/i produced by emBoot • 82 - Discovery CHAP Mode • 83 - Report iSCSI Full Portal List Mode • 88 - Port Consolidation • 96 - Change the nexus specified in the SCSI Logical Unit Reset • 97 - Proprietary ANCHOR command support • 100 - Hitachi HBA (Fabric Emulation Mode) Connection Option

Parameter	Required	Type	Description
			• 102 - (GAD) Standard Inquiry Expansion for HCS • 105 - Task Set Full response in the event of IO overload
updates	No	List	List of updates.
storageSystemId	No	String	ID of the storage system.
volumeId	No	Integer	ID of the volume.
lun	No	Integer	Logical unit number. Enter a number from 0 to 2047.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
202	Accepted	The request has been accepted for processing, but the processing has not been completed.

Example request

```
{

   "enableZoning":false,
   "hostMode":"WIN",
   "hostModeOptions":[
```

```
    ],
    "updates":[
       {
          "storageSystemId":"410033",
          "volumeId":3,
          "lun":1
       }
    ]
}
```

Getting auto-selection paths

If there are no existing host groups, this command specifies the return paths that Storage Advisor will select.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/volume-manager/auto-path-select
```

Request structure

```
{
  "storageSystemId": ""
  "hostMode": "",
  "hostModeOptions": [
  ],
 "serverIds": [
 ]
}
```

Parameter	Required	Type	Description
storageSystemId	No	String	ID of the storage system.
hostMode		String	Host mode set for the volume.
hostModeOptions	No	intendedImage	Host mode options set for the volume. Default values are automatically set in case the server OS is either VMWARE_EX or WIN_EX. The valid values are as follows: • null - AutoSelect • 2 - VERITAS Database Edition/ Advanced Cluster • 6 - TPRLO • 7 - Automatic recognition function of LUN

Parameter	Required	Type	Description
			• 12 - No display for ghost LUN • 13 - SIM report at link failure • 14 - HP TruCluster with TrueCopy function • 15 - HACMP • 22 - VERITAS Cluster Server • 23 - REC command support • 25 - Windows Server Failover Cluster (WSFC), Microsoft Failover Cluster (MSFC), Symantec Cluster Server (old name : Veritas Cluster Server (VCS)), or run the PERSISTENT RESERVE OUT (Service Action = REGISTER AND IGNORE EXISTING KY) command. • 33 - Set/Report Device Identifier enable • 39 - Change the nexus specified in the SCSI Target Reset • 40 - V-Vol expansion • 41 - Prioritized device recognition command • 43 - Returns Queue Full to the host when a command queue USP V or USP VM is full • 49 - BB Credit Set Up Option 1 • 50 - BB Credit Set Up Option 2 • 51 - Round trip Set up Option • 54 - (VAAI) Support Option for the EXTENDED COPY command • 60 - LUNO Change Guard

Parameter	Required	Type	Description
			• 63 - (VAAI) Support option for vStorage APIs based on T10 standards • 67 - Change of the ED_TOV value • 68 - Support Page Reclamation for Linux • 71 - Change the Unit Attention for Blocked Pool-VOLs • 72 - AIX GPFS Support • 73 - Support Option for WS2012 • 78 - The non-preferred path option • 80 - Multi Text OFF Mode • 81 - Connect Open Enterprise Server produced by Novell or winBoot/i produced by emBoot • 82 - Discovery CHAP Mode • 83 - Report iSCSI Full Portal List Mode • 88 - Port Consolidation • 96 - Change the nexus specified in the SCSI Logical Unit Reset • 97 - Proprietary ANCHOR command support • 100 - Hitachi HBA (Fabric Emulation Mode) Connection Option • 102 - (GAD) Standard Inquiry Expansion for HCS • 105 - Task Set Full response in the event of IO overload

Response structure

```
{
   "pathResources": [
```

```
        {
            "portId": "",
            "serverWwn": "",
            "hostMode": "",
            "hostModeOptions": [
            ]
        },
    ]
}
```

Parameter	Type	Description
portId	String	Port ID.
serverWwn	String	World wide network ID of the server.
hostMode	String	Host mode set for the volume.
hostModeOptions	List of Integers	Host mode options for the volume.

Return codes

Status code	HTTP name	Description
400	Bad request	Required HTTP header was not specified.

Example request

```
{
   "storageSystemId": "123456"
   "hostMode": "LINUX",
   "hostModeOptions": [
   4,
   2
  ],
  "serverIds": [
   6,
   34
 ]
}
```

Example response

```
{

   "pathResources": [
       {
           "portId": "CL4-C",
```

```
                "serverWwn": "100000053326f721",
                "hostMode": "LINUX",
                "hostModeOptions": [
                    71,
                    72,
                    78
                ]
            },
            {
                "portId": "CL1-A",
                "serverWwn": "100000053326f721",
                "hostMode": "LINUX",
                "hostModeOptions": [
                    71,
                    72,
                    78
                ]
            }
    ]
}
```

Getting host groups

Get a list of host groups for a storage system.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/storage-systems/{storageSystemId}/
hostgroups
```

Use the storage system ID as the *storagesystemId*.

Request structure

Not applicable.

Response structure

```
{
 "hostgroups": [
   {
     "hostGroupId": ,
     "storagePortId": "",
     "storageSystemId": "",
     "name": "",
     "hostMode": "",
     "hbaWwns": [
       "",
       ""
     ],
     "hostModeOptions": [

     ],
     "luns": [
       {
         "lun": ,
```

```
          "volumeId":
        },

      ]
    }
  ]
}
```

Parameter	Type	Description
hostGroupId	Long	ID of the host group.
storagePortId	Long	ID of the storage port.
storageSystemId	String	ID of the storage system.
name	String	Name of the host group.
hostMode	String	Host mode set for the volume.
hbaWwns	List	List of WWNs for the HBA.
hostModeOptions	List of Integers	Host mode options for the volume.
luns	List	List of LUNs and volumes.
lun	Long	LUN ID.
volumeId	Long	ID number of the volume within the parent storage system.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.111/v1/storageSystems/100100100101/hostgroups
```

Example response

```
{
 "hostgroups": [
   {
     "hostGroupId": 1,
     "storagePortId": "CL1-A",
```

```
    "storageSystemId": "1111",
    "name": "hostgroupName",
    "hostMode": "WIN",
    "hbaWwns": [
      "1111111111111111",
      "2222222222222222"
    ],
    "hostModeOptions": [
      2,
      5,
      23
    ],
    "luns": [
      {
        "lun": 2,
        "volumeId": 4
      },
      {
        "lun": 6,
        "volumeId": 8
      }
    ]
  }
 ]
}
```


Port management resources

Request	Method	URI	Role
Listing ports on page 180	GET	/v1/storage-systems/*storageSystemId*/storage-ports/	Storage administrator System administrator Security administrator
Listing a port on page 183	GET	/v1/storage-systems/*storageSystemId*/storage-ports/*storagePortId*	Storage administrator System administrator Security administrator
Updating ports on page 185	POST	/v1/storage-systems/*storageSystemId*/storage-ports/*storagePortId*	Storage administrator

Listing ports

You can list all the ports in a storage system.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/storage-systems/storageSystemId/storage-ports
```

Use the storage system ID as the *storageSystemId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
    "resources":
    [
        {
            "storagePortId": "",
            "storageSystemId": "",
            "wwn": "",
            "attributes":
            [
                "",
                "",
                "",
                ""
            ],
            "speed": "",
            "type": "",
            "loopId": "",
            "topology": "",
            "securitySwitchEnabled": ,
            "isVsmPort":
        },
        ...
    ],
    "total": ,
    "nextToken":
}
```

Parameter	Type	Description
storagePortId	String	ID of the storage port.
storageSystemId	String	ID of the storage system.
wwn	String	World wide name of the storage port.
attributes	List	Attribute on the port. Valid values: TARGET_PORT, MCU_INITIATOR_PORT,RCU_TARGET_PORT, EXTERNAL_INITIATOR_PORT. All ports are universal ports.
speed	String	Speed of the port, such as 1G, 2G, 4G, 8G, 10G, 16G, or AUTO.
type	String	Type of port, such as FIBRE, SCSI, ISCSI, ENAS, FICON, ESCON, FCOE, HNASU, or HNASS.

Parameter	Type	Description
loopId	String	For disks that are connected using Fibre Channel-Arbitrated Loop (FC-AL or FC), the loop ID identifies the disk within its loop, and is included in the disk name, which uniquely identifies the disk for the entire system. The loop ID is a hexadecimal number from 0x01 to 0xEF.
topology	String	Topology of the port, such as the following: • FABRIC_ON_ARB_LOOP • FABRIC_ON_POINT_TO_POINT • FABRIC_OFF_ARB_LOOP • FABRIC_OFF_POINT_TO_POINT • ISCSI
securitySwitchEnabled	Boolean	Security status of the port. If the status is false, it means security is enabled on the port and the port can be used to create a host storage domain (HSD) and provision storage.
isVsmPort	Boolean	Whether the port is being used by a VSM.
total	Long	Total number of resources.
nextToken	String	The API will return up to 100 resources with one call. This parameter is used for pagination when there are more than 100 resources in the system. At the bottom of the returned response is a link to another GET call you can make to retrieve the next page of resources. Copy the href link that includes the next token and paste it in your Storage Advisor browser.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource does not exist.

Example request

```
https://172.17.64.115/v1/storage-systems/440084/storage-ports
```

Example response

```
{
    "resources":
    [
```

```
            {
                "storagePortId": "CL1-D",
                "storageSystemId": "410031",
                "wwn": "50060E8012272F03",
                "attributes":
                [
                    "TARGET_PORT",
                    "MCU_INITIATOR_PORT",
                    "RCU_TARGET_PORT",
                    "EXTERNAL_INITIATOR_PORT"
                ],
                "speed": "AUTO",
                "type": "FIBRE",
                "loopId": "AC",
                "topology": "FABRIC_ON_POINT_TO_POINT",
                "securitySwitchEnabled": true
                "isVsmPort": false
            }
            ...
        ],
        "total": 16,
        "nextToken": null
    }
```

Listing a port

You can list port information for a storage port.

HTTP request syntax (URI)

`GET https://`*`ipAddress`*`/v1/storage-systems/`*`storageSystemId`*`/storage-ports/`*`storagePortId`*

Use the storage system ID as the *storageSystemId*.

Use the storage port ID as the *storagePortId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
    {
        "storagePortId": "",
        "storageSystemId": "",
        "wwn": "",
        "attributes":
        [
            "",
            "",
            "",
            ""
        ],
```

```
    "speed": "",
    "type": "",
    "loopId": "",
    "topology": "",
    "securitySwitchEnabled":,
    "isVsmPort":
}
```

Parameter	Type	Description
storagePortId	String	ID of the storage port.
storageSystemId	String	ID of the storage system.
wwn	String	World wide name of the storage port.
attributes	List	Attribute on the port. Valid values: TARGET_PORT, MCU_INITIATOR_PORT,RCU_TARGET_PORT, EXTERNAL_INITIATOR_PORT. All ports are universal ports.
speed	String	Speed of the port, such as 1G, 2G, 4G, 8G, 10G, 16G, or AUTO.
type	String	Type of port, such as FIBRE, SCSI, ISCSI, ENAS, FICON, ESCON, FCOE, HNASU, or HNASS.
topology	String	Topology of the port: • FABRIC_ON_ARB_LOOP • FABRIC_ON_POINT_TO_POINT • FABRIC_OFF_ARB_LOOP • FABRIC_OFF_POINT_TO_POINT • ISCSI
loopId	String	For disks that are connected using Fibre Channel-Arbitrated Loop (FC-AL or FC), the loop ID identifies the disk within its loop, and is included in the disk name, which identifies the disk uniquely for the entire system. The loop ID is a hexadecimal number from 0x01 to 0xEF.
securitySwitchEnabled	Boolean	Security status of the port. If the status is false, it means security is enabled on the port and the port can be used to create a host storage domain (HSD) and provision storage.
isVsmPort	Boolean	Whether the port is being used by a VSM.

Return codes

Status code	HTTP name	Description
200	OK	Success
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource does not exist.

Example request

```
    https://172.17.64.115/v1/storage-systems/440084/storage-
ports/CL1-D
```

Example response

```
{
    "storagePortId": "CL1-D",
    "storageSystemId": "440084",
    "wwn": "50060e80129c9403",
    "attributes":
    [
        "TARGET_PORT",
        "MCU_INITIATOR_PORT",
        "RCU_TARGET_PORT",
        "EXTERNAL_INITIATOR_PORT"
    ],
    "speed": "AUTO",
    "type": "FIBRE",
    "loopId": "AC",
    "topology": "FABRIC_ON_POINT_TO_POINT",
    "securitySwitchEnabled": true,
    "isVsmPort": false
}
```

Updating ports

You can modify the port configuration settings for a specific storage port, such as topology, loop ID, security, and speed. For VSP G1000 storage systems you can also change the port or role attributes.

HTTP request syntax (URI)

`POST https://`*`ipAddress`*`/v1/storage-systems/`*`storageSystemId`*`/storage-ports/`*`storagePortId`*

Use the storage system ID as the *storageSystemId*.

Use the storage port ID as the *storagePortId*.

Request structure

The request body structure is shown below:

```
{
"topology":" " ,
"loopId":" ",
"securitySwitchEnabled":" ",
"speed":" ",
```

```
"attribute":" "
}
```

Parameter	Required	Type	Description
topology	Yes	String	The topology of the port: • FABRIC_ON_ARB_LOOP • FABRIC_ON_POINT_TO_POINT • FABRIC_OFF_ARB_LOOP • FABRIC_OFF_POINT_TO_POINT • ISCSI
loopId	No	String	For disks that are connected using Fibre Channel-Arbitrated Loop (FC-AL or FC), the loop ID identifies the disk within its loop, and is included in the disk name, which identifies the disk uniquely for the entire system. The loop ID is a hexadecimal number from 0x01 to 0xEF.
securitySwitchEnabled	No	Boolean	The security status of the port. If the status is false, it means security is enabled on the port and the port can be used to create an HSD and provision storage.
speed	No	String	The speed of the port. Valid values: 1G, 2G, 4G, 8G, 10G, 16G, or AUTO.
attribute	No	String	Port attribute. Valid values: TARGET_PORT, RCU_TARGET_PORT,EXTERNAL_INITAITOR_PORT , MCU_INITIATOR_PORT.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
```

```
        }
    ],
    "tags":
    [
    ],
    "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.

Status code	HTTP name	Description
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource does not exist.

Example request

```
https://172.17.64.115/v1/storage-systems/440084/storage-ports/storagePortId
```

Example request

```
{
  "topology": "FABRIC_ON_POINT_TO_POINT"
  "loopId": "",
  "securitySwitchEnabled": ,
  "speed": ""
  "attribute":""
}
```

Tier management resources

Request	Method	URI	Role
Listing tiers on page 188	GET	/v1/templates/tiers	Storage administrator System administrator Security administrator
Updating a tier on page 190	POST	/v1/templates/tiers/*tierId*	System administrator

Listing tiers

You can display a list of all the tiers that are defined in Storage Advisor. The list is sorted by the tier ID.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/templates/tiers
```

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
    "tiers": [
        {
            "id":
            "tier":
            "subTiers": [
                {
                    "diskType":
                    "speed":
                },

            ]
        }
    ]
}
```

Parameter	Type	Description
tiers	List	Collection of NAS tiers that belong to the pool. This applies only to GET file pools and a file pool APIs.
id	String	ID of the tier.
tier	String	Custom name of the tier, such as Platinum, Gold, Silver, Bronze, or External.
diskType	String	Type of disk, such as FMD DC2, FMD, SAS, or SSD.
speed	Integer	Speed of the disk, measured in revolutions per minute.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.115/v1/templates/tiers
```

Example response

```
{
    "tiers":
    [
        {
            "id": "1",
            "tier": "Platinum",
            "subTiers":
            [
                {
                    "diskType": "FMD",
                    "speed": 0
                },
                {
                    "diskType": "SSD",
                    "speed": 0
                },
                {
                    "diskType": "FMD DC2",
                    "speed": 0
                }
            ]
       },
      ....
    ]
}
```

Updating a tier

You can change the name of a tier.

HTTP request syntax (URI)

`POST https://`*`ipAddress`*`/v1/templates/tiers/`*`tierId`*

Use the ID of the tier for the *tierId*.

Request structure

The request body structure is shown below:

```
{
    "tierName":
}
```

Parameter	Required	Type	Description
tierName	Yes	String	The new name of the tier. The maximum name length is 256 characters. The name cannot start with a dash or underscore.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.

Parameter	Type	Description
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
200	OK	Success.
201	Created	The server has started the operation.
400	Bad request	Required HTTP header was not specified.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.115/v1/templates/tiers/5
```

Example request

```
{
```

```
 "tierName":     "NewName"
}
```

3

File storage management resources

This module describes the file storage management operations.

- Virtual file server management resources
- File pool management resources
- File system management resources
- Share management resources
- Export management resources

Virtual file server management resources

Request	Method	URI	Role
Getting virtual file servers from all storage systems on page 196	GET	/v1/file/vfs	Storage administrator System administrator Security administrator
Getting virtual file servers for a storage system on page 199	GET	/v1/file/storage-systems/*storagaSystemId*/vfs	Storage administrator System administrator Security administrator
Getting information about a specific virtual file server on page 203	GET	/v1/file/storage-systems/*storageSystemId*/vfs/*vfsuuId*	Storage administrator System administrator Security administrator
Creating a virtual file server on page 206	POST	/v1/file/storage-systems/*storageSystemId*/vfs	System administrator
Enabling a virtual file server on page 210	PATCH	/v1/file/storage-systems/*storageSystemId*/vfs/*vfsuuId*	System administrator
Disabling a virtual file server on page 213	PATCH	/v1/file/storage-systems/*storageSystemId*/vfs/*vfsuuId*	System administrator
Renaming a virtual file server on page 217	PATCH	/v1/file/storage-systems/*storageSystemId*/vfs/*vfsuuId*	System administrator
Deleting a virtual file server on page 220	DELETE	/v1/file/storage-systems/*storageSystemId*/vfs/*vfsuuId*	System administrator

Getting virtual file servers from all storage systems

You can display a list of all virtual file servers from all storage systems.

HTTP request syntax (URI)

`GET https://ipAddress/v1/file/vfs`

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "evses": [
    {
      "clusterNodeId": ,
      "enabled": ,
      "id": ,
      "interfaceAddresses": [
        {
          "clusterNodeId": ,
          "evs": ,
          "evsId": ,
          "ip": "",
          "ipv6": ,
          "locationName": "",
          "mask": "",
          "port": "",
          "prefixLength":
        },
        ...
      ],
      "ipAddresses": [
        {
          "ipAddress": "",
          "mask": "",
          "port": ""
        }
      ],
      "links": [],
      "name": "",
      "status": "",
      "type": "",
      "uuid": ""
    }
  ]
}
```

Parameter	Type	Description
clusterNodeId	String	ID of the cluster or ID of one of the cluster nodes.
enabled	Boolean	Whether or not the virtual file server is enabled.
id	Integer	ID of the virtual file server.
interfaceAddresses	List	List of interface addresses for the virtual file server.
evs	Boolean	Whether or not the virtual file server is present.
evsId	Integer	ID of the virtual file server.
ip	String	IP address of the virtual file server.
ipv6	Boolean	Whether or not the IPv6 address is used.

Parameter	Type	Description
locationName	String	Location of the virtual file server.
mask	String	Subnet mask of the IP address.
port	String	Port number.
prefixLength	Integer	The number of bits set in the subnet mask.
ipAddresses	List	List of IP addresses for the virtual file server.
ipAddress	String	IP address of the resource.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
name	String	Name of the virtual file server.
status	String	Online, if the virtual file server is enabled and offline if the virtual file server is disabled.
type	String	Type of the virtual file server. Valid values: 1 - admin, 2 - file server.
uuid	String	Universal unique identifier of the virtual file server.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example code

Request with JSON command:

```
https://172.17.64.111/v1/file/vfs
```

JSON Response:

```
{
  "evses": [
    {
      "clusterNodeId": 2,
      "enabled": true,
      "id": 0,
```

```
      "interfaceAddresses": [
        ...
        {
          "clusterNodeId": 2,
          "evs": true,
          "evsId": 0,
          "ip": "2002::7eff:3002",
          "ipv6": true,
          "locationName": "G800-410500-a",
          "mask": "ffff:ffff:ffff:ffff::",
          "port": "eth1",
          "prefixLength": 64
        }
      ],
      "ipAddresses": [
        {
          "ipAddress": "126.255.48.2",
          "mask": "255.255.0.0",
          "port": "eth1"
        }
      ],
      "links": [],
      "name": "G800-410500-a",
      "status": "On line",
      "type": "admin",
      "uuid": "cd0f6090-4a29-11d1-901c-040100050000"
    }
  ]
}
```

Getting virtual file servers for a storage system

You can display all virtual file servers in a specified storage system.

HTTP request syntax (URI)

`GET https://`*`ipAddress`*`/v1/file/storage-systems/`*`storageSystemId`*`/vfs`

Use the ID of the storage system as the *storageSystemId.*

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "evses":
  [
    {
          "clusterNodeId": ,
          "enabled": ,
          "id": ,
          "interfaceAddresses":
```

```
            [
                {
                   "clusterNodeId": ,
                   "evs": ,
                   "evsId": ,
                   "ip": "",
                   "ipv6":,
                   "locationName": "",
                   "mask": "",
                   "port": "",
                   "prefixLength":
                 },
            ],
            "ipAddresses":
            [
             {
           "ipAddress": "",
           "mask": "",
           "port": ""
          }
            ],
            "links":
            [
                {
                   "rel": "",
                   "href": ""
                },
                {
                   "rel": "",
                   "href": ""
                }
            ],
            "name": "",
            "status": "",
            "type": "",
            "uuid": ""
    }
  ]
}
```

Parameter	Type	Description
clusterNodeId	String	ID of the cluster or ID of one of the cluster nodes.
enabled	Boolean	Whether or not the virtual file server is enabled.
id	Integer	ID of the virtual file server.
interfaceAddresses	List	List of interface addresses for the virtual file server.
evs	Boolean	Whether or not the virtual file server is present.
evsId	Integer	ID of the virtual file server.
ip	String	IP address of the virtual file server.
ipv6	Boolean	Whether or not the IPv6 address is used.

Parameter	Type	Description
locationName	String	Location of the virtual file server.
mask	String	Subnet mask of the IP address.
port	String	Port number.
prefixLength	Integer	The number of bits set in the subnet mask.
ipAddresses	List	List of IP addresses for the virtual file server.
ipAddress	String	IP address of the resource.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
name	String	Name of the virtual file server.
status	String	Online, if the virtual file server is enabled and offline if the virtual file server is disabled.
type	String	Type of the virtual file server. Valid values: 1 - admin, 2 - file server.
uuid	String	Universal unique identifier of the virtual file server.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example code

Request with JSON command:

```
https://172.17.64.111/v1/file/vfs
```

JSON Response:

```
{
  "evses":
  [
    {
          "clusterNodeId": 2,
```

```
            "enabled": true,
            "id": 0,
            "interfaceAddresses":
            [
                {
                   "clusterNodeId": 2,
                   "evs": true,
                   "evsId": 0,
                   "ip": "126.255.48.2",
                   "ipv6": false,
                   "locationName": "G800-410500-a",
                   "mask": "255.255.0.0",
                   "port": "eth1",
                   "prefixLength": 16
                 },
                                                {
                   "clusterNodeId": 2,
                   "evs": true,
                   "evsId": 0,
                   "ip": "202:7eff:3002",
                   "ipv6": true,
                   "locationName": "G800-410500-a",
                   "mask": "ffff:ffff:ffff:ffff::",
                   "port": "eth1",
                   "prefixLength": 64
                 }
            ],
            "ipAddresses":
            [
          {
            "ipAddress": "126.255.48.2",
            "mask": "255.255.0.0",
            "port": "eth1"
          }
            ],
            "links":
            [
                {
                   "rel": "_self",
                   "href": "/v1/file/storage-systems/410500/vfs"
                },
                {
                   "rel": "_filesystems",
                   "href": "/v1/file/storage-systems/410500/vfs/
cd0f6090-4a29-11d1-901c-040100050000/file-systems"
                }
            ],
            "name": "G800-410500-a",
            "status": "On line",
            "type": "admin",
            "uuid": "cd0f6090-4a29-11d1-901c-040100050000"
    }
  ]
}
```

Getting information about a specific virtual file server

You can display information about a virtual file server from a specified storage system.

```
GET https://ipAddress/v1/file/storage-systems/
storageSystemId/vfs/vfsuuId
```

Use the ID of the storage system as the *storageSystemId.*

Use the universal unique identifier of the virtual file server as the *vfsuuId.*

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
      "clusterNodeId": ,
      "enabled": ,
      "id": ,
      "interfaceAddresses":
      [
          {
             "clusterNodeId": ,
             "evs": ,
             "evsId": ,
             "ip": "",
             "ipv6": true|false,
             "locationName": "",
             "mask": "",
             "port": "",
             "prefixLength":
           },
      ],
      "ipAddresses":
      [
          {
                    "ipAddress": "",
              "mask": "",
              "port": ""
          }
      ],
      "links":
      [
          {
             "rel": "_self",
             "href": "/v1/file/storage-systems/410500/vfs"
          },
          {
             "rel": "_filesystems",
             "href": "/v1/file/storage-systems/410500/vfs/
```

```
cd0f6090-4a29-11d1-901c-040100050000/file-systems"
                }
            ],
            "name": "",
            "status": "",
            "type": "",
            "uuid": ""
    }
}
```

Parameter	Type	Description
clusterNodeId	String	ID of the cluster or ID of one of the cluster nodes.
enabled	Boolean	Whether or not the virtual file server is enabled.
id	Integer	ID of the virtual file server.
interfaceAddresses	List	List of interface addresses for the virtual file server.
evs	Boolean	Whether or not the virtual file server is present.
evsId	Integer	ID of the virtual file server.
ip	String	IP address of the virtual file server.
ipv6	Boolean	Whether or not the IPv6 address is used.
locationName	String	Location of the virtual file server.
mask	String	Subnet mask of the IP address.
port	String	Port number.
prefixLength	Integer	The number of bits set in the subnet mask.
ipAddresses	List	List of IP addresses for the virtual file server.
ipAddress	String	IP address of the resource.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
fileSystem	String	URI that includes the file system ID.
name	String	Name of the virtual file server.
status	String	Online, if the virtual file server is enabled and offline if the virtual file server is disabled.
type	String	Type of the virtual file server. Valid values: 1 - admin, 2 - file server.
uuid	String	Universal unique identifier of the virtual file server.

Return codes

Status code	HTTP name	Description
200	OK	Success.

Status code	HTTP name	Description
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example code

Request with JSON command:

```
https://172.17.64.111/v1/file/storage-systems/410500/vfs/
cd0f6090-4a29-11d1-901c-040100050000
```

JSON Response:


```
{
          "clusterNodeId": 2,
          "enabled": true,
          "id": 0,
          "interfaceAddresses":
          [
              {
                 "clusterNodeId": 2,
                 "evs": true,
                 "evsId": 0,
                 "ip": "126.255.48.2",
                 "ipv6": false,
                 "locationName": "G800-410500-a",
                 "mask": "255.255.0.0",
                 "port": "eth1",
                 "prefixLength": 16
               },
                                              {
                 "clusterNodeId": 2,
                 "evs": true,
                 "evsId": 0,
                 "ip": "202:7eff:3002",
                 "ipv6": true,
                 "locationName": "G800-410500-a",
                 "mask": "ffff:ffff:ffff:ffff::",
                 "port": "eth1",
                 "prefixLength": 64
               }
          ],
          "ipAddresses":
          [
              {
                        "ipAddress": "126.255.48.2",
                   "mask": "255.255.0.0",
```

```
                    "port": "eth1"
                }
            ],
            "links":
            [
                {
                   "rel": "_self",
                   "href": "/v1/file/storage-systems/410500/vfs"
                },
                {
                   "rel": "_filesystems",
                   "href": "/v1/file/storage-systems/410500/vfs/
cd0f6090-4a29-11d1-901c-040100050000/file-systems"
                }
            ],
            "name": "G800-410500-a",
            "status": "On line",
            "type": "admin",
            "uuid": "cd0f6090-4a29-11d1-901c-040100050000"
}
```


Creating a virtual file server

You can create a virtual file server.

HTTP request syntax (URI)

`POST https://`*`ipAddress`*`/v1/file/storage-systems/`*`storageSystemId`*`/vfs`

Use the ID of the storage system as the *storageSystemId*.

Request structure

The request body structure is shown below:

```
{
"name": "",
"ipAddress": "",
"subnetMask": "",
"storageSystemId": "",
"port": "",
"ipv6":
}
```

Parameter	Required	Type	Description
name	No	String	The name of the SNMP manager.
ipAddress	Yes	String	IP address of the resource.
subnetMask	No	String	Subnet mask of the IP address. This parameter is not required when IPv6 is set to true.
storageSystemId	No	String	ID of the storage system.

Parameter	Required	Type	Description
port	No	Integer	The SNMP port number in the range between 0 to 65535.
ipv6	Yes	Boolean	IPv6 address. When IPv6 is set to true, add a suffix with a forward slash in the ipAddress.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title": {
      "text": "",
      "messageCode": "",
      "parameters": {}
  },
  "user": "",
  "status": "",
  "startDate": ,
  "endDate": ,
  "parentJobId": ,
  "reports": [],
  "links": [
     {
        "rel": "_self",
        "href": "/v1/jobs/"
     }
  ],
  "tags": [],
  "isSystem":
}
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed

Parameter	Type	Description
		• Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	Required HTTP header was not specified.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
409	Conflict	The specified resource type does not match the existing resource type.
412	Precondition failed	The server does not meet one of the preconditions that the requester put in the request.
503	Service unavailable	The server is currently unable to receive requests. Retry your request.

Example request (EVS with IPv4 address format)

```
{
"name": "New EVS",
"ipAddress": "172.17.91.102",
"subnetMask": "255.255.255.192",
"storageSystemId": "410304",
"port": "ag1",
"ipv6": false
}
```

Example request (EVS with IPv6 address format)

```
{
    "name": "ivp6Test2",
    "ipAddress": "2002::7eef:5002/64",
    "storageSystemId": "410209",
    "subnetMask": "255.255.255.192",
    "port": "ag1",
    "ipv6": true
}
```

Example code

Request with JSON command:

```
https://172.17.64.111/v1/file/storage-systems/410500/vfs
```

Example response

```
{
  "jobId": "a88bd309-fe36-4d68-b3b3-342d1edf20e8",
  "title": {
      "text": "Create VFS",
      "messageCode": "CreateVFSJobPreTitleMessage",
      "parameters": {}
  },
  "user": "sysadmin",
  "status": "IN_PROGRESS",
  "startDate": 1452129643172,
  "endDate": null,
  "parentJobId": null,
  "reports": [],
  "links": [
     {
        "rel": "_self",
        "href": "/v1/jobs/a88bd309-fe36-4d68-b3b3-342d1edf20e8"
     }
  ],
  "tags": [{
```

```
      "tag": "STORAGE"
    },
    {
      "tag": "410209"
    },
    {
      "tag": "CREATE"
    },
    {
      "tag": "FILE"
    },
    {
      "tag": "USER"
    }
  ],
  "isSystem": false
}
```

Enabling a virtual file server

You can enable a virtual file server in the storage system. Use this command to bring a virtual file server online.

HTTP request syntax (URI)

`PATCH https://`*`ipAddress`*`/v1/file/storage-systems/`*`storageSystemId`*`/vfs/`*`vfsuuId`*

Use the ID of the storage system as the *storageSystemId.*

Use the universal unique identifier of the virtual file server as the *vfsuuId.*

Request structure

The request body structure is shown below:

```
{
  "enabled":"true"
}
```

Parameter	Required	Type	Description
enabled	Yes	Boolean	Set to true to enable the virtual file server or set to false to disable it.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title": {
    "text": "",
    "messageCode": "",
```

```
    "parameters": {}
  },
  "user": "",
  "status": "",
  "startDate": ,
  "endDate": ,
  "parentJobId": ,
  "reports": [],
  "links": [
    {
      "rel": "_self",
      "href": "/v1/jobs/"
    }
  ],
  "tags": [],
  "isSystem":
}
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.

Parameter	Type	Description
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
204	No content	The request was successful, but the response does not exist.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
409	Conflict	The specified resource type does not match the existing resource type.

Example request

```
{
  "enabled":"true"
}
```

Example code

Request with JSON command:

```
https://172.17.64.111/v1/file/storage-systems/21000/vfs/
cd0f6090-4a29-11d1-901c-040100050000
```

JSON Response:


```
{
  "jobId": "e8bf52d5-bc18-4400-b3ef-edc16543af88",
  "title": {
    "text": "Updating VFS with Label EVS-SS, UUID
a195af84-84e2-11d1-908d-040100020009",
    "messageCode": "UpdateVFSPreJobStepMessage",
    "parameters": {}
  },
  "user": "sysadmin",
  "status": "IN_PROGRESS",
  "startDate": 1452542341909,
  "endDate": null,
  "parentJobId": null,
  "reports": [],
  "links": [
    {
      "rel": "_self",
      "href": "/v1/jobs/e8bf52d5-bc18-4400-b3ef-edc16543af88"
    }
  ],
  "tags": [{
      "tag": "STORAGE"
    },
    {
      "tag": "a195af84-84e2-11d1-908d-040100020009"
    },
    {
      "tag": "410209"
    },
    {
      "tag": "UPDATE"
    },
    {
      "tag": "FILE"
    },
    {
      "tag": "USER"
    }
  ],
  "isSystem": false
}
```


Disabling a virtual file server

You can disable a virtual file server. When disabling a file server a virtual file server goes offline.

HTTP request syntax (URI)

`PATCH https://`*`ipAddress`*`/v1/file/storage-systems/`*`storageSystemId`*`/vfs/`*`vfsuuId`*

Use the ID of the storage system as the *storageSystemId.*

Use the universal unique identifier of the virtual file server as the *vfsuuId.*

Request structure

The request body structure is shown below:

```
{
  "enabled":"false"
}
```

Parameter	Required	Type	Description
enabled	Yes	Boolean	Set to true to enable the virtual file server or set to false to disable it.

Response structure

The response body structure is shown below.

```
{
  "jobId": "",
  "title": {
    "text": "",
    "messageCode": "",
    "parameters": {}
  },
  "user": "",
  "status": "",
  "startDate": ,
  "endDate": ,
  "parentJobId": ,
  "reports": [],
  "links": [
    {
      "rel": "_self",
      "href": "/v1/jobs/jobId"
    }
  ],
  "tags": [],
  "isSystem":
}
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed

Parameter	Type	Description
		• Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
204	No content	The request was successful, but the response does not exist.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
409	Conflict	The specified resource type does not match the existing resource type.

Example request

```
{
  "enabled":"false"
}
```

Example code

Request with JSON command:

```
https://172.17.64.111/v1/file/storage-systems/410500/vfs/
cd0f6090-4a29-11d1-901c-040100050000
```

JSON Response:

```
{
  "jobId": "e8bf52d5-bc18-4400-b3ef-edc16543af88",
  "title": {
    "text": " Updating VFS with Label EVS-SS, UUID
a195af84-84e2-11d1-908d-040100020009.",
    "messageCode": "UpdateVFSPreJobStepMessage",
    "parameters": {}
  },
  "user": "sysadmin",
  "status": "IN_PROGRESS",
  "startDate": 1452542341909,
  "endDate": null,
  "parentJobId": null,
  "reports": [],
  "links": [
    {
      "rel": "_self",
      "href": "/v1/jobs/e8bf52d5-bc18-4400-b3ef-edc16543af88"
    }
  ],
  "tags": [{
      "tag": "STORAGE"
    },
    {
      "tag": "a195af84-84e2-11d1-908d-040100020009"
    },
    {
      "tag": "410209"
    },
    {
      "tag": "UPDATE"
    },
    {
      "tag": "FILE"
    },
    {
      "tag": "USER"
```

```
      }
    ],
    "isSystem": false
  }
```

Renaming a virtual file server

You can rename a virtual file server.

HTTP request syntax (URI)

```
PATCH https://ipAddress/v1/file/storage-systems/
storageSystemId/vfs/vfsuuId
```

Use the ID of the storage system as the *storageSystemId.*

Use the universal unique identifier of the virtual file server as the *vfsuuId.*

Request structure

The request body structure is shown below:

```
{
 "evsName":"NewEVS"
}
```

Parameter	Required	Type	Description
evsName	Yes	String	The new name for the virtual file server. Min = 1, max = 15.

Response structure

The response body structure is shown below.

```
{
  "jobId": "",
  "title": {
    "text": "",
    "messageCode": "",
    "parameters": {}
  },
  "user": "",
  "status": "",
  "startDate": ,
  "endDate": ,
  "parentJobId": ,
  "reports": [],
  "links": [
    {
      "rel": "_self",
      "href": "/v1/jobs/jobId"
    }
  ],
  "tags": [],
```

```
  "isSystem":
}
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
202	Accepted	The request has been accepted for processing, but the

Status code	HTTP name	Description
		processing has not been completed.
204	No content	The request was successful, but the response does not exist.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
{
  "evsName":"NewEVS"
}
```

Example code

Request with JSON command:

```
https://172.17.64.104/v1/file/storage-systems/21000/vfs/
9d869ca6-4bf7-11d1-901c-040100020009
```

JSON Response:

```
{
  "jobId": "e8bf52d5-bc18-4400-b3ef-edc16543af88",
  "title": {
    "text": "Updating VFS with Label EVS-SS, UUID
a195af84-84e2-11d1-908d-040100020009",
    "messageCode": "UpdatingVFSPreJobStepMessage",
    "parameters": {}
  },
  "user": "sysadmin",
  "status": "IN_PROGRESS",
  "startDate": 1452542341909,
  "endDate": null,
  "parentJobId": null,
  "reports": [],
  "links": [
    {
      "rel": "_self",
      "href": "/v1/jobs/e8bf52d5-bc18-4400-b3ef-edc16543af88"
    }
```

```
  ],
  "tags": [ {
      "tag": "STORAGE"
    },
    {
      "tag": "a195af84-84e2-11d1-908d-040100020009"
    },
    {
      "tag": "410209"
    },
    {
      "tag": "UPDATE"
    },
    {
      "tag": "FILE"
    },
    {
      "tag": "USER"
    }
  ],
  "isSystem": false
}
```

Deleting a virtual file server

You can delete a virtual file server. When you delete a virtual file server, it is automatically disabled.

HTTP request syntax (URI)

`DELETE https://`*`ipAddress`*`/v1/file/storage-systems/`*`storageSystemId`*`/vfs/`*`vfsuuId`*

Use the ID of the storage system as the *storageSystemId.*

Use the universal unique identifier of the virtual file server as the *vfsuuId.*

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
```

```
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the

Parameter	Type	Description
		system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example code

Request with JSON command:

```
https://172.17.64.111/v1/file/storage-systems/410500/vfs/
cd0f6090-4a29-11d1-901c-040100050000
```

JSON Response:

```
{
  "jobId": "df88e4bd-b6d6-435c-8ac0-deca3c542605",
  "title": {
    "text": "Deleting VFS with Label VFS12345, UUID
a195af84-84e2-11d1-908d-040100020009",
    "messageCode": "DeleteVFSPreStepMessage",
    "parameters": {}
  },
  "user": "sysadmin",
  "status": "IN_PROGRESS",
  "startDate": 1453254005810,
  "endDate": null,
  "parentJobId": null,
  "reports": [],
  "links": [
    {
      "rel": "_self",
      "href": "/v1/jobs/df88e4bd-b6d6-435c-8ac0-deca3c542605"
    }
  ],
```

```
  "tags": [{
      "tag": "STORAGE"
    },
    {
      "tag": "a195af84-84e2-11d1-908d-040100020009"
    },
    {
      "tag": "410209"
    },
    {
      "tag": "DELETE"
    },
    {
      "tag": "FILE"
    },
    {
      "tag": "USER"
    }
  ],
  "isSystem": false
}
```

File pool management resources

Request	Method	URI	Role
Listing file pools for a storage system on page 224	GET	/v1/file/storage-systems/*storageSystemId*/file-pools	Storage administrator System administrator Security administrator
Getting a file pool on page 227	GET	/v1/file/storage-systems/*storageSystemId*/file-pools/*poolId*	Storage administrator System administrator Security administrator
Getting File Systems for a File Pool on page 259	GET	/v1/file/storage-systems/*storageSystemId*/file-pools/*poolId*/file-systems	Storage administrator
Getting a file pool creation template on page 229	GET	/v1/file/storage-systems/*storageSystemId*/templates/file-pools	Storage administrator
Creating a file pool from a template on page 232	POST	/v1/file/storage-systems/*storageSystemd*/templates/file-pools	Storage administrator

Request	Method	URI	Role
Getting a file pool expansion template on page 237	GET	/v1/file/storage-systems/*storageSystemd*/templates/file-pools/*poolId*	Storage administrator
Expanding a file pool on page 239	POST	/v1/file/storage-systems/*storageSystemd*/file-pools/*poolId*/expand	Storage administrator
Modifying a file pool on page 244	POST	/v1/file/storage-systems/*storageSystemd*/file-pools/*poolId*	Storage administrator
Deleting a file pool on page 249	DELETE	/v1/file/storage-systems/*storageSystemd*/file-pools/*poolId*	Storage administrator

Listing file pools for a storage system

You can display a list of all file pools in a storage system.

HTTP request syntax (URI)

`GET https://`*`ipAddress`*`/v1/file/storage-systems/`*`storageSystemId`*`/file-pools`

Use the ID of the storage system as the *storageSystemId.*

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "filePools":
  [
    {
      "id": "",
      "label": "",
      "totalCapacity": "",
      "freeCapacity": "",
      "usedCapacity": "",
      "healthy": ,
      "chunkSize": "",
      "onHDP": "",
      "physicalCapacity": ""
      "tierNames": [""]
      "tiered": ,
      "fileSystemAutoExpansionAllowed": ,
      "assignedToLocalCluster": ,
      "tiers":
      [
        {
          "capacity": "",
```

```
            "freeSpace": "",
            "tierNumber": ""
          }
        ]
      }
    ]
}
```

Parameter	Type	Description
id	Integer	ID of the pool.
label	String	Name of the pool.
totalCapacity	String	Total capacity of the specified pool type in the storage system, in bytes.
freeCapacity	String	Capacity available, in bytes.
usedCapacity	String	Sum of used capacity across all pools of the specified type in the storage system, in bytes.
healthy	Boolean	Whether or not the file pool is healthy. The health of a pool is determined by the health of all its top-level virtual devices.
chunkSize	String	The size of the chunks the file pool is made of.
onHDP	String	Whether or not the file pool is on HDP. Default value is set to true, since Storage Advisor supports file pool creation on HDP pools.
physicalCapacity	String	Physical capacity of the file pool, in bytes.
tierNames	List	Collection of tiers, such as Platinum, Gold, Silver, and Bronze of the underlying HDP pool. This applies only to GET file pools and a file pool APIs.
tiered	Boolean	Whether or not the file pool is tiered. • True - when there are two underlying HDP pools. • False - when this is only one underlying HDP pool. This applies only to GET file pools and a file pool APIs.
fileSystemAutoExpansionAllowed	Boolean	Whether or not file system auto expansion is allowed.
assignedToLocalCluster	Boolean	Whether or not the file pool is assigned to a local cluster.
tiers	List	Collection of NAS tiers that belong to the pool. This applies only to GET file pools and a file pool APIs.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example code

Request with JSON command:

```
https://172.17.64.109/v1/file/storage-systems/410209/file-pools
```

JSON response:

```
{
  "filePools": [
    {
      "id": "6190571495709419190",
      "label": "FK-Pool-2",
      "totalCapacity": "268414484480",
      "freeCapacity": "115070730240",
      "usedCapacity": "153343754240",
      "healthy": true,
      "chunkSize": "19327352832",
      "onHDP": "True",
      "physicalCapacity": "27662173077504"
      "tierNames": ["Silver"]
      "tiered": false,
      "fileSystemAutoExpansionAllowed": true,
      "assignedToLocalCluster": true,
      "tiers": [
        {
          "capacity": "0",
          "freeSpace": "0",
          "tierNumber": "0"
        },
      ]
    },
    ...
    }
  ]
}
```

Getting a file pool

You can display information about a single file pool.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/file/storage-systems/storageSystemId/
file-pools/poolId
```

Use the ID of the storage system as the *storageSystemId.*

Use the ID of the file pool as the *poolId.*

Request structure

Not applicable.

Response structure

The response body structure is shows below:

```
{
  "id": "",
  "label": "",
  "totalCapacity": "",
  "freeCapacity": "",
  "usedCapacity": "",
  "healthy": true,
  "chunkSize": "",
  "onHDP": "",
  "physicalCapacity": ""
  "tierNames": [""]
  "tiered": ,
  "fileSystemAutoExpansionAllowed": ,
  "assignedToLocalCluster": ,
  "tiers": [
    {
      "capacity": "",
      "freeSpace": "",
      "tierNumber": ""
     }
  ]
}
```

Parameter	Type	Description
id	Integer	ID of the pool.
label	String	Name of the pool.
totalCapacity	String	Total capacity of the specified pool type in the storage system, in bytes.
freeCapacity	String	Capacity available, in bytes.

Parameter	Type	Description
usedCapacity	String	Sum of used capacity across all pools of the specified type in the storage system, in bytes.
healthy	Boolean	Whether or not the file pool is healthy. The health of a pool is determined by the health of all its top-level virtual devices.
chunkSize	String	The size of the chunks the file pool is made of.
onHDP	String	Whether or not the file pool is on HDP. Default value is set to true, since Storage Advisor supports file pool creation on HDP pools.
physicalCapacity	String	Physical capacity of the file pool, in bytes.
tierNames	List	Collection of tiers, such as Platinum, Gold, Silver, and Bronze of the underlying HDP pool. This applies only to GET file pools and a file pool APIs.
tiered	Boolean	Whether or not the file pool is tiered. • True - when there are two underlying HDP pools. • False - when this is only one underlying HDP pool. This applies only to GET file pools and a file pool APIs.
fileSystemAutoExpansionAllowed	Boolean	Whether or not file system auto expansion is allowed.
assignedToLocalCluster	Boolean	Whether or not the file pool is assigned to a local cluster.
tiers	List	Collection of NAS tiers that belong to the pool. This applies only to GET file pools and a file pool APIs.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example code

Request with JSON command:

```
https://172.17.64.111/v1/file/storage-systems/410500/file-pools/
6190571495709419190
```

JSON response:

```
{
  "id": "6190571495709419190",
  "label": "FK-Pool-2",
  "totalCapacity": "268414484480",
  "freeCapacity": "115070730240",
  "usedCapacity": "153343754240",
  "healthy": true,
  "chunkSize": "19327352832",
  "onHDP": "True",
  "physicalCapacity": "27662173077504"
  "tierNames": ["Silver"]
  "tiered": false,
  "fileSystemAutoExpansionAllowed": true,
  "assignedToLocalCluster": true,
  "tiers": [
    {
      "capacity": "0",
      "freeSpace": "0",
      "tierNumber": "0"
    }
  ]
}
```

Getting a file pool creation template

You can get a template for creating a new file pool in the storage system.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/file/storage-systems/storageSystemId/
templates/file-pools
```

Use the ID of the storage system as the *storageSystemId.*

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "label":"",
  "overCommitRatio":"",
```

```
  "utilizationThreshold1":,
  "utilizationThreshold2":,
  "filePoolTemplateItems":[
    {
      "tiers":[
        {
          "name":"",
          "templateSubTiers":[
            {
              "description":"",
              "diskType":"",
              "speed":,
              "capacity":"",
              "raidLevel":"",
              "raidLayout":"",
              "availableSizesInBytes":[
                ""
              ]
            }
          ]
        }
      ]
    }
  ]
}
```

Parameter	Type	Description
label	String	Name of the file pool.
overCommitRatio	String	Percentage by which a file pool capacity is over provisioned.
utilizationThreshold1	Integer	The pool capacity utilization threshold at which first warning is issued.
utilizationThreshold2	Integer	The pool capacity utilization threshold at which second warning is issued.
filePoolTemplateItems	String	Collection of the file pool template items.
tiers	List	Collection of NAS tiers that belong to the pool. This applies only to GET file pools and a file pool APIs.
name	String	Name of the tier.
templateSubTiers	List	List of items that form the tier.
description	String	Tier description, for example, diskType, raidLevel, raidLayout, and speed.
diskType	String	Type of disk, such as FMD DC2, FMD, SAS, or SSD.
speed	Integer	Speed of the disk, measured in revolutions per minute.
capacity	Long	Total capacity of the system drive, in bytes.

Parameter	Type	Description
raidLevel	String	RAID level. Valid values: RAID1+0, RAID5, or RAID6.
raidLayout	String	RAID layout. This RAID layout should be of the specified RAID level. Valid values: For Gx00: • RAID1+0 - (2D+2D) • RAID5 - (3D+1P),(4D+1P),(6D+1P)& (7D +1P) • RAID6 – (6D+2P),(14D+2P),(12D+2P) For VSP G1000, G1500, F1500: • RAID5- (3D+1P),(7D+1P) • RAID6 –(6D+2P),(14D+2P) • RAID1+0 – (2D+2D), (2D+2D)x2
availiableSizesInBytes	Long	Available sizes to use for creating and updating the pool.

Return codes

Status code	HTTP name	Description
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.122/v1/file/storage-systems/410209/templates/
file-pools
```

Example response


```
{
  "label":"",
  "overCommitRatio":"200",
  "utilizationThreshold1":70,
  "utilizationThreshold2":80,
  "filePoolTemplateItems":[
    {
      "tiers":[
        {
          "name":"Gold",
```

```
            "templateSubTiers":[
              {
                "description":"SAS RAID5 3D+1P 15000",
                "diskType":"SAS",
                "speed":15000,
                "capacity":"302195408896",
                "raidLevel":"RAID5",
                "raidLayout":"3D+1P",
                "availableSizesInBytes":[
                  "3458356740096"
                ]
              }
            ]
          }
        ]
      }
    ]
}
```


Creating a file pool from a template

You can create a file pool from a template. When creating a file pool, block pools are automatically created.

HTTP request syntax (URI)

`POST https://`*`ipAddress`*`/v1/file/storage-systems/`*`storageSystemId`*`/templates/file-pools`

Use the ID of the storage system as the *storageSystemId.*

Request structure

Specify either a tier name or all of the following: diskType, speed, raidlLevel, raidLayout, and sizeToUse.

The request body structure is shown below:


```
{
  "label":"",
  "utilizationThreshold1":,
  "utilizationThreshold2":,
  "templateTiers":[
    {
      "name":"",
      "diskType":"",
      "speed":,
      "capacity":"",
      "raidLevel":"",
      "raidLayout":"",
      "sizeToUse":""
    }
  ]
}
```

Parameter	Required	Type	Description
label	Yes	String	The name of the pool. Min = 1, max = 255.
utilizationThreshold1	No	Integer	The pool capacity utilization threshold at which the first warning is issued. The range is between 1 - 100. If the utilizationThreshold1 is not specified, Storage Advisor sets it to 70%.
utilizationThreshold2	No	Integer	The pool capacity utilization threshold at which the second warning is issued. The range is between 1 - 100. The value for utilizationThreshold2 must be greater than the value for utilizationThreshold1. If utilizationThreshold2 is not specified, Storage Advisor sets it to 80%.
templateTiers	No	List	List of template items that form the tier.
name	Yes	String	The name of the tier.
diskType	Yes	String	Type of disk, such as FMD DC2, FMD, SAS, or SSD.
speed	Yes	Integer	The speed of the disk, measured in revolutions per minute. For FMD, SSD, or FMD DC2, the speed is 0.
capacity	No	Long	Tier capacity
raidLevel	Yes	String	RAID level. Valid values: RAID0, RAID1, RAID1+0, RAID0+1, RAID2, RAID3, RAID4, RAID5, or RAID6.
raidLayout	Yes	String	The RAID layout of the specified RAID level. For Gx00: RAID1+0 - (2D+2D), RAID5 - (3D+1P),(4D+1P),(6D+1P)& (7D+1P), RAID6 - (6D+2P),(14D+2P),(12D+2P). For VSP G1000, VSP G1500, VSP F1500: RAID5- (3D+1P),(7D+1P) RAID6 -(6D+2P),(14D+2P) RAID1+0 - (2D+2D), (2D+2D)x2
sizeToUse	Yes	String	The size to use when creating and updating the pool, based on all availableSizesInBytes during the GET template call.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
```

```
    {
      "text": "",
      "messageCode": "",
      "parameters":
       {
       }
    },
    "user": "",
    "status": "",
    "startDate": ,
    "endDate": ,
    "parentJobId": ,
    "reports":
    [
    ],
    "links":
    [
       {
          "rel": "_self",
          "href": "/v1/jobs/"
       }
    ],
    "tags":
    [
    ],
    "isSystem":
}
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.

Parameter	Type	Description
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

HTTP status codes

Status code	HTTP name	Description
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
400	Bad request	Required HTTP header was not specified.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
409	Conflict	The specified resource type does not match the existing resource type.
412	Precondition failed	The server does not meet one of the preconditions that the requester put in the request.
503	Service unavailable	The server is currently unable to receive requests. Retry your request.

Example request

```
https://172.17.64.122/v1/file/storage-systems/410209/templates/
file-pools/6190571495709419190
```

Example request

```
{
  "label":"",
  "utilizationThreshold1":70,
  "utilizationThreshold2":80,
  "templateTiers":[
    {
      "name":"",
      "diskType":"",
      "speed":,
      "capacity":"",
      "raidLevel":"",
      "raidLayout":"",
      "sizeToUse":""
    }
  ]
}
```

Example response

```
{
  "jobId": "723fddb1-2013-472b-a5da-938102352ee7",
  "title":
   {
     "text": "Creating File Pool with Label tieredExpTest",
     "messageCode": "CreateFilePoolJobPreTitleMessage",
     "parameters":
      {
      }
   },
   "user": "sysadmin",
   "status": "IN_PROGRESS",
   "startDate": 1453426947559,
   "endDate": null,
   "parentJobId": null,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/723fddb1-2013-472b-a5da-938102352ee7"
      }
   ],
   "tags":
   [{
      "tag": "STORAGE"
    },
    {
      "tag": "CREATE"
    },
    {
      "tag": "410500"
    },
    {
```

```
      "tag": "FILE"
    },
    {
      "tag": "USER"
    }
  ]
   "isSystem": false
}
```

Getting a file pool expansion template

You can get a template to expand a file pool.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/file/storage-systems/storageSystemId/
templates/file-pools/poolId
```

Use the ID of the storage system as the *storageSystemId.*

Use the ID of the pool as the *poolId.*

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "label":"",
  "overCommitRatio":"",
  "utilizationThreshold1":,
  "utilizationThreshold2":,
  "filePoolTemplateItems":[
    {
      "tiers":[
        {
          "name":"",
          "templateSubTiers":[
            {
              "description":"",
              "diskType":"",
              "speed":,
              "capacity":"",
              "raidLevel":"",
              "raidLayout":"",
              "availableSizesInBytes":[
                ""
              ]
            }
          ]
        }
      ]
    }
```

```
    ]
}
```

Parameter	Type	Description
label	String	Name of the file pool.
overCommitRatio	String	Percentage by which a file pool capacity is over provisioned.
utilizationThreshold1	Integer	The pool capacity utilization threshold at which first warning is issued.
utilizationThreshold2	Integer	The pool capacity utilization threshold at which second warning is issued.
filePoolTemplateItems	String	Collection of the file pool template items.
tiers	List	Collection of NAS tiers that belong to the pool. This applies only to GET file pools and a file pool APIs.
name	String	Name of the tier.
templateSubTiers	List	List of items that form the tier.
description	String	Tier description, for example, diskType, raidLevel, raidLayout, and speed.
diskType	String	Type of disk, such as FMD DC2, FMD, SAS, or SSD.
speed	Integer	Speed of the disk, measured in revolutions per minute.
capacity	Long	Total capacity of the system drive, in bytes.
raidLevel	String	RAID level. Valid values: RAID1+0, RAID5, or RAID6.
raidLayout	String	RAID layout. This RAID layout should be of the specified RAID level. Valid values: For Gx00: • RAID1+0 - (2D+2D) • RAID5 - (3D+1P),(4D+1P),(6D+1P)& (7D +1P) • RAID6 – (6D+2P),(14D+2P),(12D+2P) For VSP G1000, G1500, F1500: • RAID5- (3D+1P),(7D+1P) • RAID6 –(6D+2P),(14D+2P) • RAID1+0 – (2D+2D), (2D+2D)x2
availiableSizesInBytes	Long	Available sizes to use for creating and updating the pool.

Return codes

Status code	HTTP name	Description
200	OK	Success.

Status code	HTTP name	Description
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.122/v1/file/storage-systems/410209/templates/
file-pools/6190571495709419190
```

Example response


```
{
  "label":"",
  "overCommitRatio":"200",
  "utilizationThreshold1":70,
  "utilizationThreshold2":80,
  "filePoolTemplateItems":[
    {
      "tiers":[
        {
          "name":"Gold",
          "templateSubTiers":[
            {
              "description":"SAS RAID5 3D+1P 15000",
              "diskType":"SAS",
              "speed":15000,
              "capacity":"302195408896",
              "raidLevel":"RAID5",
              "raidLayout":"3D+1P",
              "availableSizesInBytes":[
                "3458356740096"
              ]
            }
          ]
        }
      ]
    }
  ]
}
```


Expanding a file pool

You can expand a file pool using one or more parameters.

HTTP request syntax (URI)

```
PATCH https://ipAddress/v1/file/storage-systems/storageSystemId/
templates/file-pool/poolId
```

Use the ID of the storage system as the *storageSystemId.*

Use the ID of the pool as the *poolId.*

Request structure

The request body structure is shown below:

```
{
  "label":"",
  "utilizationThreshold1":,
  "utilizationThreshold2":,
  "templateTiers":[
    {
      "name":"",
      "diskType":"",
      "speed":,
      "capacity":"",
      "raidLevel":"",
      "raidLayout":"",
      "sizeToUse":""
    }
  ]
}
```

Parameter	Required	Type	Description
label	Yes	String	The name of the pool. Min = 1, max = 255.
utilizationThreshold1	No	Integer	The pool capacity utilization threshold at which the first warning is issued. The range is between 1 - 100. If the utilizationThreshold1 is not specified, Storage Advisor sets it to 70%.
utilizationThreshold2	No	Integer	The pool capacity utilization threshold at which the second warning is issued. The range is between 1 - 100. The value for utilizationThreshold2 must be greater than the value for utilizationThreshold1. If utilizationThreshold2 is not specified, Storage Advisor sets it to 80%.
templateTiers	No	List	List of template items that form the tier.
name	Yes	String	The name of the tier.
diskType	Yes	String	Type of disk, such as FMD DC2, FMD, SAS, or SSD.
speed	Yes	Integer	The speed of the disk, measured in revolutions per minute. For FMD, SSD, or FMD DC2, the speed is 0.
capacity	No	Long	Tier capacity

Parameter	Required	Type	Description
raidLevel	Yes	String	RAID level. Valid values: RAID0, RAID1, RAID1+0, RAID0+1, RAID2, RAID3, RAID4, RAID5, or RAID6.
raidLayout	Yes	String	The RAID layout of the specified RAID level. For Gx00: RAID1+0 - (2D+2D), RAID5 - (3D+1P),(4D+1P),(6D+1P)& (7D+1P), RAID6 - (6D+2P),(14D+2P),(12D+2P). For VSP G1000, VSP G1500, VSP F1500: RAID5- (3D+1P),(7D+1P) RAID6 -(6D+2P),(14D+2P) RAID1+0 - (2D+2D), (2D+2D)x2
sizeToUse	Yes	String	The size to use when creating and updating the pool, based on all availableSizesInBytes during the GET template call.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/"
      }
   ],
   "tags":
   [
   ],
```

```
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

HTTP status codes

Status code	HTTP name	Description
202	Accepted	The request has been accepted for processing, but the

Status code	HTTP name	Description
		processing has not been completed.
400	Bad request	Required HTTP header was not specified.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
409	Conflict	The specified resource type does not match the existing resource type.
412	Precondition failed	The server does not meet one of the preconditions that the requester put in the request.
503	Service unavailable	The server is currently unable to receive requests. Retry your request.

Example request

```
{
  "label":"sample",
  "utilizationThreshold1":70,
  "utilizationThreshold2":80,
  "templateTiers":[
    {
      "name":"Gold",
      "diskType":"SAS",
      "speed":15000,
      "capacity":"302195408896",
      "raidLevel":"RAID5",
      "raidLayout":"3D+1P",
      "sizeToUse":"46988947095552"
    }
  ]
}
```

Example request

```
https://172.17.64.122/v1/file/storage-systems/410209/templates/
file-pools/6190571495709419190
```

Example response


```
{
  "jobId": "723fddb1-2013-472b-a5da-938102352ee7",
  "title":
   {
     "text": "Expanding File Pool",
     "messageCode": "ExpandFilePoolJobPreTitleMessage",
     "parameters":
      {
      }
   },
   "user": "sysadmin",
   "status": "IN_PROGRESS",
   "startDate": 1453426947559,
   "endDate": null,
   "parentJobId": null,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/723fddb1-2013-472b-a5da-938102352ee7"
      }
   ],
   "tags":
   [
   ],
   "isSystem": false
}
```


Modifying a file pool

You can modify a file pool label.

HTTP request syntax (URI)

`POST https://`*`ipAddress`*`/v1/file/storage-systems/`*`storageSystemId`*`/templates/file-pools/`*`poolId`*

Use the ID of the storage system as the *storageSystemId.*

Use the ID of the pool as the *poolId.*

Request structure

The request body structure is shown below:


```
{
  "label":"",
  "utilizationThreshold1":,
  "utilizationThreshold2":,
```

```
  "templateTiers":[
    {
      "name":"",
      "diskType":"",
      "speed":,
      "capacity":"",
      "raidLevel":"",
      "raidLayout":"",
      "sizeToUse":""
    }
  ]
}
```

Parameter	Required	Type	Description
label	Yes	String	The name of the pool. Min = 1, max = 255.
utilizationThreshold1	No	Integer	The pool capacity utilization threshold at which the first warning is issued. The range is between 1 - 100. If the utilizationThreshold1 is not specified, Storage Advisor sets it to 70%.
utilizationThreshold2	No	Integer	The pool capacity utilization threshold at which the second warning is issued. The range is between 1 - 100. The value for utilizationThreshold2 must be greater than the value for utilizationThreshold1. If utilizationThreshold2 is not specified, Storage Advisor sets it to 80%.
templateTiers	No	List	List of template items that form the tier.
name	Yes	String	The name of the tier.
diskType	Yes	String	Type of disk, such as FMD DC2, FMD, SAS, or SSD.
speed	Yes	Integer	The speed of the disk, measured in revolutions per minute. For FMD, SSD, or FMD DC2, the speed is 0.
capacity	No	Long	Tier capacity
raidLevel	Yes	String	RAID level. Valid values: RAID0, RAID1, RAID1+0, RAID0+1, RAID2, RAID3, RAID4, RAID5, or RAID6.
raidLayout	Yes	String	The RAID layout of the specified RAID level. For Gx00: RAID1+0 - (2D+2D), RAID5 - (3D+1P),(4D+1P),(6D+1P)& (7D+1P), RAID6 - (6D+2P),(14D+2P),(12D+2P). For VSP G1000, VSP G1500, VSP F1500: RAID5- (3D+1P),(7D+1P) RAID6 -(6D+2P),(14D+2P) RAID1+0 - (2D+2D), (2D+2D)x2

Parameter	Required	Type	Description
sizeToUse	Yes	String	The size to use when creating and updating the pool, based on all availableSizesInBytes during the GET template call.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.

Parameter	Type	Description
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Status code	HTTP name	Description
503	Service unavailable	The server is currently unable to receive requests. Retry your request.

Example request

```
https://172.17.64.111/v1/file/storage-systems/410500/file-pools/
6190571495709419190
```

Example request

```
{
  "label":"sample",
  "utilizationThreshold1":70,
  "utilizationThreshold2":80,
  "templateTiers":[
    {
      "name":"Gold",
      "diskType":"SAS",
      "speed":15000,
      "capacity":"302195408896",
      "raidLevel":"RAID5",
      "raidLayout":"3D+1P",
      "sizeToUse":"46988947095552"
    }
  ]
}
```

Example response

```
{
  "jobId": "723fddb1-2013-472b-a5da-938102352ee7",
  "title":
   {
     "text": "Modifying File Pool with Label UserNameTestPool,
ID 360468247080066541",
     "messageCode": "ModifyFilePoolJobPreTitleMessage",
     "parameters":
      {
      }
   },
   "user": "sysadmin",
   "status": "IN_PROGRESS",
   "startDate": 1453426947559,
   "endDate": null,
   "parentJobId": null,
```

```
    "reports":
    [
    ],
    "links":
    [
       {
          "rel": "_self",
          "href": "/v1/jobs/723fddb1-2013-472b-a5da-938102352ee7"
       }
    ],
    "tags":
    [ {
       "tag": "STORAGE"
     },
     {
       "tag": "3604682470800665 41"
     },
     {
       "tag": "410500"
     },
     {
       "tag": "UPDATE"
     },
     {
       "tag": "FILE"
     },
     {
       "tag": "USER"
     }
    ]
    "isSystem": false
 }
```

Deleting a file pool

You can delete a file pool. Deleting a file pool detaches created volumes, deletes the volumes, and then deletes the underlying block pool.

HTTP request syntax (URI)

`DELETE https://`*`ipAddress`*`/v1/file/storage-systems/`*`storageSystemId`*`/file-pools/`*`poolId`*

Use the ID of the storage system as the *storageSystemId.*

Use the ID of the pool as the *poolId.*

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
```

```
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.

Parameter	Type	Description
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
200	OK	Success.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.111/v1/file/storage-systems/410500/file-pools/
6190571495709419190
```

Example response

```
{
  "jobId": "723fddb1-2013-472b-a5da-938102352ee7",
  "title":
   {
     "text": "Deleting file pool with Label tieredExpTest, ID
360460576304227337",
     "messageCode": "DeleteFilePoolJobPreTitleMessage",
     "parameters":
```

```
        {
        }
    },
    "user": "sysadmin",
    "status": "IN_PROGRESS",
    "startDate": 1453426947559,
    "endDate": null,
    "parentJobId": null,
    "reports":
    [
    ],
    "links":
    [
        {
            "rel": "_self",
            "href": "/v1/jobs/723fddb1-2013-472b-a5da-938102352ee7"
        }
    ],
    "tags":
    [ {
        "tag": "STORAGE"
      },
      {
        "tag": "DELETE"
      },
      {
        "tag": "410500"
      },
      {
        "tag": "FILE"
      },
      {
        "tag": "USER"
      },
      {
        "tag": "36046057630422737"
      }
   ]
    "isSystem": false
}
```


File system management resources

Request	Method	URI	Role
Getting file systems for a storage system on page 253	GET	/v1/file/storage-systems/*storageSystemId*/file-systems	Storage administrator System administrator Security administrator

Request	Method	URI	Role
Getting a single file system on page 257	GET	/v1/file/storage-systems/*storageSystemId*/file-systems/*fileSystemId*	Storage administrator System administrator Security administrator
Getting File Systems for a File Pool on page 259	GET	/v1/file/storage-systems/*storageSystemId*/file-pools/*poolId*/file-systems	Storage administrator System administrator Security administrator
Getting file systems for a virtual file server on page 263	GET	/v1/file/storage-systems/*storageSystemId*/file-systems/vfs/*vfsuuId*/file-systems	Storage administrator System administrator Security administrator
Creating a file system on page 266	POST	/v1/file/file-systems/*storageSystemId*/file-systems	Storage administrator
Deleting a file system on page 281	DELETE	/v1/file/storage-systems/*storageSystemId*/file-systems/*fileSystemId*	Storage administrator
Mounting a file system on page 270	PATCH	/v1/file/storage-systems/*storageSystemId*/file-systems/*fileSystemId*	Storage administrator
Unmounting a file system on page 274	PATCH	/v1/file/storage-systems/*storageSystemId*/file-systems/*fileSystemId*	Storage administrator
Updating a file system on page 277	PATCH	/v1/file/storage-systems/*storageSystemId*/file-systems/*fileSystemId*	Storage administrator

Getting file systems for a storage system

You can display information about file systems in a specified storage system.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/file/storage-systems/storageSystemId/
file-systems
```

Use the ID of the storage system as the *storageSystemId.*

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
    "fileSystems":
    [
        "links": [
        {
        "rel":"_self",
        "href":""
        },
        {
        "rel":"_filePool1",
        "href":"/v1/storage-systems/{storageSystemId}/filepools/
        filePool1"
        },
        {
        "rel":"_fsServer1",
        "href":"/v1/storage-systems/{storageSystemId}/vfs/
        fsServer1"
        }
        ],
             "id": "",
             "label": "",
             "filePoolId": ,
             "evsId": 1,
             "fileSystemCapacityDetails":
             {
                 "capacity": ,
                 "freeCapacity": ,
                 "usedCapacity": ,
                 "expansionLimit": ,
                 "unlimitedExpansion":
             },
             "status": "",
             "blockSize": ,
             "fileSystemTraits":
             {
                 "readOnly": ,
                 "sysLocked": ,
                 "worm": ,
                 "nonStrictWorm": ,
                 "readCache": ,
                 "objectReplicationTarget": ,
                 "ndmRecoveryTarget": ,
                 "dedupeSupported": ,
                 "dedupeEnabled":
             }
    }
  ]
}
```

Parameter	Type	Description
links	List	Displays related resources.

Parameter	Type	Description
self	String	URI that includes the resource ID.
id	Integer	ID of the file system.
label	String	Name of the file system.
filePoolId	String	ID of the storage pool.
evsId	Integer	ID of the virtual file server.
fileSystemCapacityDetails	String	The file system capacity details.
capacity	String	The file system size limit in bytes. Min = 1, max = 1099511627776.
freeCapacity	String	Capacity available, in bytes.
usedCapacity	String	Sum of used capacity across all pools of the specified type in the storage system, in bytes.
expansionLimit	String	Size of the expansion limit, in bytes.
unlimitedExpansion	Boolean	Whether or not the expansion is limited.
status	String	Status of the virtual file server. Valid values: mounted or unmounted.
blockSize	String	Block size of the file system, either 32 KB or 4 KB.
fileSystemTraits	String	The characteristics of the file system. It describes whether the file system is read-only, and whether object replication is set on the file system.
readOnly	Boolean	Whether or not the cache is read.
sysLocked	Boolean	Whether or not the file system is locked.
worm	Boolean	The file system WORM type. The server supports two types of WORM file systems: strict and non-strict.
nonStrictWorm	Boolean	The nonStrictWorm file system enables users to test WORM storage before committing to a "strict" file system.
readCache	Boolean	Whether or not the cache is read.
objectReplicationTarget	Boolean	Whether or not there is an object replication target.
ndmRecoveryTarget	Boolean	Whether or not there is an object recovery target.
dedupeSupported	Boolean	Whether or not deduplication is supported.
dedupeEnabled	Boolean	Whether or not deduplication is enabled.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example code

Request with JSON command:

```
https://172.17.64.109/v1/file/storage-systems/410500/file-
systems
```

JSON response:


```
{
  "fileSystems": [
    {
      "id": "55E9CC7EDEBE2B0D0000000000000000",
      "label": "AutomationFS85",
      "filePoolId": 6190571495709419190,
      "evsId": 2,
      "fileSystemCapacityDetails": {
        "capacity": 19126026240,
        "freeCapacity": 16399564800,
        "usedCapacity": 2726461440,
        "expansionLimit": 1073741824,
        "unlimitedExpansion": false
      },
      "status": "Mounted",
      "blockSize": 32768,
      "fileSystemTraits": {
        "readOnly": false,
        "sysLocked": false,
        "worm": false,
        "nonStrictWorm": false,
        "readCache": false,
        "objectReplicationTarget": false,
        "ndmRecoveryTarget": false,
        "dedupeSupported": true,
        "dedupeEnabled": true
      }
    },
```

```
  ]
}
```

Getting a single file system

You can display information about a specific file system.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/file/storage-systems/storageSystemId/
file-systems/fileSystemId
```

Use the ID of the storage system as the *storageSystemId.*

Use the ID of the file system as the *fileSystemId.*

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "id": "",
  "label": "",
  "filePoolId": ,
  "evsId": ,
  "fileSystemCapacityDetails": {
    "capacity": ,
    "freeCapacity": ,
    "usedCapacity": ,
    "expansionLimit": ,
    "unlimitedExpansion":
  },
  "status": "",
  "blockSize": ,
  "fileSystemTraits": {
    "readOnly": ,
    "sysLocked": ,
    "worm": ,
    "nonStrictWorm": ,
    "readCache": ,
    "objectReplicationTarget": ,
    "ndmRecoveryTarget": ,
    "dedupeSupported": ,
    "dedupeEnabled":
  }
}
```

Parameter	Type	Description
id	Integer	ID of the file system.

Parameter	Type	Description
label	String	Name of the file system.
filePoolId	String	ID of the storage pool.
evsId	Integer	ID of the virtual file server.
status	String	Status of the virtual file server. Valid values: mounted or unmounted.
blockSize	String	Block size of the file system, either 32 KB or 4 KB.
fileSystemCapacityDetails	String	The file system capacity details.
capacity	String	The file system size limit in bytes. Min = 1, max = 1099511627776.
freeCapacity	String	Capacity available, in bytes.
usedCapacity	String	Sum of used capacity across all pools of the specified type in the storage system, in bytes.
expansionLimit	String	Size of the expansion limit, in bytes.
unlimitedExpansion	Boolean	Whether or not the expansion is limited.
fileSystemTraits	String	The characteristics of the file system. It describes whether the file system is read-only, and whether object replication is set on the file system.
readOnly	Boolean	Whether or not the cache is read.
sysLocked	Boolean	Whether or not the file system is locked.
worm	Boolean	The file system WORM type. The server supports two types of WORM file systems: strict and non-strict.
nonStrictWorm	Boolean	The nonStrictWorm file system enables users to test WORM storage before committing to a "strict" file system.
readCache	Boolean	Whether or not the cache is read.
objectReplicationTarget	Boolean	Whether or not there is an object replication target.
ndmRecoveryTarget	Boolean	Whether or not there is an object recovery target.
dedupeSupported	Boolean	Whether or not deduplication is supported.
dedupeEnabled	Boolean	Whether or not deduplication is enabled.

Return codes

Status code	HTTP name	Description
200	OK	Success.

Status code	HTTP name	Description
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example code

Request with JSON command:

```
https://172.17.64.109/v1/file/storage-systems/410500/file-
systems/55E9F6F812D9CF310000000000000000
```

JSON response:

```
{
  "id": "55E9F6F812D9CF310000000000000000",
  "label": "AutomationFS53",
  "filePoolId": 6190571495709419190,
  "evsId": 2,
  "fileSystemCapacityDetails": {
    "capacity": 19126026240,
    "freeCapacity": 16399499264,
    "usedCapacity": 2726526976,
    "expansionLimit": 1073741824,
    "unlimitedExpansion": false
  },
  "status": "Mounted",
  "blockSize": 32768,
  "fileSystemTraits": {
    "readOnly": false,
    "sysLocked": false,
    "worm": false,
    "nonStrictWorm": false,
    "readCache": false,
    "objectReplicationTarget": false,
    "ndmRecoveryTarget": false,
    "dedupeSupported": true,
    "dedupeEnabled": true
  }
}
```

Getting File Systems for a File Pool

You can display information about all file systems in the specified file pool.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/file/storage-systems/storageSystemId/
file-pools/poolId/file-systems
```

Use the ID of the storage system as the *storageSystemId.*

Use the ID of the file pool as the *poolId.*

Request structure

Not applicable.

Response structure

The response body structure is shows below:

```
{
    "fileSystems":
    [
        "links": [
        {
        "rel":"_self",
        "href":""
        },
        {
        "rel":"_filePool1",
        "href":"/v1/storage-systems/{storageSystemId}/filepools/
        filePool1"
        },
        {
        "rel":"_fsServer1",
        "href":"/v1/storage-systems/{storageSystemId}/fs-server/
        fsServer1"
        }
        ],
             "id": "",
             "label": "",
             "filePoolId": ,
             "evsId": 1,
             "fileSystemCapacityDetails":
             {
                 "capacity": ,
                 "freeCapacity": ,
                 "usedCapacity": ,
                 "expansionLimit": ,
                 "unlimitedExpansion":
             },
             "status": "",
             "blockSize": ,
             "fileSystemTraits":
             {
                 "readOnly": ,
                 "sysLocked": ,
                 "worm": ,
                 "nonStrictWorm": ,
                 "readCache": ,
```

```
                "objectReplicationTarget": ,
                "ndmRecoveryTarget": ,
                "dedupeSupported": ,
                "dedupeEnabled":
            }
                        }
        ]
}
```

Parameter	Type	Description
links	List	Displays related resources.
self	String	URI that includes the resource ID.
id	Integer	ID of the file system.
label	String	Name of the file system.
filePoolId	String	ID of the storage pool.
evsId	Integer	ID of the virtual file server.
fileSystemCapacityDetails	String	The file system capacity details.
capacity	String	The file system size limit in bytes. Min = 1, max = 1099511627776.
freeCapacity	String	Capacity available, in bytes.
usedCapacity	String	Sum of used capacity across all pools of the specified type in the storage system, in bytes.
expansionLimit	String	Size of the expansion limit, in bytes.
unlimitedExpansion	Boolean	Whether or not the expansion is limited.
status	String	Status of the virtual file server. Valid values: mounted or unmounted.
blockSize	String	Block size of the file system, either 32 KB or 4 KB.
fileSystemTraits	String	The characteristics of the file system. It describes whether the file system is read-only, and whether object replication is set on the file system.
readOnly	Boolean	Whether or not the cache is read.
sysLocked	Boolean	Whether or not the file system is locked.
worm	Boolean	The file system WORM type. The server supports two types of WORM file systems: strict and non-strict.
nonStrictWorm	Boolean	The nonStrictWorm file system enables users to test WORM storage before committing to a "strict" file system.
readCache	Boolean	Whether or not the cache is read.
objectReplicationTarget	Boolean	Whether or not there is an object replication target.

Parameter	Type	Description
ndmRecoveryTarget	Boolean	Whether or not there is an object recovery target.
dedupeSupported	Boolean	Whether or not deduplication is supported.
dedupeEnabled	Boolean	Whether or not deduplication is enabled.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example code

Request with JSON command:

```
https://172.17.64.111/v1/file/storage-systems/410500/file-pools/
6190571495709419190/file-systems
```

JSON response:

```
{
    "fileSystems":
    [
        "links": [
        {
        "rel":"_self",
        "href":""
        },
        {
        "rel":"_filePool1",
        "href":"/v1/storage-systems/{storageSystemId}/filepools/
        filePool1"
        },
        {
        "rel":"_fsServer1",
        "href":"/v1/storage-systems/{storageSystemId}/fs-server/
        fsServer1"
        }
        ],
             "id": "050001134F55D7B10000000000000000",
             "label": "FSCreatedFromSmu",
```

```
                "filePoolId": 361060684191926460,
                "evsId": 1,
                "fileSystemCapacityDetails":
                {
                    "capacity": 19495124992,
                    "freeCapacity": 0,
                    "usedCapacity": 0,
                    "expansionLimit": 10737418240,
                    "unlimitedExpansion": false
                },
                "status": "Not Mounted",
                "blockSize": 0,
                "fileSystemTraits":
                {
                    "readOnly": false,
                    "sysLocked": false,
                    "worm": false,
                    "nonStrictWorm": false,
                    "readCache": false,
                    "objectReplicationTarget": false,
                    "ndmRecoveryTarget": false,
                    "dedupeSupported": false,
                    "dedupeEnabled": false
                }
                          }
        ]
}
```


Getting file systems for a virtual file server

In a specified storage system, you can display information about file systems that belong to a virtual file server.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/file/storage-systems/
storageSystemId/vfs/vfsuuId/file-systems
```

Use the ID of the storage system as the *storageSystemId.*

Use the universal unique identifier of the virtual file server as the *vfsuuId.*

Request structure

Not applicable.

Response structure

The response body structure is shown below:


```
{
 "fileSystems":
{
  "id": "",
  "label": "",
  "filePoolId": ,
```

```
  "evsId": ,
  "fileSystemCapacityDetails": {
    "capacity": ,
    "freeCapacity": ,
    "usedCapacity": ,
    "expansionLimit": ,
    "unlimitedExpansion":
  },
  "status": "",
  "blockSize": ,
  "fileSystemTraits": {
    "readOnly": ,
    "sysLocked": ,
    "worm": ,
    "nonStrictWorm": ,
    "readCache": ,
    "objectReplicationTarget": ,
    "ndmRecoveryTarget": ,
    "dedupeSupported": ,
    "dedupeEnabled":
  }
}
```

Parameter	Type	Description
id	Integer	ID of the file system.
label	String	Name of the file system.
filePoolId	String	ID of the storage pool.
evsId	Integer	ID of the virtual file server.
status	String	Status of the virtual file server. Valid values: mounted or unmounted.
blockSize	String	Block size of the file system, either 32 KB or 4 KB.
fileSystemCapacityDetails	String	The file system capacity details.
capacity	String	The file system size limit in bytes. Min = 1, max = 1099511627776.
freeCapacity	String	Capacity available, in bytes.
usedCapacity	String	Sum of used capacity across all pools of the specified type in the storage system, in bytes.
expansionLimit	String	Size of the expansion limit, in bytes.
unlimitedExpansion	Boolean	Whether or not the expansion is limited.
fileSystemTraits	String	The characteristics of the file system. It describes whether the file system is read-only, and whether object replication is set on the file system.
readOnly	Boolean	Whether or not the cache is read.
sysLocked	Boolean	Whether or not the file system is locked.

Parameter	Type	Description
worm	Boolean	The file system WORM type. The server supports two types of WORM file systems: strict and non-strict.
nonStrictWorm	Boolean	The nonStrictWorm file system enables users to test WORM storage before committing to a "strict" file system.
readCache	Boolean	Whether or not the cache is read.
objectReplicationTarget	Boolean	Whether or not there is an object replication target.
ndmRecoveryTarget	Boolean	Whether or not there is an object recovery target.
dedupeSupported	Boolean	Whether or not deduplication is supported.
dedupeEnabled	Boolean	Whether or not deduplication is enabled.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example code

Request with JSON command:

```
https://172.17.64.109/v1/file/storage-systems/410304/vfs/
0201EF861F061E7B0000000000000000/file-systems
```

JSON response:

```
{
 "fileSystems": [
{
"id": "0201EF861F061E7B0000000000000000",
"label": "EVS-true-FS-test-1-SS",
"filePoolId": 144124183381760338,
"evsId": 1,
"status": "Mounted",
"blockSize": 32768,
```

```
"fileSystemCapacityDetails":
{
"capacity": 19260243968,
"freeCapacity": 16478306304,
"usedCapacity": 2781937664,
"expansionLimit": 112321312334,
"unlimitedExpansion": false
},
"fileSystemTraits":
{
"readOnly": false,
"sysLocked": false,
"worm": false,
"nonStrictWorm": false,
"readCache": false,
"objectReplicationTarget": false,
"ndmRecoveryTarget": false,
"dedupeSupported": true,
"dedupeEnabled": true,
}
}
```

Creating a file system

You can create a file system. After creating the file system, the API mounts and formats the new file system.

HTTP request syntax (URI)

`POST https://`*`ipAddress`*`/v1/file/storage-systems/`*`storageSystemId`*`/file-systems`

Use the ID of the storage system as the *storageSystemId.*

Request structure

The request body structure is shown below:

```
{
"label": "",
"filePoolId": "",
"capacity": ,
"blockSize": ,
"evsId": "",
}
```

Parameter	Required	Type	Description
label	No	String	The name of the file system.
filePoolId	Yes	String	The storage pool ID where the file system is created.
capacity	Yes	String	The file system size limit, in bytes. Min = 1, max = 1099511627776.

Parameter	Required	Type	Description
blockSize	No	Integer	The block size of the file system, either 32 KB or 4 KB.
evsId	Yes	String	ID of the virtual file server.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
  {
      "text": "",
      "messageCode": "",
      "parameters":
      {
      }
  },
 "user": "",
 "status": "",
 "startDate": ,
 "endDate": ,
 "parentJobId": ,
 "reports":
 [
     {
          "reportMessage":
     {
             "text": "",
             "messageCode": "",
             "parameters":
             {
                 "fileSystemId": ""
             }
         },
         "severity": "",
         "creationDate":
    }
 ],
 "links":
 [
      {
        "rel": "_self",
        "href": "/v1/jobs/"
 }
 ],
 "tags":
 [
 ],
 "isSystem":
}
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the

Status code	HTTP name	Description
		processing has not been completed.
400	Bad request	Required HTTP header was not specified.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
409	Conflict	The specified resource type does not match the existing resource type.
503	Service unavailable	The server is currently unable to receive requests. Retry your request.

Example request

```
https://172.17.64.122/v1/file/storage-systems/410209/file-
systems
```

Example request

```
{
 "label":"NewFS",
 "filePoolId":"144578117277982905",
 "capacity":10737418240,
 "blockSize":32,
 "evsId":"2",
 }
```

Example response

```
{
 "jobId": "a88bd309-fe36-4d68-b3b3-342d1edf20e8",
  "title": {
     "text": "Creating File System with Label FSforenableevs",
     "messageCode": "CreateFileSystemJobPreTitleMessage",
     "parameters": {}
    },
  "user": "sysadmin",
  "status": "IN_PROGRESS",
  "startDate": 1452129643172,
  "endDate": null,
```

```
  "parentJobId": null,
  "reports": [],
  "links": [
      {
          "rel": "_self",
          "href": "/v1/jobs/a88bd309-fe36-4d68-
b3b3-342d1edf20e8"
       }
    ],
   "tags": [{
      "tag": "STORAGE"
    },
    {
      "tag": "CREATE"
    },
    {
      "tag": "410500"
    },
    {
      "tag": "FILE"
    },
    {
      "tag": "USER"
    }
],
   "isSystem": false
}
```

Mounting a file system

You can mount a file system using Storage Advisor even if a file system already created outside of Storage Advisor. The API also formats the file system after mounting it.

HTTP request syntax (URI)

`PATCH https://`*`ipAddress`*`/v1/file/storage-systems/`*`storageSystemId`*`/file-systems/`*`fileSystemId`*

Use the ID of the storage system as the *storageSystemId.*

Use the ID of the file system as the *fileSystemId.*

Request structure

```
{
"label" : "",
"status" : "mount",
"blockSize" : "",
"expansionLimit " : ""
}
```

Parameter	Required	Type	Description
label	No	String	The name of the file system.
status	No	String	Mount or unmount. Default value: mount.
blockSize	Yes	String	When mounting a file system this parameter is required. If a file system is formatted, this parameter is ignored.
expansionLimit	No	String	The file system expansion limit.

Response structure

```
{
  "jobId": "",
  "title": {
     "text": "",
     "messageCode": "",
     "parameters": {}
    },
  "user": "",
  "status": "",
  "startDate": ,
  "endDate": ,
  "parentJobId": ,
  "reports": [],
  "links": [
      {
          "rel": "_self",
          "href": "/v1/jobs/"
        }
    ],
  "tags": [],
  "isSystem":
}
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.

Parameter	Type	Description
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
204	No content	The request was successful, but the response does not exist.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.

Status code	HTTP name	Description
404	Not found	The specified resource ID is not valid or the resource does not exist.
409	Conflict	The specified resource type does not match the existing resource type.

Example request

```
https://172.17.64.109/v1/file/storage-systems/410500/file-
systems/55E9F6F812D9CF310000000000000000
```

Example request

```
{
"label" : "",
"status" : "mount",
"blockSize" : "",
"expansionLimit " : ""
}
```

Example Response

```
{
  "jobId": "bb1b9bd9-b0f1-4842-8b95-521bdef776ba",
  "title": {
     "text": "Modifying File System with Label FirstFS2",
     "messageCode": "MountFileSystemJobPreTitleMessage",
     "parameters": {}
    },
  "user": "sysadmin",
  "status": "IN_PROGRESS",
  "startDate": 1452129926168,
  "endDate": null,
  "parentJobId": null,
  "reports": [],
  "links": [
      {
          "rel": "_self",
          "href": "/v1/jobs/bb1b9bd9-
b0f1-4842-8b95-521bdef776ba"
        }
    ],
  "tags": [ {
      "tag": "STORAGE"
```

```
    },
    {
      "tag": "410500"
    },
    {
      "tag": "0500B2335827A5C60000000000000000"
    },
    {
      "tag": "UPDATE"
    },
    {
      "tag": "FILE"
    },
    {
      "tag": "USER"
    }
  ],
  "isSystem": false
}
```

Unmounting a file system

You can unmount a file system.

HTTP request syntax (URI)

```
PATCH https://ipAddress/v1/file/storage-systems/storageSystemId/
file-systems/fileSystemId
```

Use the ID of the storage system as the *storageSystemId.*

Use the ID of the file system as the *fileSystemId.*

Request structure

The request body structure is shown below:

```
{
"label"
"status" : "unmount",
"blockSize" : "",
"expansionLimit " : ""
}
```

Parameter	Required	Type	Description
label	No	String	The name of the file system.
status	Yes	String	Mount or unmount.
blockSize	No	String	If the file system is formatted, this parameter is ignored.

Parameter	Required	Type	Description
expansionLimit	No	String	The file system expansion limit.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title": {
     "text": "",
     "messageCode": "",
     "parameters": {}
    },
  "user": "",
  "status": "",
  "startDate": ,
  "endDate": ,
  "parentJobId": ,
  "reports": [],
  "links": [
      {
          "rel": "_self",
          "href": "/v1/jobs/"
        }
    ],
  "tags": [],
  "isSystem":
}
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors

Parameter	Type	Description
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
204	No content	The request was successful, but the response does not exist.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
409	Conflict	The specified resource type does not match the existing resource type.

Example request

```
{
```

```
  "status":"unmount"
}
```

Example code

Request with JSON command:

```
https://172.17.64.122/v1/file/storage-systems/410209/file-
systems/02029EC8EBDD7EB80000000000000000
```

Example Response

```
{
  "jobId": "bb1b9bd9-b0f1-4842-8b95-521bdef776ba",
  "title": {
     "text": "Mounting File System",
     "messageCode": "MountFileSystemJobPreTitleMessage",
     "parameters": {}
    },
  "user": "sysadmin",
  "status": "IN_PROGRESS",
  "startDate": 1452129926168,
  "endDate": null,
  "parentJobId": null,
  "reports": [],
  "links": [
      {
          "rel": "_self",
          "href": "/v1/jobs/bb1b9bd9-
b0f1-4842-8b95-521bdef776ba"
        }
    ],
  "tags": [],
  "isSystem": false
}
```

Updating a file system

You can modify a file system with one or more parameters. You can also rename or expand a file system.

HTTP request syntax (URI)

PATCH https://*ipAddress*/v1/file/storage-systems/*storageSystemId*/file-systems/*fileSystemId*

Use the ID of the storage system as the *storageSystemd.*

Use the ID of the file system as the *fileSystemId.*

Request structure

The request body structure is shown below:

```
{
“label”: “”,
“expansionLimit”: “”
}
```

Parameter	Required	Type	Description
label	No	String	The name of the file system.
expansionLimit	Yes	String	The file system expansion limit.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title": {
     "text": "",
     "messageCode": "",
     "parameters": {}
    },
  "user": "",
  "status": "",
  "startDate": ,
  "endDate": ,
  "parentJobId": ,
  "reports": [],
  "links": [
      {
          "rel": "_self",
          "href": "/v1/jobs/"
        }
    ],
  "tags": [],
  "isSystem":
}
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.

Parameter	Type	Description
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
200	OK	Success.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
 https://172.17.64.122/v1/file/storage-systems/410209/file-
systems/02029F5C1178864D0000000000000000
```

Example request

```
{
 "label":"NewFS17",
 "expansionLimit":10737418240
}
```

Example response

```
{
  "jobId": "bb1b9bd9-b0f1-4842-8b95-521bdef776ba",
  "title": {
     "text": "Modifying File System with Label FirstFS2",
     "messageCode": "ModifyFileSystemJobPreTitleMessage",
     "parameters": {}
    },
  "user": "sysadmin",
  "status": "IN_PROGRESS",
  "startDate": 1452129926168,
  "endDate": null,
  "parentJobId": null,
  "reports": [],
  "links": [
      {
          "rel": "_self",
          "href": "/v1/jobs/bb1b9bd9-
b0f1-4842-8b95-521bdef776ba"
       }
    ],
  "tags": [{
      "tag": "STORAGE"
    },
    {
      "tag": "410500"
    },
    {
      "tag": "0500B2335827A5C60000000000000000"
    },
    {
      "tag": "UPDATE"
    },
    {
      "tag": "FILE"
    },
    {
```

```
        "tag": "USER"
      }
    ],
    "isSystem": false
 }
```

Deleting a file system

You can delete a file system. Unmount the file system before deleting it. When a file system is deleted all associated shares (Windows OS) and exports (Linux OS) are deleted.

HTTP request syntax (URI)

`DELETE https://`*`ipAddress`*`/v1/file/storage-systems/`*`storageSystemId`*`/file-systems/`*`fileSystemId`*

Use the ID of the storage system as the *storageSystemId.*

Use the ID of the file system as the *fileSystemId.*

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/"
      }
   ],
   "tags":
   [
```

```
    ],
    "isSystem":
}
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
200	OK	Success.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.

Status code	HTTP name	Description
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example code

Request with JSON command:

```
https://172.17.64.109:8183/v1/file/storage-systems/21000/file-
systems/ebc4b9b8-529e-11d1-9003-040100050000
```

JSON Response:


```
{
  "jobId": "e10b1e6c-6985-4a1d-9161-68cfa3c96b29",
  "title": {
    "text": "Deleting File System with Label FirstFS2renamed",
    "messageCode": "DeleteFileSystemJobPreTitleMessage",
    "parameters": {}
  },
  "user": "sysadmin",
  "status": "IN_PROGRESS",
  "startDate": 1453254388625,
  "endDate": null,
  "parentJobId": null,
  "reports": [],
  "links": [
    {
      "rel": "_self",
      "href": "/v1/jobs/e10b1e6c-6985-4a1d-9161-68cfa3c96b29"
    }
  ],
  "tags": [ {
      "tag": "STORAGE"
    },
    {
      "tag": "DELETE"
    },
    {
      "tag": "410500"
    },
    {
      "tag": "0500B2335827A5C60000000000000000"
    },
    {
      "tag": "FILE"
    },
    {
```

```
      "tag": "USER"
    }
  ],
  "isSystem": false
}
```

Share management resources

Request	Method	URI	Role
Listing all shares on page 284	GET	/v1/file/storage-systems/*storageSystemId*/shares	Storage administrator System administrator Security administrator
Listing shares in the file system on page 288	GET	/v1/file/storage-systems/*storageSystemId*/file-systems/*fileSystemId*/shares	Storage administrator System administrator Security administrator
Getting a share on page 292	GET	/v1/file/storage-systems/*storageSystemId*/file-systems/*fileSystemId*/shares/*shareId*	Storage administrator System administrator Security administrator
Creating a share on page 297	POST	/v1/file/storage-systems/*storageSystemId*/shares	Storage administrator
Modifying a share on page 301	PATCH	/v1/file/storage-systems/*storageSystemId*/file-systems/*fileSystemId*/shares/*shareId*	Storage administrator Security administrator
Deleting a share on page 304	DELETE	/v1/file/storage-systems/*storageSystemId*/file-systems/*fileSystemId*/shares/*shareId*	Storage administrator

Listing all shares

You can display a list of shares in the specified system.

HTTP request syntax (URI)

`GET https://`*`ipAddress`*`/v1/file/storage-systems/`*`storageSystemId`*`/shares`

Use the ID of the storage system as the *storageSystemId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
    "shares":
    [
        {
            "id": "",
            "name": "",
            "fileSystemPath": "",
            "fileSystemId": "",
            "evsId": ,
            "permissions":
            [
            ],
            "accessConfiguration": "",
            "maxConcurrentUsers": ,
            "snapshotOptions": "",
            "cacheOptions": "",
            "transferToReplicationTarget": "",
            "userHomeDirectoryMode": "",
            "userHomeDirectoryPath": "",
            "followSymbolicLinks": ,
            "followGlobalSymbolicLinks": ,
            "links":
            [
                {
                    "rel": "_self",
                    "href": ""
                },
                {
                    "rel": "_filesystem",
                    "href": ""
                },
                {
                    "rel": "_vfs",
                    "href": ""
                }
            ]
    ]    }
}
```

Parameter	Type	Description
id	String	ID of the share.
name	String	Name of the resource.
fileSystemPath	String	The file system location to be accessed through the resource. Min = 1, max = 80.
fileSystemId	String	ID of the file system. Min = 0, max = 256.

Parameter	Type	Description
evsId	Integer	ID of the virtual file server.
permissions	List	Security permissions that grant or deny access to files and folders.
accessConfiguration	String	The access security for this resource. Min = 1, max = 5957.
maxConcurrentUsers	String	Total number of users accessing the resource at a given time, -1 value for unlimited.
snapshotOptions	String	0: Hides and disallows access to snapshots. 1: Hides snapshots, but still allows access to hidden snapshots. 3: Displays and allows access to snapshots.
cacheOptions	Integer	0: Permits the user to specify individual files required for offline access. 4: Automatic caching is enabled for all files on the entire share. 8: Automatic caching is enabled for all programs on the entire share. 12: No caching of files or folders.
transferToReplicationTarget	String	0: NFS exports are not transferred to recovered file systems. 1: When the target file system is brought online, NFS exports are transferred. 2: NFS exports are transferred to recovered file systems.
userHomeDirectoryMode	Integer	The user home directory mapping mode. 0: Disable the home directory feature for this share. Do not automatically create home directories on this share for users. 1: Create the user home directories based on the home directory information supplied by the Active Directory server for each user. Do not specify a path. 2: Create the user home directory by converting the Windows user name to lower case. 3: Create the user home directory by converting the Windows user name to lower case, then hide the path for other users. 4: Create the user home directory by creating a directory named for the Windows domain name, then converting the Windows user name to lower case and creating a sub-directory by that name. 5: Create the user home directory by converting the UNIX user name to lower case.

Parameter	Type	Description
userHomeDirectoryPath	String	The user home directory path. Min = 0, max = 127.
followSymbolicLinks	Boolean	Whether or not to enable CIFS clients to follow symbolic links using Microsoft DFS mechanism for this share.
followGlobalSymbolicLinks	Boolean	Whether or not to enable CIFS clients to follow global (absolute) symbolic links using Microsoft DFS mechanism for this share.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
fileSystem	String	URI that includes the file system ID.
vfs	String	URI that includes the virtual file server ID.

Return codes

Status code	HTTP name	Description
200	OK	Success.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example code

Request with JSON command:

```
https://172.17.64.108/v1/file/storage-systems/410209/shares
```

JSON response:

```
{
    "shares":
    [
        {
            "id": "fdad1f82-74de-11d1-9000-ac60536d5065",
```

```
                "name": "C$",
                "fileSystemPath": "\",
                "fileSystemId": "00000000000000000000000000000000",
                "evsId": 1,
                "permissions":
                [
                ],
                "accessConfiguration": "",
                "maxConcurrentUsers": -1,
                "snapshotOptions": "HIDE_AND_ALLOW_ACCESS",
                "cacheOptions": "MANUAL_CACHING_DOCS",
                "transferToReplicationTarget": "UseFSDefault",
                "userHomeDirectoryMode": "Off",
                "userHomeDirectoryPath": "",
                "followSymbolicLinks": true,
                "followGlobalSymbolicLinks": false,
                "links":
                [
                    {
                        "rel": "_self",
                        "href": "http://172.17.64.109/v1/file/
storage-systems/410500/shares"
                    },
                    {
                        "rel": "_filesystem",
                        "href": "http://172.17.64.109/v1/file/
storage-systems/410500/file-systems/
00000000000000000000000000000000"
                    },
                    {
                        "rel": "_vfs",
                        "href": "http://172.17.64.109/v1/file/
storage-systems/410500/vfs/55e9ac86-5cf4-11d1-9005-040100050000"
                    }
                ]
    ]     }
}
```


Listing shares in the file system

You can display a list of shares in the specified file system.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/file/storage-systems/storageSystemId/
file-systems/fileSystemId/shares
```

Use the ID of the storage system as the *storageSystemId*.

Use the ID of the file system as the *fileSystemId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
    "shares":
    [
        {
            "id": "",
            "name": "",
            "fileSystemPath": "",
            "fileSystemId": "",
            "evsId": ,
            "permissions":
            [
            ],
            "accessConfiguration": "",
            "maxConcurrentUsers": ,
            "snapshotOptions": "",
            "cacheOptions": "",
            "transferToReplicationTarget": "",
            "userHomeDirectoryMode": "",
            "userHomeDirectoryPath": "",
            "followSymbolicLinks": ,
            "followGlobalSymbolicLinks": ,
            "links":
            [
                {
                    "rel": "_self",
                    "href": ""
                },
                {
                    "rel": "_filesystem",
                    "href": ""
                },
                {
                    "rel": "_vfs",
                    "href": ""
                }
            ]
    ]    }
}
```

Parameter	Type	Description
id	String	ID of the share.
name	String	Name of the resource.
fileSystemPath	String	The file system location to be accessed through the resource. Min = 1, max = 80.
fileSystemId	String	ID of the file system. Min = 0, max = 256.
evsId	Integer	ID of the virtual file server.
permissions	List	Security permissions that grant or deny access to files and folders.

Parameter	Type	Description
accessConfiguration	String	The access security for this resource. Min = 1, max = 5957.
maxConcurrentUsers	String	Total number of users accessing the resource at a given time, -1 value for unlimited.
snapshotOptions	String	0: Hides and disallows access to snapshots. 1: Hides snapshots, but still allows access to hidden snapshots. 3: Displays and allows access to snapshots.
cacheOptions	Integer	0: Permits the user to specify individual files required for offline access. 4: Automatic caching is enabled for all files on the entire share. 8: Automatic caching is enabled for all programs on the entire share. 12: No caching of files or folders.
transferToReplicationTarget	String	0: NFS exports are not transferred to recovered file systems. 1: When the target file system is brought online, NFS exports are transferred. 2: NFS exports are transferred to recovered file systems.
userHomeDirectoryMode	Integer	The user home directory mapping mode. 0: Disable the home directory feature for this share. Do not automatically create home directories on this share for users. 1: Create the user home directories based on the home directory information supplied by the Active Directory server for each user. Do not specify a path. 2: Create the user home directory by converting the Windows user name to lower case. 3: Create the user home directory by converting the Windows user name to lower case, then hide the path for other users. 4: Create the user home directory by creating a directory named for the Windows domain name, then converting the Windows user name to lower case and creating a sub-directory by that name. 5: Create the user home directory by converting the UNIX user name to lower case.
userHomeDirectoryPath	String	The user home directory path. Min = 0, max = 127.

Parameter	Type	Description
followSymbolicLinks	Boolean	Whether or not to enable CIFS clients to follow symbolic links using Microsoft DFS mechanism for this share.
followGlobalSymbolicLinks	Boolean	Whether or not to enable CIFS clients to follow global (absolute) symbolic links using Microsoft DFS mechanism for this share.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
fileSystem	String	URI that includes the file system ID.
vfs	String	URI that includes the virtual file server ID.

Return codes

Status code	HTTP name	Description
200	OK	Success.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example code

Request with JSON command:

```
https://172.17.64.108/v1/file/storage-systems/410209/file-
systems/020344B00E161D570000000000000000/shares
```

JSON response:

```
{
"shares":
[
    {
        "id": "f391dfe4-67df-11d1-96c9-040100020009",
        "label": "NewExportMD",
        "fileSystemPath": "\HSA",
```

```
                "fileSystemId":
"020344B00E161D570000000000000000",
                "evsId": 1,
                "permissions":
                [
                ],
                "accessConfiguration": "",
                "maxConcurrentUsers": -1,
                "snapshotOptions": "HIDE_AND_DISABLE_ACCESS",
                "cacheOptions": "MANUAL_CACHING_DOCS",
                "transferToReplicationTarget": "UseFSDefault",
                "userHomeDirectoryMode": "Off",
                "userHomeDirectoryPath": "",
                "followSymplicLinks": true,
                "followGlobalSymplicLinks": false,
                "links":
                [
                    {
                        "rel": "_self",
                        "href": "http://172.17.64.108/v1/file/
storage-systems/410209/file-systems/
020344B00E161D570000000000000000/shares"
                    },
                    {
                        "rel": "_filesystem",
                        "href": "http://172.17.64.108/v1/file/
storage-systems/410209/file-systems/
020344B00E161D570000000000000000"
                    }
                ]
            }
        ]
    }
```

Getting a share

You can display information about a share in the specified storage system.

HTTP request syntax (URI)

`GET https://`*`ipAddress`*`/v1/file/storage-systems/`*`storageSystemId`*`/file-systems/`*`fileSystemId`*`/shares/`*`shareId`*

Use the ID of the storage system as the *storageSystemId*.

Use the ID of the file system as the *fileSystemId*.

Use the ID of the share as the *shareId*.

Request structure

Not applicable.

Response structure

```
    {
```

```
        "id": "",
        "label": "",
        "fileSystemPath": "",
        "fileSystemId": "",
        "evsId": 1,
        "permissions":
        [
            {
                "name": "",
                "permissionType":
                {
                    "allowFullControl": ,
                    "allowChange": ,
                    "allowRead": ,
                    "denyFullControl": ,
                    "denyChange": ,
                    "denyRead":
                }
            }
        ],
        "accessConfiguration": "",
        "maxConcurrentUsers": ,
        "snapshotOptions": "",
        "cacheOptions": "",
        "transferToReplicationTarget": "",
        "userHomeDirectoryMode": "",
        "userHomeDirectoryPath": "",
        "followSymplicLinks": ,
        "followGlobalSymplicLinks": ,
        "links":
        [
            {
                "rel": "_self",
                "href": "http://172.17.64.108/v1/file/storage-
systems/410209/file-systems/020344B00E161D570000000000000000/
shares/f391dfe4-67df-11d1-96c9-040100020009"
            },
            {
                "rel": "_filesystem1",
                "href": "http://172.17.64.108/v1/file/storage-
systems/410209/file-systems/020344B00E161D570000000000000000"
            },
            {
                "rel": "_evs",
                "href": "http://172.17.64.108/v1/file/storage-
systems/410209/vfs/4ae98a4a-5e1b-11d1-9004-040100020009"
            }
        ]
    }
```

Parameter	Type	Description
id	String	ID of the share.
label	String	Name of the share.

Parameter	Type	Description
fileSystemPath	String	The file system location to be accessed through the resource. Min = 1, max = 80.
fileSystemId	String	ID of the file system. Min = 0, max = 256.
evsId	Integer	ID of the virtual file server.
name	String	Name of the resource.
permissions	List	Security permissions that grant or deny access to files and folders.
permissionType	String	Security permission type that grant or deny access to files, such as full control, change, and read.
allowFullControl	Boolean	Permits reading, writing, changing, and deleting of files and folders.
allowChange	Boolean	Permits reading and writing of files and subfolders; allows deletion of the folder.
allowRead	Boolean	Permits viewing and listing of files and folders.
denyFullControll	Boolean	Restricts reading, writing, changing, and deleting of files and folders.
denyChange	Boolean	Restricts reading and writing of files and folders.
denyRead	Boolean	Restricts viewing and listing of files and subfolders.
accessConfiguration	String	The access security for this resource. Min = 1, max = 5957.
maxConcurrentUsers	String	Total number of users accessing the resource at a given time, -1 value for unlimited.
snapshotOptions	String	0: Hides and disallows access to snapshots. 1: Hides snapshots, but still allows access to hidden snapshots. 3: Displays and allows access to snapshots.
cacheOptions	Integer	0: Permits the user to specify individual files required for offline access. 4: Automatic caching is enabled for all files on the entire share. 8: Automatic caching is enabled for all programs on the entire share. 12: No caching of files or folders.
transferToReplicationTarget	String	0: NFS exports are not transferred to recovered file systems. 1: When the target file system is brought online, NFS exports are transferred.

Parameter	Type	Description
		2: NFS exports are transferred to recovered file systems.
userHomeDirectoryMode	Integer	The user home directory mapping mode. 0: Disable the home directory feature for this share. Do not automatically create home directories on this share for users. 1: Create the user home directories based on the home directory information supplied by the Active Directory server for each user. Do not specify a path. 2: Create the user home directory by converting the Windows user name to lower case. 3: Create the user home directory by converting the Windows user name to lower case, then hide the path for other users. 4: Create the user home directory by creating a directory named for the Windows domain name, then converting the Windows user name to lower case and creating a sub-directory by that name. 5: Create the user home directory by converting the UNIX user name to lower case.
userHomeDirectoryPath	String	The user home directory path. Min = 0, max = 127.
followSymbolicLinks	Boolean	Whether or not to enable CIFS clients to follow symbolic links using Microsoft DFS mechanism for this share.
followGlobalSymbolicLinks	Boolean	Whether or not to enable CIFS clients to follow global (absolute) symbolic links using Microsoft DFS mechanism for this share.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
fileSystem	String	URI that includes the file system ID.
evs	String	URI that includes the Virtual File Server ID.

Return codes

Status code	HTTP name	Description
200	OK	Success.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.

Status code	HTTP name	Description
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example code

Request with JSON command:

```
https://172.17.64.108/v1/file/storage-systems/410209/file-
systems/020187A3A0C67BD40000000000000000/shares/
68b47fa0-63f0-11d1-965d-040100020009
```

JSON response:

```
{
    "id": "68b47fa0-63f0-11d1-965d-040100020009",
    "label": "testCreateShare",
    "fileSystemPath": "\pretty3",
    "fileSystemId": "020187A3A0C67BD40000000000000000",
    "evsId": 1,
    "permissions":
    [
        {
            "name": "Everyone",
            "permissionType":
            {
                "allowFullControl": false,
                "allowChange": true,
                "allowRead": true,
                "denyFullControl": false,
                "denyChange": false,
                "denyRead": false
            }
        }
    ],
    "accessConfiguration": "",
    "maxConcurrentUsers": -1,
    "snapshotOptions": "HIDE_AND_DISABLE_ACCESS",
    "cacheOptions": "MANUAL_CACHING_DOCS",
    "transferToReplicationTarget": "UseFSDefault",
    "userHomeDirectoryMode": "Off",
    "userHomeDirectoryPath": "",
    "followSymplicLinks": true,
    "followGlobalSymplicLinks": false,
    "links":
    [
```

```
            {
                "rel": "_self",
                "href": "http://172.17.64.108/v1/file/storage-
systems/410209/file-systems/020187A3A0C67BD40000000000000000/
shares/68b47fa0-63f0-11d1-965d-040100020009"
            },
            {
                "rel": "_filesystem1",
                "href": "http://172.17.64.108/v1/file/storage-
systems/410209/file-systems/020187A3A0C67BD40000000000000000"
            },
            {
                "rel": "_evs",
                "href": "http://172.17.64.108/v1/file/storage-
systems/410209/evs/4ae98a4a-5e1b-11d1-9004-040100020009"
            }
        ]
    }
```


Creating a share

You can create a share.

HTTP request syntax (URI)

`POST https://`*`ipAddress`*`/v1/file/storage-systems/`*`storageSystemId`*`/shares`

Use the ID of the storage system as the *storageSystemId.*

Request structure

The request body structure is shown below:

```
{
   "shareName":"",
   "fileSystemPath":"",
   "fileSystemId":""
}
```

Parameter	Required	Type	Description
shareName	Yes	String	The name of the share. Min = 1, max = 80.
fileSystemPath	Yes	String	The file system path to be accessed through the share. Min = 1, max = 255.
fileSystemId	No	String	ID of the file system.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
```

```
  {
      "text": "",
      "messageCode": "",
      "parameters":
      {
      }
  },
 "user": "",
 "status": "",
 "startDate": ,
 "endDate": ,
 "parentJobId": ,
 "reports":
 [
     {
          "reportMessage":
     {
             "text": "",
             "messageCode": "",
             "parameters":
             {
                 "fileSystemId": ""
             }
         },
         "severity": "",
         "creationDate":
    }
 ],
 "links":
 [
      {
        "rel": "_self",
        "href": "/v1/jobs/"
 }
 ],
 "tags":
 [
 ],
 "isSystem":
}
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values:

Parameter	Type	Description
		• In Progress • Failed • Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
400	Bad request	Required HTTP header was not specified.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
409	Conflict	The specified resource type does not match the existing resource type.

Status code	HTTP name	Description
412	Precondition failed	The server does not meet one of the preconditions that the requester put in the request.
503	Service unavailable	The server is currently unable to receive requests. Retry your request.

Example request

```
{
   "shareName":"NewShare",
   "fileSystemPath":"\ShareFolder",
   "fileSystemId":"020187A3A0C67BD40000000000000000"
}
```

Example request

```
https://172.17.64.122/v1/file/storage-systems/410209/shares
```

Example response

```
{
 "jobId": "a88bd309-fe36-4d68-b3b3-342d1edf20e8",
  "title": {
     "text": "Creating share",
     "messageCode": "CreateShareJobPreTitleMessage",
     "parameters": {}
    },
  "user": "sysadmin",
  "status": "IN_PROGRESS",
  "startDate": 1452129643172,
  "endDate": null,
  "parentJobId": null,
  "reports": [],
  "links": [
      {
          "rel": "_self",
          "href": "/v1/jobs/a88bd309-fe36-4d68-
b3b3-342d1edf20e8"
        }
    ],
   "tags": [],
   "isSystem": false
}
```

Modifying a share

You can change the following parameters: fileSystemPath, accessConfiguration, or permissions.

HTTP request syntax (URI)

```
PATCH https://ipAddress/v1/file/storage-systems/storageSystemId/
file-systems/fileSystemId/shares/shareId
```

Use the ID of the storage system as the *storageSystemd*.

Use the ID of the file system as the *fileSystemd*.

Use the ID of the share as the *shareId*.

Request structure

The request body structure is shown below:

```
{
  "fileSystemPath": "",
  "accessConfiguration" : "",

  "permissions": [
    {
    "groupName": "",
    "permissionType": {
      "allowFullControl": ,
      "allowChange": ,
      "allowRead": ,
      "denyFullControl": ,
      "denyChange": ,
      "denyRead":
    }
   }
  ]
}
```

Parameter	Required	Type	Description
fileSystemPath	Yes	String	The file system path to be accessed through the share. Min = 1, max = 255.
accessConfiguration	No	String	The access security for this share. Min = 1, max = 5957. If the value is specified, it results in all clients being granted access.
permissions	No	String	Security permissions that grant or deny access to files and folders.
groupName	No	String	Permissions associated with this group.
permissionType	No	String	Permission type, such as full control or read-only.

Parameter	Required	Type	Description
allowFullControl	No	Boolean	Permits reading, writing, changing, and deleting of files and folders.
allowChange	No	Boolean	Permits reading and writing of files and folders; allows deletion of the folder.
allowRead	No	Boolean	Permits viewing and listing of files and folders.
denyFullControl	No	Boolean	Restricts reading, writing, changing, and deleting of files and folders.
denyChange	No	Boolean	Restricts reading and writing of files and folders.
denyRead	No	Boolean	Restricts viewing and listing of files and folders.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
  {
      "text": "",
      "messageCode": "",
      "parameters":
      {
      }
  },
 "user": "",
 "status": "",
 "startDate": ,
 "endDate": ,
 "parentJobId": ,
 "reports":
 [
     {
          "reportMessage":
     {
             "text": "",
             "messageCode": "",
             "parameters":
             {
                 "fileSystemId": ""
             }
         },
         "severity": "",
         "creationDate":
    }
 ],
 "links":
 [
      {
        "rel": "_self",
        "href": "/v1/jobs/"
 }
```

```
 ],
 "tags":
 [
 ],
 "isSystem":
}
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	Required HTTP header was not specified.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
{
  "fileSystemPath": "\\homedir3",
  "accessConfiguration" : "",

  "permissions": [
    {
    "groupName": "Everyone",
    "permissionType": {
      "allowFullControl": false,
      "allowChange": true,
      "allowRead": false,
      "denyFullControl": false,
      "denyChange": false,
      "denyRead": false
    }
   }
  ]
}
```

Example request

```
https://172.17.64.122/v1/file/storage-systems/410209/file-
systems/020344B00E161D570000000000000000/shares/a88bd309-
fe36-4d68-b3b3-342d1edf20e8
```

Deleting a share

You can delete a share.

HTTP request syntax (URI)

```
DELETE https://ipAddress/v1/file/storage-systems/storageSystemId/
file-systems/fileSystemId/shares/shareId
```

Use the ID of the storage system as the *storageSystemId*.

Use the ID of the file system as the *fileSystemId*.

Use the ID of the share as the *shareId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
  {
      "text": "",
      "messageCode": "",
      "parameters":
      {
      }
  },
 "user": "",
 "status": "",
 "startDate": ,
 "endDate": ,
 "parentJobId": ,
 "reports":
 [
     {
          "reportMessage":
     {
             "text": "",
             "messageCode": "",
             "parameters":
             {
                 "fileSystemId": ""
             }
         },
         "severity": "",
         "creationDate":
    }
 ],
 "links":
 [
      {
        "rel": "_self",
        "href": "/v1/jobs/"
 }
 ],
 "tags":
```

```
 [
 ],
 "isSystem":
}
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
200	OK	Success.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.

Status code	HTTP name	Description
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example code

Request with JSON command:

```
https://172.17.64.108/v1/file/storage-systems/410209/file-
systems/020187A3A0C67BD40000000000000000/shares/
e647c72a-628c-11d1-95ff-040100020009
```

JSON response:

```
    {
        "jobId": "f2dfb8e9-3192-40e6-a0f8-ce8fe90eb4c4",
        "title":
        {
            "text": "Deleting share using following information
- shareId e647c72a-628c-11d1-95ff-040100020009 evsid 1",
            "messageCode": "DeleteSharePreStepMessage",
            "parameters":
            {
            }
        },
        "user": "sysadmin",
        "status": "IN_PROGRESS",
        "startDate": 1455153845049,
        "endDate": null,
        "parentJobId": null,
        "reports":
        [
        ],
        "links":
        [
            {
                "rel": "_self",
                "href": "/v1/jobs/f2dfb8e9-3192-40e6-a0f8-
ce8fe90eb4c4"
            }
        ],
        "tags":
        [
        ],
        "isSystem": false
    }
```

Export management resources

Request	Method	URI	Role
Listing all exports in a storage system on page 308	GET	/v1/file/storage-systems/*storageSystemId*/exports	Storage administrator System administrator Security administrator
Listing exports in a file system on page 311	GET	/v1/file/storage-systems/*storageSystemId*/file-systems/*fileSystemId*/exports	Storage administrator System administrator Security administrator
Getting an export on page 314	GET	/v1/file/storage-systems/*storageSystemId*/file-systems/*fileSystemId*/exports/*exportId*	Storage administrator System administrator Security administrator
Creating an export on page 316	POST	/v1/file/storage-systems/*storageSystemId*/exports	Storage administrator
Modifying an export on page 320	PATCH	/v1/file/storage-systems/*storageSystemId*/exports/*exportId*	Storage administrator
Deleting an export on page 324	DELETE	/v1/file/storage-systems/*storageSystemId*/file-systems/*fileSystemId*/exports/*exportId*	Storage administrator

Listing all exports in a storage system

You can display a list of exports in the specified storage system.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/file/storage-systems/storageSystemId/
exports
```

Use the ID of the storage system as the *storageSystemId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
    "exports":
    [
        {
            "id": "",
            "name": "",
            "fileSystemPath": "",
            "fileSystemId": "",
            "evsId": 1,
            "accessConfiguration": "",
            "snapshotOptions": "",
            "transferToReplicationTarget": "",
            "links":
            [
                {
                    "rel": "_self",
                    "href": ""
                },
                {
                    "rel": "_fileSystem",
                    "href": ""
                }
                                                                        {
                    "rel": "_vfs",
                    "href": ""
                }
            ]
        }
    ]
}
```

Parameter	Type	Description
id	Integer	ID of the export.
name	String	Name of the resource.
fileSystemPath	String	The file system location to be accessed through the resource. Min = 1, max = 80.
fileSystemId	String	ID of the file system. Min = 0, max = 256.
evsId	Integer	ID of the virtual file server.
accessConfiguration	String	The access security for this resource. Min = 1, max = 5957.
snapshotOptions	String	0: Hides and disallows access to snapshots. 1: Hides snapshots, but still allows access to hidden snapshots. 3: Displays and allows access to snapshots.
transferToReplicationTarget	String	0: NFS exports are not transferred to recovered file systems.

Parameter	Type	Description
		1: When the target file system is brought online, NFS exports are transferred. 2: NFS exports are transferred to recovered file systems.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
fileSystem	String	URI that includes the file system ID.
vfs	String	URI that includes the virtual file server ID.

Return codes

Status code	HTTP name	Description
200	OK	Success.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example code

Request with JSON command:

```
https://172.17.64.108/v1/file/storage-systems/410209/exports
```

JSON response:

```
{
    "exports":
    [
        {
            "id": "9371b28a-6323-11d1-9605-040100020009",
            "name": "/Export-EL1",
            "fileSystemPath": "/HSA",
            "fileSystemId": "02017A80F9A478B70000000000000000",
            "evsId": 1,
            "accessConfiguration": "",
            "snapshotOptions": "HIDE_AND_DISABLE_ACCESS",
            "transferToReplicationTarget": "UseFSDefault",
```

```
            "links":
            [
                {
                    "rel": "_self",
                    "href": "http://172.17.64.108/v1/file/
storage-systems/410209/exports"
                },
                {
                    "rel": "_filesystem",
                    "href": "http://172.17.64.108/v1/file/
storage-systems/410209/02017A80F9A478B70000000000000000"
                }

{
                    "rel": "_vfs",
                    "href": "http://172.17.64.109/v1/file/
storage-systems/410500/vfs/55e9ac86-5cf4-11d1-9005-040100050000"
                }
            ]
        }
    ]
}
```

Listing exports in a file system

You can display a list of exports in the specified file system.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/file/storage-systems/storageSystemId/
file-systems/fileSystemId/exports
```

Use the ID of the storage system as the *storageSystemId*.

Use the ID of the file system as the *fileSystemId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
    "exports":
    [
        {
            "id": "",
            "name": "",
            "fileSystemPath": "",
            "fileSystemId": "",
            "evsId": 1,
            "accessConfiguration": "",
            "snapshotOptions": "",
            "transferToReplicationTarget": "",
```

```
            "links":
            [
                {
                    "rel": "_self",
                    "href": ""
                },
                {
                    "rel": "_fileSystem",
                    "href": ""
                }
                                                                        {
                    "rel": "_vfs",
                    "href": ""
                }
                                                                      {
                    "rel": "_vfs",
                    "href": ""
                }
            ]
        }
    ]
}
```

Parameter	Type	Description
id	Integer	ID of the export.
name	String	Name of the resource.
fileSystemPath	String	The file system location to be accessed through the resource. Min = 1, max = 80.
fileSystemId	String	ID of the file system. Min = 0, max = 256.
evsId	Integer	ID of the virtual file server.
accessConfiguration	String	The access security for this resource. Min = 1, max = 5957.
snapshotOptions	String	0: Hides and disallows access to snapshots. 1: Hides snapshots, but still allows access to hidden snapshots. 3: Displays and allows access to snapshots.
transferToReplicationTarget	String	0: NFS exports are not transferred to recovered file systems. 1: When the target file system is brought online, NFS exports are transferred. 2: NFS exports are transferred to recovered file systems.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
fileSystem	String	URI that includes the file system ID.
vfs	String	URI that includes the virtual file server ID.

Return codes

Status code	HTTP name	Description
200	OK	Success.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example code

Request with JSON command:

```
https://172.17.64.108/v1/file/storage-systems/410209/file-
systems/020187A3A0C67BD40000000000000000/exports
```

JSON response:


```
{
    "exports":
    [
        {
            "id": "9371b28a-6323-11d1-9605-040100020009",
            "name": "/Export-EL1",
            "fileSystemPath": "/HSA",
            "fileSystemId": "02017A80F9A478B70000000000000000",
            "evsId": 1,
            "accessConfiguration": "",
            "snapshotOptions": "HIDE_AND_DISABLE_ACCESS",
            "transferToReplicationTarget": "UseFSDefault",
            "links":
            [
                {
                    "rel": "_self",
                    "href": "http://172.17.64.108/v1/file/
storage-systems/410209/file-systems/
020187A3A0C67BD40000000000000000/exports"
                },
                {
                    "rel": "_filesystem",
                    "href": "http://172.17.64.108/v1/file/
storage-systems/410209/file-systems/
02017A80F9A478B70000000000000000"
                }
```

```
            ]
        }
    ]
}
```

Getting an export

You can get information about an export in the specified file system.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/file/storage-systems/storageSystemId/
file-systems/fileSystemId/exports/exportId
```

Use the ID of the storage system as the *storageSystemId*.

Use the ID of the file system as the *fileSystemId*.

Use the ID of the export as the *exportId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
    "id": "",
    "name": "",
    "fileSystemPath": "",
    "fileSystemId": "",
    "evsId": ,
    "accessConfiguration": "",
    "snapshotOptions": "",
    "transferToReplicationTarget": "",
    "links":
    [
        {
            "rel": "_self",
            "href": ""
        },
        {
            "rel": "_filesystem",
            "href": ""
        },
        {
            "rel": "_vfs",
            "href": ""
        }
    ]
}
```

Parameter	Type	Description
id	String	ID of the share.
name	String	Name of the resource.
fileSystemPath	String	The file system location to be accessed through the resource. Min = 1, max = 80.
fileSystemId	String	ID of the file system. Min = 0, max = 256.
evsId	Integer	ID of the virtual file server.
accessConfiguration	String	The access security for this resource. Min = 1, max = 5957.
snapshotOptions	String	0: Hides and disallows access to snapshots. 1: Hides snapshots, but still allows access to hidden snapshots. 3: Displays and allows access to snapshots.
transferToReplicationTarget	String	0: NFS exports are not transferred to recovered file systems. 1: When the target file system is brought online, NFS exports are transferred. 2: NFS exports are transferred to recovered file systems.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
fileSystem	String	URI that includes the file system ID.
evs	String	URI that includes the Virtual File Server ID.

Return codes

Status code	HTTP name	Description
200	OK	Success.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example code

Request with JSON command:

```
https://172.17.64.108/v1/file/storage-systems/410209/file-
systems/020187A3A0C67BD40000000000000000/exports/
e647c72a-628c-11d1-95ff-040100020009
```

JSON response:


```
    {
        "id": "c5d2b498-63f7-11d1-9660-040100020009",
        "name": "/testCreateExport",
        "fileSystemPath": "/modifiedPath",
        "fileSystemId": "020187A3A0C67BD40000000000000000",
        "evsId": 1,
        "accessConfiguration": "192.2",
        "snapshotOptions": "HIDE_AND_DISABLE_ACCESS",
        "transferToReplicationTarget": "UseFSDefault",
        "links":
        [
            {
                "rel": "_self",
                "href": "http://172.17.64.108/v1/file/storage-
systems/410209/file-systems/020187A3A0C67BD400000/exports/
c5d2b498-63f7-11d1-9660-040100020009"
            },
            {
                "rel": "_filesystem",
                "href": "http://172.17.64.108/v1/file/storage-
systems/410209/file-systems/020187A3A0C67BD40000000000000000"
            },
            {
                "rel": "_vfs",
                "href": "http://172.17.64.108/v1/file/storage-
systems/410209/evs/4ae98a4a-5e1b-11d1-9004-040100020009"
            }
        ]
    }
```


Creating an export

You can create an export of a file system. An export is a shared resource in the Linux OS and is used for sharing file systems.

HTTP request syntax (URI)

```
POST https://ipAddress/v1/file/storage-systems/storageSystemId/
exports
```

Use the ID of the storage system as the *storageSystemId*.

Request structure

The request body structure is shown below:

```
{
   "exportName":"",
   "fileSystemPath":"",
   "fileSystemId":""
}
```

Parameter	Required	Type	Description
exportName	Yes	String	The name of the export. Min = 1, max = 80.
fileSystemPath	Yes	String	The file system path to be accessed through the share. Min = 1, max = 255.
fileSystemId	No	String	ID of the file system.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
  {
      "text": "",
      "messageCode": "",
      "parameters":
      {
      }
  },
 "user": "",
 "status": "",
 "startDate": ,
 "endDate": ,
 "parentJobId": ,
 "reports":
 [
     {
          "reportMessage":
     {
             "text": "",
             "messageCode": "",
             "parameters":
             {
                 "fileSystemId": ""
             }
         },
         "severity": "",
         "creationDate":
    }
 ],
 "links":
 [
      {
```

```
        "rel": "_self",
        "href": "/v1/jobs/"
 }
 ],
 "tags":
 [
 ],
 "isSystem":
}
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
400	Bad request	Required HTTP header was not specified.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
409	Conflict	The specified resource type does not match the existing resource type.
412	Precondition failed	The server does not meet one of the preconditions that the requester put in the request.
503	Service unavailable	The server is currently unable to receive requests. Retry your request.

Example request

```
{
   "exportName":"NewExport",
   "fileSystemPath":"\ExportFolder",
   "fileSystemId":"020187A3A0C67BD40000000000000000"
}
```

Example request

```
https://172.17.64.122/v1/file/storage-systems/410209/exports
```

Example response

```
{
 "jobId": "a88bd309-fe36-4d68-b3b3-342d1edf20e8",
  "title": {
     "text": "Creating Export",
```

```
      "messageCode": "CreateExportSystemJobPreTitleMessage",
      "parameters": {}
    },
  "user": "sysadmin",
  "status": "IN_PROGRESS",
  "startDate": 1452129643172,
  "endDate": null,
  "parentJobId": null,
  "reports": [],
  "links": [
      {
          "rel": "_self",
          "href": "/v1/jobs/a88bd309-fe36-4d68-
b3b3-342d1edf20e8"
        }
    ],
   "tags": [],
   "isSystem": false
}
```

Modifying an export

You can modify an export and change the following parameters: fileSystemPath and accessConfiguration.

HTTP request syntax (URI)

`PATCH https://`*`ipAddress`*`/v1/file/storage-systems/`*`storageSystemId`*`/file-systems/`*`fileSystemId`*`/exports/`*`exportId`*

Use the ID of the storage system as the *storageSystemId*.

Use the ID of the file system as the *fileSystemId*.

Use the ID of the export as the *exportId*.

Request structure

The request body structure is shown below:

```
{
   "fileSystemPath":"",
   "accessConfiguration":""
}
```

Parameter	Required	Type	Description
fileSystemPath	Yes	String	The file system path to be accessed through the share. Min = 1, max = 255.
accessConfiguration	No	String	The access security for this share. Min = 1, max = 5957. If the value is specified, it results in all clients being granted access.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
  {
      "text": "",
      "messageCode": "",
      "parameters":
      {
      }
  },
 "user": "",
 "status": "",
 "startDate": ,
 "endDate": ,
 "parentJobId": ,
 "reports":
 [
     {
          "reportMessage":
     {
             "text": "",
             "messageCode": "",
             "parameters":
             {
                 "fileSystemId": ""
             }
         },
         "severity": "",
         "creationDate":
    }
 ],
 "links":
 [
      {
        "rel": "_self",
        "href": "/v1/jobs/"
 }
 ],
 "tags":
 [
 ],
 "isSystem":
}
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.

Parameter	Type	Description
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
200	OK	Success.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.

Status code	HTTP name	Description
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
{
   "fileSystemPath":"\ExportFolder",
   "accessConfiguration":""
}
```

Example request

```
https://172.17.64.122/v1/file/storage-systems/410209/file-
systems/020131B76DBF4DA60000000000000000/exports/
e647c72a-628c-11d1-95ff-040100020009
```

Example response

```
{
 "jobId": "a88bd309-fe36-4d68-b3b3-342d1edf20e8",
  "title": {
     "text": "Modifying Export",
     "messageCode": "ModifyExportSystemJobPreTitleMessage",
     "parameters": {}
    },
  "user": "sysadmin",
  "status": "IN_PROGRESS",
  "startDate": 1452129643172,
  "endDate": null,
  "parentJobId": null,
  "reports": [],
  "links": [
      {
          "rel": "_self",
          "href": "/v1/jobs/a88bd309-fe36-4d68-
b3b3-342d1edf20e8"
        }
    ],
   "tags": [],
   "isSystem": false
}
```

Deleting an export

You can delete an export.

HTTP request syntax (URI)

`DELETE https://`*`ipAddress`*`/v1/file/storage-systems/`*`storageSystemId`*`/file-systems/`*`fileSystemId`*`/exports/`*`exportId`*

Use the ID of the storage system as the *storageSystemId*.

Use the ID of the file system as the *fileSystemId*.

Use the ID of the export as the *exportId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
  {
      "text": "",
      "messageCode": "",
      "parameters":
      {
      }
  },
 "user": "",
 "status": "",
 "startDate": ,
 "endDate": ,
 "parentJobId": ,
 "reports":
 [
     {
          "reportMessage":
     {
             "text": "",
             "messageCode": "",
             "parameters":
             {
                 "fileSystemId": ""
             }
         },
         "severity": "",
         "creationDate":
    }
 ],
 "links":
 [
```

```
      {
        "rel": "_self",
        "href": "/v1/jobs/"
 }
 ],
 "tags":
 [
 ],
 "isSystem":
}
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Return codes

Status code	HTTP name	Description
200	OK	Success.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.122/v1/file/storage-systems/410209/file-
systems/020187A3A0C67BD40000000000000000/exports/
e647c72a-628c-11d1-95ff-040100020009
```

Example response

```
{
 "jobId": "a88bd309-fe36-4d68-b3b3-342d1edf20e8",
  "title": {
     "text": "Deleting Export with the following
information...",
     "messageCode": "DeleteExportSystemJobPreTitleMessage",
     "parameters": {}
    },
  "user": "sysadmin",
  "status": "IN_PROGRESS",
  "startDate": 1452129643172,
  "endDate": null,
  "parentJobId": null,
  "reports": [],
  "links": [
      {
          "rel": "_self",
          "href": "/v1/jobs/a88bd309-fe36-4d68-
b3b3-342d1edf20e8"
        }
    ],
   "tags": [],
```

```
    "isSystem": false
}
```

4

Server management resources

This module describes the server management operations.

Request	Method	URI	Role
Listing servers on page 331	GET	/v1/compute/servers	Storage administrator System administrator Security administrator
Getting a server on page 334	GET	/v1/compute/servers/*serverId*	Storage administrator System administrator Security administrator
Adding a server on page 337	POST	/v1/compute/servers	System administrator
Updating a server on page 340	POST	/v1/compute/servers/*serverId*	System administrator
Deleting a server on page 343	DELETE	/v1/compute/servers/*serverId*	System administrator
Adding world wide port names on page 345	POST	/v1/compute/servers/*serverId*/add-wpn	System administrator
Removing world wide port names on page 348	POST	/v1/compute/servers/*serverId*/remove-wwpn	System administrator
Listing attached volumes on page 352	GET	/v1/compute/servers/attachedvolumes/?q=serverId:*serverId* AND storageSystemId:*storageSystemId*	Storage administrator System administrator Security administrator

- Listing servers

- Getting a server
- Getting servers summary
- Adding a server
- Updating a server
- Deleting a server
- Adding world wide port names
- Removing world wide port names
- Updating WWPNs
- Listing attached volumes

Listing servers

You can display a list of servers.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/compute/servers
```

Request structure

Not applicable.

Response structure

```
{
    "resources":
    [
        {
            "serverId": ,
            "serverName": "",
            "description": "",
            "ipAddress": "",
            "wwpns":
            [
                ""
            ],
            "osType": "",
            "attachedVolumeCount": ,
            "dataProtectionSummary":
            {
                "replicationType":
                [
                ],
                "protection": "",
                "hasFailures":
            },

            "dpStatus": ""
        }
                        ...
                ],
    "total":
    "nextToken":
}
```

Parameter	Type	Description
dpStatus	String	Data protection status on the server. If data protection succeeded, the status is success. If data protection failed for any volume, the status is failure.
description	String	Description of the resource.

Parameter	Type	Description
ipAddress	String	IP address of the resource.
wwpns	List	List of World Wide Port Numbers formatted as a 16-digit hexadecimal number.
osType	String	List of supported operating systems on the server.
attachedVolumeCount	Integer	Total number of the server attached volumes.
dataProtectionSummary	List	List of the data protection attributes.
replicationType	String	Volume replication type. Valid values: • SNAP_ON_SNAP: Snapshot pair that can be cascaded. • SNAP_CLONE: A pair relationship in which the secondary volume of the pair will be a real volume of the primary volume. • CLONE • SNAP: Snapshot
protection	String	Data protection type. Valid values: PROTECTED, UNPROTECTED, or PARTIAL. • if there are no volumes attached to a server or all of the attached volumes are unprotected, the status is UNPROTECTED. • If all the volumes that are attached to a server are PRIMARY volumes, the status is PROTECTED. • If all the volumes that are attached to a server are SECONDARY volumes, the status is PARTIAL. • If its mix of primary, secondary, and unprotected volumes, the status is PARTIAL.
hasFailures	Boolean	Whether or not the volume has replication failures.
serverName	String	Name of the server.
serverId	Integer	ID of the server.
total	Long	Total number of resources.
nextToken	String	The API will return up to 100 resources with one call. This parameter is used for pagination when there are more than 100 resources in the system. At the bottom of the returned response is a link to another GET call you can make to retrieve the next page of resources. Copy the href link that includes the next token and paste it in your Storage Advisor browser.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
http://172.17.64.115/v1/compute/servers
```

Example response


```
{
    "resources":
    [
        {
            "serverId": 1,
            "serverName": "ESX-6427",
            "description": "ESX-6427",
            "ipAddress": "172.17.64.27",
            "wwpns":
            [
                "50000870005368c0"
            ],
            "osType": "VMWARE_EX",
            "attachedVolumeCount": 0,
            "dataProtectionSummary":
            {
                "replicationType":
                [
                ],
                "protection": "UNPROTECTED",
                "hasFailures": false
            },

            "dpStatus": "Success"
        },
                                    ...
                                ]
                "total": 0,
      "nextToken": null
    }
  ]
}
```

Getting a server

You can display details on a specific server.

HTTP request syntax (URI)

`GET https://ipAddress/v1/compute/servers/serverId`

User the ID of the server as the *serverId*.

Request structure

Not applicable.

Response structure

```
{
                "serverId": ,
                "serverName": "",
                "description": "",
                "ipAddress": "",
                "wwpns":
                [
                    ""
                ],
                "osType": "",
                "attachedVolumeCount": ,
                "dataProtectionSummary":
                {
                    "replicationType":
                    [
                    ],
                    "protection": "",
                    "hasFailures":
                },
                "dpStatus": "",

            }
```

Parameter	Type	Description
dpStatus	String	Data protection status on the server. If data protection succeeded, the status is success. If data protection failed for any volume, the status is failure.
description	String	Brief description of the server.
ipAddress	String	IP address of the resource.
wwpns	List	List of World Wide Port Numbers formatted as a 16-digit hexadecimal number.
osType	String	List of supported operating systems on the server.

Parameter	Type	Description
attachedVolumeCount	Integer	Total number of the server attached volumes.
dataProtectionSummary	Object	List of the data protection attributes of the volume.
replicationType	String	Volume replication type. Valid values: • SNAP_ON_SNAP: Snapshot pair that can be cascaded. • SNAP_CLONE: A pair relationship in which the secondary volume of the pair will be a real volume of the primary volume. • CLONE • SNAP: Snapshot
protection	String	Data protection type. Valid values: P-VOL, S-VOL, or UNPROTECTED.
hasFailures	Boolean	Whether or not the volume has replication failures.
serverName	String	Name of the server.
serverId	Integer	ID of the server.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
http://172.17.64.115/v1/compute/servers/2
```

Example response

```
{
                "serverId": 2,
                "serverName": "ESX-6425",
                "description": "ESX-6425",
                "ipAddress": "172.17.64.25",
                "wwpns":
                [
                    "5000087000536424"
```

```
                    ],
                    "osType": "VMWARE_EX",
                    "attachedVolumeCount": 0,
                    "dataProtectionSummary":
                    {
                        "replicationType":
                        [
                        ],
                        "protection": "UNPROTECTED",
                        "hasFailures": false
                    },
                    "dpStatus": "Success",

 }
```

Getting servers summary

You can display a list of servers by operating system type.

HTTP request syntax (URI)

`GET https://ipAddress/v1/compute/servers/summary`

Request structure

Not applicable.

Response structure

```
{
  "osTypeCount":
    {
     "WIN":
    },
  "totalHost":
}
```

Parameter	Type	Description
osTypeCount	List	List of supported operating systems on the server.
totalHost	Integer	Total number of host operating systems.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.

Status code	HTTP name	Description
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
http://172.17.64.111/v1/compute/servers/summary
```

Example response

```
{
  "osTypeCount":
    {
     "WIN": 1
    },
        "totalHost": 1
}
```

Adding a server

You can add a server with information about the server name, IP address, short description, World Wide Port Name (WWPN), and the supported OS types.

HTTP request syntax (URI)

```
POST https://ipAddress/v1/compute/servers
```

Request Structure

The request body structure is shown below:

```
{
  "servers": [
    {
      "serverName": "",
      "ipAddress": "",
      "osType": "",
      "wwpns": [
        ""
      ],
      "description": ""
    }
  ]
}
```

Parameter	Required	Type	Description
serverName	Yes	String	Name of the server. Enter up to 256 alphanumeric characters. The only special characters that are supported are the hyphen "-" and underscore " _" .
ipAddress	No	String	IP address of the resource.
osType	Yes	String	List of supported OS.
wwpns	Yes	List	List of World Wide Port Numbers formatted as a 16 digit hexadecimal number.
description	No	String	Brief description of the server, up to 128 characters.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.

Parameter	Type	Description
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
http://172.17.64.115/v1/compute/servers
```

Example request

```
{
  "servers": [
    {
      "serverName": "Windows Server",
      "description": "WINDOWS HOST",
      "ipAddress": "10.20.90.243",
      "wwpns": [
        "100000053326f721"
      ],
      "osType": "WIN_EX",
  ]
}
```

Updating a server

You can update the server name, IP address, short description, or supported OS types.

HTTP request syntax (URI)

`POST https://`*`ipAddress`*`/v1/compute/servers/`*`serverId`*

Use the ID of the server as the *serverId*.

Request structure

The request body structure is shown below:

```
{
  "serverName": "",
  "ipAddress": "",
  "osType": "",
  "description": ""
}
```

Parameter	Required	Type	Description
serverName	Yes	String	Name of the server. Enter up to 256 alphanumeric characters. The only special characters that are supported are the hyphen "-" and underscore " _" .
ipAddress	No	String	IP address of the resource.
osType	Yes	String	List of supported OS.

Parameter	Required	Type	Description
description	No	String	Brief description of the server, up to 128 characters.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.

Parameter	Type	Description
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
{
"serverName": "Win-MD",
"ipAddress": "172.17.91.21",
"osType": "Win_EX",
"description": "Updating server info"
}
```

Deleting a server

You can delete a server if there are no volumes attached to the server. You should verify that no volumes are attached to the server before you delete the server.

HTTP request syntax (URI)

`DELETE https://`*`ipAddress`*`/v1/compute/servers/`*`serverId`*

Use the ID of the server as the *serverId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
    "jobId": "",
    "title":
    {
        "text": "",
        "messageCode": "",
        "parameters":
        {
        }
    },
    "user": "",
    "status": "",
    "startDate": ,
    "endDate": ,
    "parentJobId": ,
    "reports":
    [
    ],
    "links":
    [
        {
            "rel": "",
            "href": ""
        }
    ],
    "tags":
    [
    ],
    "isSystem":
}
```

Parameter	Type	Description
jobId	String	The ID of the job that is created to carry out the request.
title	Object	The title of the job in progress.
text	String	Text of the message.
messageCode	String	ID of the message. This maps to the message description.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	Name of the user who started the job.
status	String	Job status. Valid values: • In Progress • Failed • Success • Success With Errors
startDate	Integer	The date and time this job started. Format is the Unix epoch.
endDate	Integer	Date and time when this job ended. If the job is still in progress, this parameter does not return a value. Format is the Unix epoch.
parentJobId	Integer	The ID of the job that spawned this job. If not applicable, the value null is returned.
reports	List	Messages associated with this job.
links	List	Displays related resources.
self	String	URI that includes the resource ID.
tags	List	List of user-defined identifiers. Each identifier (tag) must be a minimum of three characters in length.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to true. If a user generates a job, the system sets to false.

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example response


```
    {
        "jobId": "104f169c-89f0-4f3c-a188-242593005a86",
        "title":
        {
            "text": "Delete server",
            "messageCode": "DeleteServerJobTitleMessage",
            "parameters":
            {
            }
        },
        "user": "sysadmin",
        "status": "IN_PROGRESS",
        "startDate": 1456970658084,
        "endDate": null,
        "parentJobId": null,
        "reports":
        [
        ],
        "links":
        [
            {
                "rel": "_self",
                "href": "/v1/jobs/104f169c-89f0-4f3c-
a188-242593005a86"
            }
        ],
        "tags":
        [
        ],
        "isSystem": false
    }
```


Adding world wide port names

You can add world wide port names to a storage system.

HTTP request syntax (URI)

Note: This API will be usable in Storage Advisor v2.1, but will be deprecated in the following version.

`POST https://`*`ipAddress`*`/v1/compute/servers/`*`serverId`*`/add-wwpn`

Use the ID of the server as the *serverId*.

Request structure

The request body structure is shown below:

```
{
  "wwpns": [
    ""
  ]
}
```

Parameter	Required	Type	Description
wwpns	Yes	List	List of World Wide Port Numbers formatted as a 16 digit hexadecimal number.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.

Parameter	Type	Description
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
{
    "wwpns": [
            "1000001234567890",
            "394AC9283EE92A22"
    ]
}
```

Removing world wide port names

You can remove a list of world wide port numbers from a server if there are no volumes attached to the server. Verify that there are no volumes attached to the server via the WWN before you remove the WWN.

Note: This API will be usable in Storage Advisor v2.1, but will be deprecated in the following version.

HTTP request syntax (URI)

Note:

`POST https://`*`ipAddress`*`/v1/compute/servers/`*`serverId`*`/remove-wwpn`

Use the ID of the server as the *serverId*.

Request structure

The request body structure is shown below:

```
{
  "wwpns": [
    ""
  ]
}
```

Parameter	Required	Type	Description
wwpns	Yes	List	List of World Wide Port Numbers formatted as a 16 digit hexadecimal number.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
```

```
      "messageCode": "",
      "parameters":
       {
       }
    },
    "user": "",
    "status": "",
    "startDate": ,
    "endDate": ,
    "parentJobId": ,
    "reports":
    [
    ],
    "links":
    [
       {
          "rel": "_self",
          "href": "/v1/jobs/jobId"
       }
    ],
    "tags":
    [
    ],
    "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.

Parameter	Type	Description
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Updating WWPNs

HTTP request syntax (URI)

`POST https://`*`ipAddress`*`/v1/compute/servers/`*`serverId`*`/update-wwpns`

Parameter	Required	Type	Description
serverId	Yes	Integer	ID of the server.

Request structure

```
{
  "updateAttachedVolumes" : ,
  "updateZones" : ,
  "updates" : [
      {
        "currentValue": "",
        "newValue":
      }
   ],
}
```

Parameter	Required	Type	Description
updateAttachedVolumes	Yes	Boolean	Use the value "true" to update the WWN
updateZones	Yes	Boolean	Use the value "true" to update the WWN
currentValue	Yes	String	The current value of the WWN.
newValue	Yes	String	The desired value of the WWN. Note that the new WWN must not be in use.

Response structure

```
{
  "description" : "",
  "ip" : "",
  "wwns" : ["", ""]
}
```

Parameter	Type	Description
description	String	Name of the target server
ip	String	IP address of the target server
wwns	List	List of World Wide Names.

Return codes

Status code	HTTP name	Description
400	Bad request	Required HTTP header was not specified.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
{
  "updateAttachedVolumes" : true,
  "updateZones" : true,
  "updates" : [
      {
        "currentValue": "wwn1",
        "newValue": null
      },
      {
        "currentValue": "wwn2",
```

```
        "newValue": "wwn5"
      },
      {
        "currentValue": "wwn3",
        "newValue": "wwn6"
      },
      {
        "currentValue": "wwn4",
        "newValue": null
      },
      {
        "currentValue": null,
        "newValue": "wwn7"
      },
   ],
}
```

Example response

```
{
  "description" : "server1",
  "ip" : "10.20.30.14",
  "wwns" : ["wwn5", "wwn6", "wwn7"]
}
```

Listing attached volumes

You can display a list of all attached volumes from a specific storage system and the path to the attached volume.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/compute/servers/attached-volumes/?
q=serverId:serverId AND storageSystemId:storageSystemId
```

Use the ID of the server as the *serverId*.

Use the ID of the storage system as the *storageSystemId*.

Response structure

```
{
    "resources": [
        {
            "volumeId": ,
            "storageSystemId": "",
            "poolId": "",
            "label": "",
            "size":,
            "usedCapacity": ,
            "availableCapacity": ,
            "utilization": ,
            "status": "",
```

```
                "type": "",
                "dkcDataSavingType": "",
                "dataProtectionSummary": {
                    "replicationType": [
                        ""
                    ],
                    "volumeType": [
                        ""
                    ],
                    "replicationGroupIdMap": {
                        "": ""
                    },
                    "hasFailures": ,
                    "secondaryVolumeCount": ,
                    "secondaryVolumeFailures":
                },
                "serverId": ,
                "paths": [
                    {
                        "storagePortId": "",
                        "storageSystemId": "",
                        "lun": ,
                        "name": "",
                        "hostMode": "",
                        "wwns": [
                            ""
                        ],
                        "hostModeOptions": []
                    },
                ]
            }
        ],
        "total": ,
        "nextToken":
}
```

Parameter	Type	Description
volumeId	Long	ID number of the volume within the parent storage system.
storageSystemId	String	ID of the storage system.
poolId	String	ID of the pool from which the resource is allocated.
label	String	Name of the volume.
size	Long	Size of the volume, in bytes.
usedCapacity	Long	Sum of used capacity per volume resource, in bytes.
availableCapacity	Long	Unused capacity of the resource, in bytes.
utilization	Integer	The percentage usage of the volume capacity. The utilization percentage= (usedCapacity/size) *100.

Parameter	Type	Description
status	String	Volume status: Valid values: NORMAL, BLOCKED, BUSY, UNKNOWN, or NONE.
type	String	Type of pool from which the volume is allocated. Valid values: HDP, HDT, or HTI.
dkcDataSavingType	String	Type of controller-based capacity saving. Valid values are COMPRESSION, DEDUPLICATION_AND_COMPRESSION, and NONE.
dataProtectionSummary	Object	List of the data protection attributes of the volume.
replicationType	String	Volume replication type. Valid values: • SNAP_ON_SNAP: Snapshot pair that can be cascaded. • SNAP_CLONE: A pair relationship in which the secondary volume of the pair will be a real volume of the primary volume. • CLONE • SNAP: Snapshot
volumeType	Set	Type of volume in the replication. Valid values: P-VOL, S-VOL, or UNPROTECTED.
replicationGroupIdMap	Object	Replication group ID map. Consisting of the replication group ID and the replication group name for each of the replication group the volume belongs to.
hasFailures	Boolean	Whether or not the volume has replication failures.
secondaryVolumeCount	Integer	Count of secondary volume pairs protecting the primary volume.
secondaryVolumeFailures	Integer	Count of failed volume pairs where this volume is a S-VOL.
serverId	Integer	ID of the server.
paths	Object	Path that is being used to attach the volume to the server.
storagePortId	String	ID of the storage port where the volume is attached to the host.
storageSystemId	String	ID of the storage system.
lun	Integer	LUN identifier for the volume where it connects to the port.
name	String	Name of the path from the storage port to the host port.
hostMode	String	Host mode set for the volume.
wwns	List	List of World Wide Names.
hostModeOptions	List of Integers	Host mode options for the volume.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.115/v1/compute/servers/attached-volumes/?
q=serverId:2 AND storageSystemId:4100313
```

Example response


```
{
    "resources": [
        {
            "volumeId": 25,
            "storageSystemId": "410031",
            "poolId": "5",
            "label": "fibre-port-test-410031",
            "size": 10737418240,
            "usedCapacity": 0,
            "availableCapacity": 10737418240,
            "utilization": 0,
            "status": "NORMAL",
            "type": "HDT",
            "dkcDataSavingType": "NONE",
            "dataProtectionSummary": {
                "replicationType": [
                    "CLONE"
                ],
                "volumeType": [
                    "P-VOL"
                ],
                "replicationGroupIdMap": {
                    "1": "JS_CL-25"
                },
                "hasFailures": false,
                "secondaryVolumeCount": 2,
                "secondaryVolumeFailures": 0
            },
            "serverId": 2,
            "paths": [
                {
                    "storagePortId": "CL5-C",
```

```
                    "storageSystemId": "410031",
                    "lun": 1,
                    "name": "HID_CL5-
C_a6598749-07e4-47a2-8180-696547432783",
                    "hostMode": "VMWARE_EX",
                    "wwns": [
                        "5000087000536424"
                    ],
                    "hostModeOptions": []
                },
            ]
        }
    ],
    "total": 1,
    "nextToken": null
}
```

5

Fabric switch management resources

This module describes the fabric switch management operations.

Request	Method	URI	Role
List all fabric switches on page 358	GET	/v1/san-fabrics	Storage administrator System administrator Security administrator
List a fabric switch on page 359	GET	/v1/san-fabrics/*sanFabricId*	Storage administrator System administrator Security administrator
Create a fabric switch on page 361	POST	/v1/san-fabrics	System administrator
Edit a fabric switch on page 363	POST	/v1/san-fabrics/*sanFabricId*	System administrator
Delete a fabric switch on page 366	DELETE	/v1/san-fabrics/*sanFabricId*	System administrator

- List all fabric switches
- List a fabric switch
- Create a fabric switch
- Edit a fabric switch
- Delete a fabric switch

List all fabric switches

You can display a list of fabric switches.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/san-fabrics
```

Request structure

Not applicable.

Response structure

```
{
    "resources":
    [
        {
            "sanFabricId": "",
            "switchType": "",
            "virtualFabricId": ,
            "principalSwitchAddress": "",
            "principalSwitchUsername": "",
            "principalSwitchPortNumber":
        },
...
    ]
    "total": ,
    "nextToken":
}
```

Attribute	Type	Description
sanFabricId	String	Fabric switch identifier.
switchType	String	Type of switch, such as CISCO or BROCADE.
virtualFabricId	Integer	Virtual fabric identifier. For Cisco switches, this is the user-defined virtual storage area network identifier (VSAN ID). For Brocade switches, this is null.
principalSwitchAddress	String	Fabric switch IP Address.
principalSwitchUsername	String	Fabric switch user name.
principalSwitchPortNumber	Integer	Fabric switch port.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.

Status code	HTTP name	Description
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.115/v1/san-fabrics
```

Example response

```
{
    "resources":
    [
    {
            "sanFabricId": "2__4",
            "switchType": "BROCADE",
            "virtualFabricId": null,
            "principalSwitchAddress": "172.17.91.39",
            "principalSwitchUsername": "admin",
            "principalSwitchPortNumber": 22
        }
    ],
    "total": 4,
    "nextToken": null
}
```

List a fabric switch

You can display the details of a specific fabric switch.

HTTP request syntax (URI)

`GET https://`*`ipAddress`*`/v1/san-fabrics/`*`sanFabricId`*

Use the fabric switch identifier for *sanFabricId*.

Request structure

Not applicable.

Response structure

```
{
    "sanFabricId": "",
    "switchType": "",
    "virtualFabricId": "",
    "principalSwitchAddress": "",
    "principalSwitchUsername": "",
    "principalSwitchPortNumber":
}
```

Attribute	Type	Description
sanFabricId	String	Fabric switch identifier.
switchType	String	Type of switch, such as CISCO or BROCADE.
virtualFabricId	Integer	Virtual fabric identifier. For Cisco switches, this is the user-defined virtual storage area network identifier (VSAN ID). For Brocade switches, this is null.
principalSwitchAddress	String	Fabric switch IP Address.
principalSwitchUsername	String	Fabric switch user name.
principalSwitchPortNumber	Integer	Fabric switch port.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example Code

Request with JSON command:

```
https://10.20.88.199:443/v1/san-fabrics/1__1
```

JSON Response:

```
{
    "sanFabricId": "1__1",
    "switchType": "CISCO",
    "virtualFabricId": "15",
    "principalSwitchAddress": "10.20.90.83",
```

```
    "principalSwitchUsername": "admin",
    "principalSwitchPortNumber": 22
}
```

Create a fabric switch

You can create a fabric switch.

HTTP request syntax (URI)

`POST https://ipAddress/v1/san-fabrics`

Request structure

```
 {
"fabrics": [
{
"principalSwitchAddress": "",
"principalSwitchUsername": "",
"principalSwitchPassword": "",
"principalSwitchPortNumber": ,
"virtualFabricId": "",
"switchType": ""
}
]
}
```

Parameter	Required	Type	Description
principalSwitchAddress	Yes	String	Fabric switch IP address.
principalSwitchUsername	Yes	String	Fabric switch user name.
principalSwitchPassword	Yes	String	Fabric switch password
principalSwitchPortNumber	Yes	String	Fabric switch port.
virtualFabricId	Yes	String	Virtual fabric identifier. For Cisco switches, this is the user-defined virtual storage area network identifier (VSAN ID). For Brocade switches, this is null.
switchType	Yes	String	Type of switch, such as CISCO or BROCADE.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
    {
      "text": "",
      "messageCode": "",
```

```
      "parameters":
       {
       }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the

Parameter	Type	Description
		system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
200	OK	Success.
201	Created	The server has started the operation.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.115/v1/san-fabrics
```

Example request

```
{
  "fabrics": [{
  "virtualFabricId": "2",
  "principalSwitchAddress": "172.17.91.26",
  "principalSwitchUsername": "name",
  "principalSwitchPassword": "XXXXX",
  "principalSwitchPortNumber": 22,
  "switchType": "CISCO"
 }]
}
```

Edit a fabric switch

You can edit the details of a specific fabric switch.

HTTP request syntax (URI)

`POST https://`*`ipAddress`*`/v1/san-fabrics/sanFabricId`

Use the identifer for the switch that you want to update as the *sanFabricId*.

Request structure

```
{
            "virtualFabricId": "",
            "principalSwitchAddress": "",
            "principalSwitchUsername": "",
            "principalSwitchPassword": "",
            "principalSwitchPortNumber":
        }
```

Parameter	Required	Type	Description
virtualFabricId	Yes	String	Virtual fabric identifier. For Cisco switches, this is the user-defined virtual storage area network identifier (VSAN ID). For Brocade switches, this is null.
principalSwitchAddress	Yes	String	Fabric switch IP address.
principalSwitchUsername	Yes	String	Fabric switch user name.
principalSwitchPassword	Yes	String	Fabric switch password.
principalSwitchPortNumber	Yes	String	Fabric switch port.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
```

```
    ],
    "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
200	OK	Success.
201	Created	The server has started the operation.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.115/v1/san-fabrics/2__4
```

Example request

```
{
"virtualFabricId": "null",
"principalSwitchAddress": "172.17.91.39",
"principalSwitchUsername": "MD",
"principalSwitchPassword": "password",
"principalSwitchPortNumber": 22
}
```

Delete a fabric switch

You can remove a fabric switch.

HTTP request syntax (URI)

`DELETE https://`*`ipAddress`*`/v1/san-fabrics/`*`sanFabricId`*

Use the fabric switch ID as the *sanFabricId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
```

```
        {
            "rel": "_self",
            "href": "/v1/jobs/jobId"
        }
    ],
    "tags":
    [
    ],
    "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
200	OK	Success.
204	No content	The request was successful, but the response does not exist.
401	Unauthorized	The operation is not authorized.

Status code	HTTP name	Description
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

6

Data protection resources

This module describes the data resource management operations.

All GET APIs can be accessed by all Storage Advisor roles.

APIs using POST, PATCH, or DELETE methods require the Storage Administrator role or the System Administrator role.

Request	Method	URI	Role
Getting a data protection summary for all storage systems on page 374	GET	/v1/data-protection/summary	Storage administrator System administrator Security administrator
Getting a data protection summary for a storage system on page 375	GET	/v1/data-protection/storage-systems/*storageSystemId*/summary	Storage administrator System administrator Security administrator
Listing replication groups on page 377	GET	/v1/storage-systems/*storageSystemId*/replication-groups	Storage administrator System administrator Security administrator
Getting a replication group by ID on page 380	GET	/v1/storage-systems/*storageSystemId*/replication-groups/*replicationGroupId*	Storage administrator System administrator Security administrator
Getting a replication group summary on page 382	GET	/v1/storage-systems/*storageSystemId*/replication-groups/summary	Storage administrator

Request	Method	URI	Role
			System administrator Security administrator
Creating a replication group on page 384	POST	/v1/storage-systems/*storageSystemId*/replication-groups	System administrator Storage administrator
Adding volumes to a replication group on a storage system on page 387	POST	/v1/storage-systems/*storageSystemId*/replication-groups/*replicationGroupId*/add-volumes	System administrator Storage administrator
Removing volumes from a replication group on a storage system on page 390	POST	/v1/storage-systems/*storageSystemId*/replication-groups/*replicationGroupId*/remove-volumes	System administrator Storage administrator
Restoring volumes on a storage system on page 392	POST	/v1/storage-systems/*storageSystemId*/volumes/restore	System administrator Storage administrator
Updating clone replication groups on a storage system on page 395	PATCH	/v1/storage-systems/*storageSystemId*/replication-groups/*replicationGroupId*	System administrator Storage administrator
Updating a snapshot replication group on a storage system on page 397	PATCH	/v1/storage-systems/*storageSystemId*/replication-groups/*replicationGroupId*	System administrator Storage administrator
Suspending data replication on page 400	POST	/v1/storage-systems/*storageSystemId*/replication-groups/*replicationGroupId*/suspend	System administrator Storage administrator
Resuming replication on page 403	POST	/v1/storage-systems/*storageSystemId*/replication-groups/*replicationGroupId*/restore	System administrator Storage administrator
Deleting a replication group on page 405	DELETE	/v1/storage-systems/*storageSystemId*/replication-groups/*replicationGroupId*	System administrator Storage administrator
Listing volume pairs on page 407	GET	/v1/storage-systems/*storageSystemId*/volume-pairs	Storage administrator System administrator

Request	Method	URI	Role
			Security administrator
Viewing volume pairs affected by actions performed on a replication group on page 410	GET	/v1/storage-systems/*storageSystemId*/replication-groups/*replicationGroupId*/affected-volume-pairs	Storage administrator System administrator Security administrator
Getting primary volume pairs on page 413	GET	/v1/storage-systems/*storageSystemId*/volume-pairs?q=primaryVolume.id:*primaryVolumeId*	Storage administrator System administrator Security administrator
Getting secondary volume pairs on page 416	GET	/v1/storage-systems/*storageSystemId*/volume-pairs?q=secondaryVolume.id:*secondaryVolumeId*	Storage administrator System administrator Security administrator
Getting secondary volumes on page 419	GET	/v1/storage-systems/*storageSystemId*/volumes/*volumeID*/secondaryVolumes	Storage administrator System administrator Security administrator
Listing failed volume pairs on page 424	GET	/v1/storage-systems/*storageSystemId*/volume-pairs?state=ERROR	Storage administrator System administrator Security administrator
Listing Global-active device pairs on page 426	GET	/v1/gad-pairs	Storage administrator System administrator Security administrator
Listing virtual storage machines on page 429	GET	/v1/virtual-storage-machines	Storage administrator System administrator

Request	Method	URI	Role
			Security administrator

- ☐ Getting a data protection summary for all storage systems
- ☐ Getting a data protection summary for a storage system
- ☐ Listing replication groups
- ☐ Getting a replication group by ID
- ☐ Getting a replication group summary
- ☐ Creating a replication group
- ☐ Adding volumes to a replication group on a storage system
- ☐ Removing volumes from a replication group on a storage system
- ☐ Restoring volumes on a storage system
- ☐ Updating clone replication groups on a storage system
- ☐ Updating a snapshot replication group on a storage system
- ☐ Suspending data replication
- ☐ Resuming replication
- ☐ Deleting a replication group
- ☐ Listing volume pairs
- ☐ Viewing volume pairs affected by actions performed on a replication group
- ☐ Getting primary volume pairs
- ☐ Getting secondary volume pairs
- ☐ Getting secondary volumes

- Listing failed volume pairs
- Listing Global-active device pairs
- Listing virtual storage machines
- Pair status definitions

Getting a data protection summary for all storage systems

You can display a list of protected and unprotected volumes and capacity in all storage systems.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/data-protection/summary
```

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
        "protectedCapacity": ,
        "protectedVolumes": ,
        "unprotectedCapacity": ,
        "unprotectedVolumes": ,
        "secondaryCapacity": ,
        "secondaryVolumes":
}
```

Parameter	Type	Description
protectedCapacity	Long	Total capacity of all protected volumes, in bytes.
protectedVolumes	Integer	The number of protected volumes.
unprotectedCapacity	Long	Total capacity of all unprotected volumes, in bytes.
unprotectedVolumes	Integer	The number of unprotected volumes.
secondaryCapacity	Long	Total capacity of all secondary volumes, in bytes.
secondaryVolumes	Integer	The number of secondary volumes.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.

Status code	HTTP name	Description
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified storage system ID is not valid or the storage system does not exist.

Example Request

```
GET https://172.17.64.112/v1/data-protection/summary
```

Example response

```
{
        "protectedCapacity": 5064195939328,
        "protectedVolumes": 7,
        "unprotectedCapacity": 523975209956352,
        "unprotectedVolumes": 1126,
        "secondaryCapacity": 70849351026688,
        "secondaryVolumes": 52
}
```

Getting a data protection summary for a storage system

You can display a list of protected and unprotected capacity and volumes in a storage system.

HTTP request syntax (URI)

GET https://*ipAddress*/v1/data-protection/storage-systems/*storageSystemId*/summary

Use the storage system ID as the *storageSystemId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
"protectedCapacity": ,
"protectedVolumes": ,
"unprotectedCapacity": ,
```

```
"unprotectedVolumes": ,
"secondaryCapacity": ,
"secondaryVolumes":
}
```

Parameter	Type	Description
protectedCapacity	Long	Total capacity of all protected volumes, in bytes.
protectedVolumes	Integer	The number of protected volumes.
unprotectedCapacity	Long	Total capacity of all unprotected volumes, in bytes.
unprotectedVolumes	Integer	The number of unprotected volumes.
secondaryCapacity	Long	Total capacity of all secondary volumes, in bytes.
secondaryVolumes	Integer	The number of secondary volumes.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.

Example Request

```
GET https://172.17.64.112/v1/data-protection/storage-systems/
410031/summary
```

Example response

```
{
"protectedCapacity": 5059900972032,
"protectedVolumes": 3,
"unprotectedCapacity": 39678455755776,
"unprotectedVolumes": 914,
"secondaryCapacity": 70832171157504,
"secondaryVolumes": 36
}
```

Listing replication groups

You can display a list of all replication groups in a storage system.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/storage-systems/storageSystemId/
replication-groups
```

Use the storage system ID as the *storageSystemId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
          "resources": [{
               "id": ,
               "storageSystemId": "",
               "name": "",
               "comments": "",
               "type": "",
               "consistent": ,
               "numberOfCopies": ,
               "schedule": {
                     "recurringUnit": "",
                     "minute": ,
                     "hour": ,
                     "recurringUnitInterval": ,
                     "dayOfWeek": ,
                     "dayOfMonth":
               },
               "scheduleEnabled": ,
               "primaryVolumeIds": [
                  ],
               "failures":

          }],
     "total": ,
     "nextToken":
}
```

Parameter	Type	Description
id	String	ID of the replication group.
storageSystemId	String	ID of the storage system to which the replication group belongs.
name	String	Name of the replication group.

Parameter	Type	Description
comments	String	Comment for the replication group. Min = 1, max = 255 characters.
type	String	Replication type. Valid values: • CLONE • SNAP: Snapshot
consistent	Boolean	Whether or not copy operations run on all volume pairs in the group simultaneously.
numberOfCopies	Integer	Number of replication group copies. Min =1, max = 1024. This parameter is only available when the `type` is SNAP.
schedule	Object	Interval at which the snapshots are taken, such as: • hour; Integer, valid values: 0-23 • minute; Integer, valid values: 0-59 • recurringUnit; String, ('HOURLY', 'DAILY','WEEKLY', 'MONTHLY') • recurringUnitInterval; Integer, (null, or any positive integer) • dayOfWeek; List of Strings, (null, or 'SUN', 'MON','TUE', 'WED', 'THU', 'FRI', 'SAT') • dayOfMonth; Integer, (null, or 1-31) Notes: • This parameter is only available when the `type` is SNAP. • Only hour and minute are required if Daily is chosen • recurringUnitInterval is only applicable if Hourly is chosen • dayOfWeek is only applicable if Weekly is chosen • dayOfMonth is only applicable if Monthly is chosen
scheduleEnabled	Boolean	Whether or not the schedule is enabled. This parameter is only available when the `type` is SNAP.
primaryVolumeIds	List	List of the primary volume IDs.
failures	Integer	Count of data protection failed volumes.
total	Long	Total replication groups in a given storage system.
nextToken	String	The API will return up to 100 resources with one call. This parameter is used for pagination when there are more than 100 resources in the system. At the bottom of the returned response is a link to another GET call you can make to retrieve the next page of resources. Copy the

Parameter	Type	Description
		href link that includes the next token and paste it in your Storage Advisor browser.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example Request

```
GET https://172.17.64.116/v1/storage-systems/410209/replication-groups
```

Example response

```
{
          "resources": [{
                "id": 1,
                "storageSystemId": "10139",
                "name": "testRg",
                "comments": "test comments",
                "type": "SNAP",
                "consistent": false,
                "numberOfCopies": 1,
                "schedule": {
                      "recurringUnit": "HOURLY",
                      "minute": 43,
                      "hour": null,
                      "recurringUnitInterval": 1,
                      "dayOfWeek": null,
                      "dayOfMonth": null
                },
                "scheduleEnabled": true,
                "primaryVolumeIds": [
                      309
                ],
                "failures": 0
          },
          {
                "id": 2,
```

```
                "storageSystemId": "10139",
                "name": "testRg2",
                "comments": "test comments2",
                "type": "CLONE",
                "consistent": false,
                "numberOfCopies": null,
                "schedule": null,
                "scheduleEnabled": null,
                "primaryVolumeIds": [
                      369
                ],
                "failures": 0
            }],
        "total": 2,
        "nextToken": null
}
```

Getting a replication group by ID

You can display details of a replication group in a storage system.

HTTP request syntax (URI)

`GET https://`*`ipAddress`*`/v1/storage-systems/`*`storageSystemId`*`/replication-groups/`*`replicationGroupId`*

Use the storage system ID as the *storageSystemId*.

Use the ID as the *replicationGroupId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
                "id": ,
                "storageSystemId": "",
                "name": "",
                "comments": "",
                "type": "",
                "consistent": ,
                "numberOfCopies": ,
                "schedule": {
                      "recurringUnit": "",
                      "minute": ,
                      "hour": ,
                      "recurringUnitInterval": ,
                      "dayOfWeek": ,
                      "dayOfMonth":
                },
```

```
            "scheduleEnabled": ,
            "primaryVolumeIds": [
               ],
            "failures":

},
```

Parameter	Type	Description
id	String	ID of the replication group.
storageSystemId	String	ID of the storage system.
name	String	Name of the resource.
comments	String	Comment for the replication group. Min = 1, max = 255 characters.
type	String	Replication type. Valid values: • CLONE • SNAP: Snapshot
consistent	Boolean	Whether or not copy operations run on all volume pairs in the group simultaneously.
numberOfCopies	Integer	Number of replication group copies. Min =1, max = 1024. This parameter is only available when the `type` is SNAP.
schedule	Object	Interval at which the snapshots are taken, such as: • hour; Integer, valid values: 0-23 • minute; Integer, valid values: 0-59 • recurringUnit; String, ('HOURLY', 'DAILY','WEEKLY', 'MONTHLY') • recurringUnitInterval; Integer, (null, or any positive integer) • dayOfWeek; List of Strings, (null, or 'SUN', 'MON','TUE', 'WED', 'THU', 'FRI', 'SAT') • dayOfMonth; Integer, (null, or 1-31) Notes: • This parameter is only available when the `type` is SNAP. • Only hour and minute are required if Daily is chosen • recurringUnitInterval is only applicable if Hourly is chosen • dayOfWeek is only applicable if Weekly is chosen • dayOfMonth is only applicable if Monthly is chosen
scheduleEnabled	Boolean	Whether or not the schedule is enabled. This parameter is only available when the `type` is SNAP.
primaryVolumeIds	List	List of the primary volume IDs.
failures	Integer	Count of data protection failed volumes.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example Request

```
GET https://172.17.64.112/v1/storage-systems/410031/replication-groups/1
```

Example response


```
{
              "id": 1,
              "storageSystemId": "10139",
              "name": "testRg",
              "comments": "test comments",
              "type": "SNAP",
              "consistent": false,
              "numberOfCopies": 1,
              "schedule": {
                    "recurringUnit": "HOURLY",
                    "minute": 43,
                    "hour": null,
                    "recurringUnitInterval": 1,
                    "dayOfWeek": null,
                    "dayOfMonth": null
              },
              "scheduleEnabled": true,
              "primaryVolumeIds": [
                    309
              ],
              "failures": 0

},
```


Getting a replication group summary

You can display the replication group summary by replication types.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/storage-systems/storageSystemId/
replication-groups/summary
```

Use the storage system ID as the *storageSystemId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "replicationGroupCountByType":
  [
   {
   "replicationType": "",
   "count":
   },
   {
   "replicationType": "",
   "count":
   }
  ]
}
```

Parameter	Type	Description
replicationGroupCountByType	Set	The total number of replication group by type.
replicationType	String	Volume replication type. Valid values: • CLONE • SNAP: Snapshot
count	Integer	Number of replication groups of the given type.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example Request

```
GET https://172.17.64.112/v1/storage-systems/410031/replication-
groups/summary
```

Example response

```
{
  "replicationGroupCountByType":
  [
   {
   "replicationType": "CLONE",
   "count": 1
   },
   {
   "replicationType": "SNAP",
   "count": 0
   }
  ]
}
```

Creating a replication group

You can create a replication group in a storage system.

HTTP request syntax (URI)

```
POST https://ipAddress/v1/storage-systems/storageSystemId/
replication-groups
```

Use the storage system ID as the *storageSystemId*.

Request structure

The request body structure is shown here.

```
{
    "name": "",
    "comments": "",
    "type": "",
    "consistent": ,
    "numberOfCopies": ,
    "schedule": {
        "recurringUnit":"",
        "minute":,
        "hour": ,
        "recurringUnitInterval":,
        "dayOfWeek": ,
        "dayOfMonth":
    },
```

```
    "primaryVolumeIds":
}
```

Parameter	Required	Type	Description
name	Yes	String	The name of the replication group.
comments	No	String	Comments about the resource. Min = 1, max = 255.
type	Yes	String	The type of replication group. SNAP or CLONE.
consistent	No	Boolean	Whether or not copy operations run on all pairs in the group simultaneously.
numberOfCopies	Yes	Integer	Number of replication group copies. Min=1, max=1024. This parameter is only available when `type` is SNAP.
schedule	Yes	Object	Required if type is SNAP. Interval at which the snapshots are taken, such as: • hour; Integer, valid values: 0-23 • minute; Integer, valid values: 0-59 • recurringUnit; String, ('HOURLY', 'DAILY','WEEKLY', 'MONTHLY') • recurringUnitInterval; Integer, (null, or any positive integer) • dayOfWeek; String[ ], (null, or 'SUN', 'MON','TUE', 'WED', 'THU', 'FRI', 'SAT') • dayOfMonth; Integer, (null, or 1-31) Note: • Minute is required if HOURLY is chosen. • Hour and minute are required if DAILY is chosen • recurringUnitInterval is only applicable if HOURLY is chosen • dayOfWeek is only applicable if WEEKLY is chosen • dayOfMonth is only applicable if MONTHLY is chosen
primaryVolumeIds	Yes	List	List of the primary volume IDs.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
```

```
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example Request

```
POST https://172.17.64.112/v1/storage-systems/410031/
replication-groups


{
    "name":"testRg",
    "comments":"test comments",
    "consistent":false,
    "type":"SNAP",
    "primaryVolumeIds":[6],
    "numberOfCopies":1,
    "schedule":{
        "recurringUnit":"Hourly",
        "minute":10,
        "hour": null,
        "recurringUnitInterval":null,
        "dayOfWeek":null,
        "dayOfMonth":null
    }
}
```

Adding volumes to a replication group on a storage system

You can add primary or secondary volumes to a replication group on a storage system.

HTTP request syntax (URI)

POST https://*ipAddress*/v1/storage-systems/*storageSystemId*/replication-groups/*replicationGroupId*/add-volumes

Use the storage system ID as the *storageSystemId*.

Use the ID as the *replicationGroupId*.

Request structure

```
{
"primaryVolumeIds": []
}
```

Parameter	Required	Type	Description
primaryVolumeIds	Yes	List	List of the primary volume IDs.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.

Parameter	Type	Description
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example Request

```
POST https://172.17.64.113/v1/storage-systems/410031/
replication-groups/1/add-volumes
```

Example Request

```
{
"primaryVolumeIds": [1]
}
```

Removing volumes from a replication group on a storage system

You can remove primary or secondary volumes from a replication group on a storage system.

HTTP request syntax (URI)

`POST https://`*`ipAddress`*`/v1/storage-systems/`*`storageSystemId`*`/replication-groups/`*`replicationGroupId`*`/remove-volumes`

Use the storage system ID as the *storageSystemId*.

Use the ID as the *replicationGroupId*.

Request structure

```
{
"primaryVolumeIds": [],
"deleteSecondaryVolume":
}
```

Parameter	Required	Type	Description
primaryVolumeIds	Yes	List	List of the primary volume IDs.
deleteSecondaryVolume	Yes	Boolean	Whether or not to delete the secondary volume.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
```

```
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example Request

```
POST https://172.17.64.113/v1/storage-systems/410031/
replication-groups/1/remove-volumes
```

Example Request

```
{
"primaryVolumeIds": [14,3,101],
"deleteSecondaryVolume": true
}
```

Restoring volumes on a storage system

You can restore volumes on a storage system.

HTTP request syntax (URI)

```
POST https://ipAddress/v1/storage-systems/storageSystemId/
volumes/volumeId/restore
```

Use the storage system ID as the *storageSystemId*.

Use the primary or secondary volume ID as the *volumeId*.

Request structure

```
{
"secondaryVolumeId":
}
```

Parameter	Required	Type	Description
secondaryVolumeId	Yes	Integer	ID of the secondary volume.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).

Parameter	Type	Description
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example Request

```
POST https://172.17.64.113/v1/storage-systems/410031/volumes/3/
restore
```

Example Request

```
{
```

```
"secondaryVolumeId": 46
}
```

Updating clone replication groups on a storage system

You can update a clone replication group on a storage system. You can change the name or update comments.

HTTP request syntax (URI)

`PATCH https://`*`ipAddress`*`/v1/storage-systems/`*`storageSystemId`*`/replication-groups/`*`replicationGroupId`*

Use the storage system ID as the *storageSystemId*.

Use the ID as the *replicationGroupId*.

Request structure

```
{
"name": "",
"comments":""
}
```

Parameter	Required	Type	Description
name	No	String	The name of the resource. Min = 1, max = 26.
comments	No	String	Comments about the resource. Min = 1, max = 255.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
```

```
    [
        {
            "rel": "_self",
            "href": "/v1/jobs/jobId"
        }
    ],
    "tags":
    [
    ],
    "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
202	Accepted	The request has been accepted for processing, but the processing has not been completed.

Status code	HTTP name	Description
204	No content	The request was successful, but the response does not exist.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.

Example Request

```
PATCH https://172.17.64.113/v1/storage-systems/410031/
replication-groups/1
```

Example Request

```
{
 "name": "Clone group name",
 "comments":"This is a clone group for server-1"
}
```

Updating a snapshot replication group on a storage system

Use this API to manage replication policy on a storage system. You can change, suspend, or resume the schedule, change the name, the numberOfCopies, or update comments. The policy type and consistency attributes cannot be changed after a policy is created. Using this API, you cannot change the volume set to which the policy is applied. Use the protect/unprotect APIs to update the volume set.

HTTP request syntax (URI)

PATCH https://*ipAddress*/v1/storage-systems/*storageSystemId*/replication-groups/*replicationGroupId*

Use the storage system ID as the *storageSystemId*.

Use the ID as the *replicationGroupId*.

Request structure

The request body structure is shown below:

```
{
"comments": "",
"name": "",
"numberOfCopies": ,
"schedule":
```

```
{
  "hour": ,
  "minute": ,
  "recurringUnit": "",
  "recurringUnitInterval": ,
  "dayOfWeek": [""],
  "dayOfMonth":
 },
"scheduleEnabled":""
}
```

Parameter	Required	Type	Description
comments	No	String	Comments about the resource. Min = 1, max = 255.
name	No	String	The name of the resource. Min = 1, max = 26.
numberOfCopies	No	Integer	Number of replication group copies. Min = 1, max = 1024.
schedule	Yes	Object	Required if type is SNAP. Interval at which the snapshots are taken, such as: • hour; Integer, valid values: 0-23 • minute; Integer, valid values: 0-59 • recurringUnit; String, ('HOURLY', 'DAILY','WEEKLY', 'MONTHLY') • recurringUnitInterval; Integer, (null, or any positive integer) • dayOfWeek; String[ ], (null, or 'SUN', 'MON','TUE', 'WED', 'THU', 'FRI', 'SAT') • dayOfMonth; Integer, (null, or 1-31) Note: • Minute is required if HOURLY is chosen. • Hour and minute are required if DAILY is chosen • recurringUnitInterval is only applicable if HOURLY is chosen • dayOfWeek is only applicable if WEEKLY is chosen • dayOfMonth is only applicable if MONTHLY is chosen
scheduleEnabled	No	Boolean	Whether or not the schedule is enabled.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
```

```
    },
    "user": "",
    "status": "",
    "startDate": ,
    "endDate": ,
    "parentJobId": ,
    "reports":
    [
    ],
    "links":
    [
       {
          "rel": "_self",
          "href": "/v1/jobs/jobId"
       }
    ],
    "tags":
    [
    ],
    "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
204	No content	The request was successful, but the response does not exist.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.

Example Request

```
PATCH https://172.17.64.113/v1/storage-systems/410031/
replication-groups/1
```

Example Request

```
{
"comments": "This is a snapshot group for server 2",
"name": "unique new name"
"number of copies": 2
"schedule":
{
  "hour": ,
  "minute": 0 ,
  "recurringUnit": "HOURLY",
  "recurringUnitInterval": 2,
  "dayOfWeek": ,
  "dayOfMonth":
 },
"scheduleEnabled":"true"
}
```

Suspending data replication

This API suspends data replication for all volumes in the given replication group in a storage system. This functionality only supported for a CLONE replication group. An attempt to suspend a SNAPHOT replication group will result in an exception.

HTTP request syntax (URI)

```
POST https://ipAddress/v1/storage-systems/storageSystemId/
replication-groups/replicationGroupId/suspend
```

Use the storage system ID as the *storagesystemId*.

Use the ID as the *replicationGroupId*.

Request structure

Not applicable

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.

Parameter	Type	Description
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example Request

```
POST https://172.17.64.112/v1/storage-systems/410031/
replication-groups/1/suspend
```

Resuming replication

This API resumes data replication for all volumes in the given replication group in a storage system. This functionality only supported for a CLONE replication group. An attempt to suspend a SNAPHOT replication group will result in an exception.

HTTP request syntax (URI)

`POST https://`*`ipAddress`*`/v1/storage-systems/`*`storageSystemId`*`/replication-groups/`*`replicationGroupId`*`/resume`

Use the storage system ID as the *storageSystemId*.

Use the ID as the *replicationGroupId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example Request

```
POST https://172.17.64.112/v1/storage-systems/410031/
replication-groups/1/resume
```

Deleting a replication group

You can delete a replication group in a storage system.

HTTP request syntax (URI)

```
DELETE https://ipAddress/v1/storage-systems/storageSystemId/
replication-groups/replicationGroupId
```

Use the storage system ID as the *storageSystemId*.

Use the replication group ID as the *replicationGroupId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
```

```
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
204	No content	The request was successful, but the response does not exist.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.

Example Request

```
DELETE https://172.17.64.112/v1/storage-systems/410031/
replication-groups/1
```

Listing volume pairs

You can display a list of all volume pairs in a storage system.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/storage-systems/storageSystemId/volume-
pairs
```

Use the storage system ID as the *storageSystemId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
    "resources":
    [
        {
            "replicationGroup": ,
            "volumePairGroup": "",
            "primaryVolume":
            {
                "id": ,
                "storageSystemId": "",
                "status": ""
            },
            "secondaryVolume":
            {
                "id": ,
                "storageSystemId": "",
                "status": ""
            },
            "mirrorId": ,
            "splitTime": ,
            "consistent": ,
            "consistencyId": ,
            "type": "",
            "state": ""
        }
   ]
}
```

Parameter	Type	Description
replicationGroup	String	The name of the replication group.
volumePairGroup	String	The name of the copy group, for clones, or a snapshot group for snapshots.
id	Integer	ID of the volume.
storageSystemId	String	ID of the storage system.
status	String	Status of the given volume in the volume pair. Valid values: • PAIR: a volume is in paired status. • PSUS: a volume pair is in suspended status for the primary volume. • SSUS: a volume pair is in suspended status for the secondary volume. • SMPP: a volume pair with the clone attribute is being deleted. • PSUP: a volume pair with the clone attribute is in suspended status.
mirrorId	Integer	When multiple S-VOLs are created for one P-VOL, a mirror ID is assigned to each volume pair.
splitTime	Long	The time pair split is performed in Epoch time format.
consistent	Boolean	Whether or not copy operations run on all volume pairs in the group simultaneously.
consistencyId	Integer	The ID of the consistency group in which the volume pair resides. If not consistent, the value null is returned.
type	String	The replication type for the volume pair. Valid values: • SNAP_ON_SNAP: Snapshot pair that can be cascaded. • SNAP_CLONE: A pair relationship in which the secondary volume of the pair will be a real volume of the primary volume. • CLONE • SNAP: Snapshot

Parameter	Type	Description
state	String	The volume pair state. Valid values: HEALTHY or ERROR.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example Request

```
GET https://172.17.64.112/v1/storage-systems/410031/volume-pairs
```

Example response

```
{
    "resources":
    [
        {
            "replicationGroup": null,
            "volumePairGroup": "RL-Multiple-
snaps_1462426223934",
            "primaryVolume":
            {
                "id": 14,
                "storageSystemId": "410031",
                "status": "PSUS"
            },
            "secondaryVolume":
            {
                "id": 46,
                "storageSystemId": "410031",
                "status": "SSUS"
            },
            "mirrorId": 10,
            "splitTime": 1462441131000,
            "consistent": true,
            "consistencyId": null,
            "type": "SNAP",
            "state": "HEALTHY"
        }
    ]
}
```

Viewing volume pairs affected by actions performed on a replication group

You can display a list of volume pairs affected by actions performed on a replication group in a storage system. Volumes in a replication group include all volumes explicitly added to a replication group using APIs or the web-based user interface. The affected volume pairs include volumes added outside of Storage Advisor to Storage Advisor-managed copy groups, snapshot groups, and consistency groups.

HTTP request syntax (URI)

`GET https://`*`ipAddress`*`/v1/storage-systems/`*`storageSystemId`*`/replication-groups/`*`replicationGroupId`*`/affected-volume-pairs`

Use the storage system ID as the *storageSystemId*.

Use the replication group ID as the *replicationGroupId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
        "volumePairs":
        [
            {
                "replicationGroup": "",
                "volumePairGroup": "",
                "primaryVolume":
                {
                    "id": ,
                    "storageSystemId": "",
                    "status": ""
                },
                "secondaryVolume":
                {
                    "id": ,
                    "storageSystemId": "",
                    "status": ""
                },
                "mirrorId": ,
                "splitTime": ,
                "consistent": ,
                "consistencyId": ,
                "type": "",
                "state": ""
            }
```

```
            ]
}
```

Parameter	Type	Description
replicationGroup	String	The name of the replication group.
volumePairGroup	String	The name of the copy group, for clones, or a snapshot group for snapshots.
id	Integer	ID of the volume.
storageSystemId	String	ID of the storage system.
status	String	Status of the given volume in the volume pair. Valid values: • PAIR: a volume is in paired status. • PSUS: a volume pair is in suspended status for the primary volume. • SSUS: a volume pair is in suspended status for the secondary volume. • SMPP: a volume pair with the clone attribute is being deleted. • PSUP: a volume pair with the clone attribute is in suspended status.
mirrorId	Integer	When multiple S-VOLs are created for one P-VOL, a mirror ID is assigned to each volume pair.
splitTime	Long	The time pair split is performed in Epoch time format.
consistent	Boolean	Whether or not copy operations run on all volume pairs in the group simultaneously.
consistencyId	Integer	The ID of the consistency group in which the volume pair resides. If not consistent, the value null is returned.
type	String	The replication type for the volume pair. Valid values: • SNAP_ON_SNAP: Snapshot pair that can be cascaded. • SNAP_CLONE: A pair relationship in which the secondary volume of the pair will be a real volume of the primary volume. • CLONE

Parameter	Type	Description
		• SNAP: Snapshot
state	String	The volume pair state. Valid values: HEALTHY or ERROR.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example Request

```
GET https://172.17.64.112/v1/storage-systems/410031/replication-
groups/1/affected-volume-pairs
```

Example response

```
{
        "volumePairs":
        [
            {
                "replicationGroup": "clone-now-101",
                "volumePairGroup": "clone-
now-101_1464302071168",
                "primaryVolume":
                {
                    "id": 14,
                    "storageSystemId": "410031",
                    "status": "PAIR"
                },
                "secondaryVolume":
                {
                    "id": 107,
                    "storageSystemId": "410031",
                    "status": "PAIR"
                },
                "mirrorId": 0,
                "splitTime": null,
                "consistent": true,
                "consistencyId": 34,
```

```
                "type": "CLONE",
                "state": "HEALTHY"
            }
        ]
}
```

Getting primary volume pairs

You can display a list of volume pairs listed by the primary volume in a storage system.

HTTP request syntax (URI)

`GET https://`*`ipAddress`*`/v1/storage-systems/`*`storageSystemId`*`/volume-pairs?q=primaryVolume.id:`*`primaryVolumeId`*

Use the storage system ID as the *storageSystemId*.

Use the ID as the *volumeId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
    "resources":
    [
        {
            "replicationGroup": ,
            "volumePairGroup": "",
            "primaryVolume":
            {
                "id": ,
                "storageSystemId": "",
                "status": ""
            },
            "secondaryVolume":
            {
                "id": ,
                "storageSystemId": "",
                "status": ""
            },
            "mirrorId": ,
            "splitTime": ,
            "consistent": ,
            "consistencyId": ,
            "type": "",
            "state": ""
        }
```

```
    ]
}
```

Parameter	Type	Description
replicationGroup	String	The name of the replication group.
volumePairGroup	String	The name of the copy group, for clones, or a snapshot group for snapshots.
id	Integer	ID of the volume.
storageSystemId	String	ID of the storage system.
status	String	Status of the given volume in the volume pair. Valid values: • PAIR: a volume is in paired status. • PSUS: a volume pair is in suspended status for the primary volume. • SSUS: a volume pair is in suspended status for the secondary volume. • SMPP: a volume pair with the clone attribute is being deleted. • PSUP: a volume pair with the clone attribute is in suspended status.
mirrorId	Integer	When multiple S-VOLs are created for one P-VOL, a mirror ID is assigned to each volume pair.
splitTime	Long	The time pair split is performed in Epoch time format.
consistent	Boolean	Whether or not copy operations run on all volume pairs in the group simultaneously.
consistencyId	Integer	The ID of the consistency group in which the volume pair resides. If not consistent, the value null is returned.
type	String	The replication type for the volume pair. Valid values: • SNAP_ON_SNAP: Snapshot pair that can be cascaded. • SNAP_CLONE: A pair relationship in which the secondary volume of the pair will be a real volume of the primary volume. • CLONE

Parameter	Type	Description
		• SNAP: Snapshot
state	String	The volume pair state. Valid values: HEALTHY or ERROR.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example Request

```
GET https://172.17.64.112/v1/storage-systems/410031/volume-
pairs?q=primaryVolume.Id:14&primaryVolume.storageSystemId=410031
```

Example response

```
{
    "resources":
    [
        {
            "replicationGroup": null,
            "volumePairGroup": "RL-Multiple-
snaps_1462426223934",
            "primaryVolume":
            {
                "id": 14,
                "storageSystemId": "410031",
                "status": "PSUS"
            },
            "secondaryVolume":
            {
                "id": 46,
                "storageSystemId": "410031",
                "status": "SSUS"
            },
            "mirrorId": 10,
            "splitTime": 1462441131000,
            "consistent": true,
            "consistencyId": null,
```

```
            "type": "SNAP",
            "state": "HEALTHY"
        },
    ]
}
```

Getting secondary volume pairs

You can display a list of volume pairs listed by the secondary volume in a storage system.

HTTP request syntax (URI)

`GET https://`*`ipAddress`*`/v1/storage-systems/`*`storageSystemId`*`/volume-pairs?q=secondaryVolume.id:`*`secondaryVolumeId`*

Use the storage system ID as the *storageSystemId*.

Use the secondary volume ID as the *secondaryVolumeId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
    "resources":
    [
        {
            "replicationGroup": ,
            "volumePairGroup": "",
            "primaryVolume":
            {
                "id": ,
                "storageSystemId": "",
                "status": ""
            },
            "secondaryVolume":
            {
                "id": ,
                "storageSystemId": "",
                "status": ""
            },
            "mirrorId": ,
            "splitTime": ,
            "consistent": ,
            "consistencyId": ,
            "type": "",
            "state": ""
        },
```

```
    ]
}
```

Parameter	Type	Description
replicationGroup	String	The name of the replication group.
volumePairGroup	String	The name of the copy group, for clones, or a snapshot group for snapshots.
id	Integer	ID of the volume.
storageSystemId	String	ID of the storage system.
status	String	Status of the given volume in the volume pair. Valid values: • PAIR: a volume is in paired status. • PSUS: a volume pair is in suspended status for the primary volume. • SSUS: a volume pair is in suspended status for the secondary volume. • SMPP: a volume pair with the clone attribute is being deleted. • PSUP: a volume pair with the clone attribute is in suspended status.
mirrorId	Integer	When multiple S-VOLs are created for one P-VOL, a mirror ID is assigned to each volume pair.
splitTime	Long	The time pair split is performed in Epoch time format.
consistent	Boolean	Whether or not copy operations run on all volume pairs in the group simultaneously.
consistencyId	Integer	The ID of the consistency group in which the volume pair resides. If not consistent, the value null is returned.
type	String	The replication type for the volume pair. Valid values: • SNAP_ON_SNAP: Snapshot pair that can be cascaded. • SNAP_CLONE: A pair relationship in which the secondary volume of the pair will be a real volume of the primary volume. • CLONE

Parameter	Type	Description
		• SNAP: Snapshot
state	String	The volume pair state. Valid values: HEALTHY or ERROR.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example Request

```
GET https://172.17.64.112/v1/storage-systems/53001/volume-pairs?
secondaryVolume.Id=myId&secondaryVolume.storageSystemId=53001
```

Example response

```
{
    "resources":
    [
        {
            "replicationGroup": null,
            "volumePairGroup": "RL-Multiple-
snaps_1462426223934",
            "primaryVolume":
            {
                "id": 14,
                "storageSystemId": "410031",
                "status": "PSUS"
            },
            "secondaryVolume":
            {
                "id": 46,
                "storageSystemId": "410031",
                "status": "SSUS"
            },
            "mirrorId": 10,
            "splitTime": 1462441131000,
            "consistent": true,
            "consistencyId": null,
```

```
            "type": "SNAPSHOT",
            "state": "HEALTHY"
        }
    ]
}
```

Getting secondary volumes

You can display a list of secondary volumes for a specific primary volume in a storage system.

HTTP request syntax (URI)

`GET https://`*`ipAddress`*`/v1/storage-systems/`*`storageSystemId`*`/volumes/`*`volumeId`*`/secondaryVolumes`

Use the storage system ID as the *storageSystemId*.

Use the volume ID as the *volumeId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
    "volumeResourceCollection":
    {
        "volumes":
        [
            {
                "volumeId": ,
                "storageSystemId": "",
                "poolId": "",
                "label": "",
                "size": ,
                "usedCapacity": ,
                "availableCapacity": ,
                "utilization": ,
                "status": "",
                "type": "",
                "provisioningStatus": ""
                "attachedVolumeServerSummary":  {
                     [
                       {
                         "serverId": ,
                         "paths":
                           [
                             {
                               "storagePortId": "",
                               "storageSystemId": "",
```

```
                                    "lun": ,
                                    "name": "",
                                    "hostmode": "",
                                    "wwns":
                                      [
                                         ""
                                      ],
                                    "hostModeOptions": []
                                  }
                               ]
                          }
                      "dataProtectionSummary":
                      {
                          "replicationType":
                          [
                              ""
                          ],
                          "volumeType":
                          [
                              ""
                          ],
                          "replicationGroupIdMap":
                          {
                          },
                          "hasFailures": ,
                          "secondaryVolumeCount": ,
                          "secondaryVolumeFailures":
                      }
                      "gadSummary": {
                         "vsmId": ,
                         "virtualLdevId": ,
                         "volumeType": ""
                      },
                      "dkcDataSavingType": ""
                  }
          ]
      }
}
```


Parameter	Type	Description
volumeResourceCollection	Set	List of primary or secondary volumes.
volumeId	Long	ID number of the volume within the parent storage system.
storageSystemId	String	ID of the storage system.
poolId	String	ID of the pool from which the resource is allocated.
label	String	Name of the volume.
size	Long	Size of the volume, in bytes.
usedCapacity	Long	Sum of used capacity per volume resource, in bytes.

Parameter	Type	Description
availableCapacity	Long	Unused capacity of the resource, in bytes.
utilization	Integer	The percentage usage of the volume capacity. The utilization percentage= (usedCapacity/ size) *100.
status	String	Volume status: Valid values: NORMAL, BLOCKED, BUSY, UNKNOWN, or NONE.
type	String	Type of pool from which the volume is allocated. Valid values: HDP, HDT, or HTI.
dkcDataSavingType	String	Type of controller-based capacity saving. Valid values are COMPRESSION, DEDUPLICATION_AND_COMPRESSION, and NONE.
dataProtectionSummary	Object	List of the data protection attributes of the volume.
replicationType	String	Volume replication type. Valid values: • SNAP_ON_SNAP: Snapshot pair that can be cascaded. • SNAP_CLONE: A pair relationship in which the secondary volume of the pair will be a real volume of the primary volume. • CLONE • SNAP: Snapshot
volumeType	Set	Type of volume in the replication. Valid values: P-VOL, S-VOL, or UNPROTECTED.
replicationGroupIdMap	Object	Replication group ID map. Consisting of the replication group ID and the replication group name for each of the replication group the volume belongs to.
hasFailures	Boolean	Whether or not the volume has replication failures.
secondaryVolumeCount	Integer	Count of secondary volume pairs protecting the primary volume.
secondaryVolumeFailures	Integer	Count of failed volume pairs where this volume is a S-VOL.

Parameter	Type	Description
gadSummary	String	The status of GAD. Values are: **1.** Incomplete **2.** Not Available **3.** Complete
vsmId	String	ID number of the virtual storage machine (VSM).
virtualLdevID	String	ID number of the virtual volume.
volumeType	String	Volume type. Valid values: Active-Primary, Active-Secondary

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example Request

```
GET https://172.17.64.112/v1/storage-systems/410031/volumes/3/
secondaryVolumes
```

Example response

```
{
    "volumeResourceCollection":
    {
        "volumes":
        [
            {
                "volumeId": 66,
                "storageSystemId": "410031",
                "poolId": "2",
                "label": "4-6TB-compressed-vol",
                "size": 5057753488384,
                "usedCapacity": 0,
                "availableCapacity": 5057753488384,
                "utilization": 0,
```

```
                    "status": "NORMAL",
                    "type": "HTI",
                    "provisioningStatus": "ATTACHED"
                    "attachedVolumeServerSummary":  {
                         [
                           {
                             "serverId": ,
                             "paths":
                               [
                                 {
                                   "storagePortId": "CL1-A",
                                   "storageSystemId": "440084",
                                   "lun": 42,
                                   "name": "HID_CL1-A_61edd112-
d3eb-405d-8a16",
                                   "hostmode": "",
                                   "wwns":
                                     [
                                        "100000053326f7cd"
                                     ],
                                   "hostModeOptions": []
                                 }
                               ]
                           }
                    "dataProtectionSummary":
                    {
                        "replicationType":
                        [
                            "SNAP"
                        ],
                        "volumeType":
                        [
                            "S-VOL"
                        ],
                        "replicationGroupIdMap":
                        {
                        },
                        "hasFailures": false,
                        "secondaryVolumeCount": 0,

"secondaryVolumeFailures":
                    }
                    "gadSummary": {
                       "vsmId": null,
                       "virtualLdevId": null,
                       "volumeType": ""
                    },
                    "dkcDataSavingType": ""
                }
        ]
    }
}
```

Listing failed volume pairs

You can display a list of failed volume pairs in a storage system.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/storage-systems/storageSystemId/volume-pairs?state=ERROR
```

Use the storage system ID as the *storageSystemId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
    "resources":
    [
        {
            "replicationGroup": ,
            "volumePairGroup": "",
            "primaryVolume":
            {
                "id": ,
                "storageSystemId": "",
                "status": ""
            },
            "secondaryVolume":
            {
                "id": ,
                "storageSystemId": "",
                "status": ""
            },
            "mirrorId": ,
            "splitTime": ,
            "consistent": ,
            "consistencyId": ,
            "type": "",
            "state": ""
        }
    ]
}
```

Parameter	Type	Description
replicationGroup	String	The name of the replication group.

Parameter	Type	Description
volumePairGroup	String	The name of the copy group, for clones, or a snapshot group for snapshots.
id	Integer	ID of the volume.
storageSystemId	String	ID of the storage system.
status	String	Status of the given volume in the volume pair. Valid values: • PAIR: a volume is in paired status. • PSUS: a volume pair is in suspended status for the primary volume. • SSUS: a volume pair is in suspended status for the secondary volume. • SMPP: a volume pair with the clone attribute is being deleted. • PSUP: a volume pair with the clone attribute is in suspended status.
mirrorId	Integer	When multiple S-VOLs are created for one P-VOL, a mirror ID is assigned to each volume pair.
splitTime	Long	The time pair split is performed in Epoch time format.
consistent	Boolean	Whether or not copy operations run on all volume pairs in the group simultaneously.
consistencyId	Integer	The ID of the consistency group in which the volume pair resides. If not consistent, the value null is returned.
type	String	The replication type for the volume pair. Valid values: • SNAP_ON_SNAP: Snapshot pair that can be cascaded. • SNAP_CLONE: A pair relationship in which the secondary volume of the pair will be a real volume of the primary volume. • CLONE • SNAP: Snapshot
state	String	The volume pair state. Valid values: HEALTHY or ERROR.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example Request

```
GET https://172.17.64.112/v1/storage-systems/410031/volume-
pairs?state=ERROR
```

Example response

```
{
    "resources":
    [
        {
            "replicationGroup": null,
            "volumePairGroup": "RL-Multiple-
snaps_1462426223934",
            "primaryVolume":
            {
                "id": 14,
                "storageSystemId": "410031",
                "status": "PSUS"
            },
            "secondaryVolume":
            {
                "id": 46,
                "storageSystemId": "410031",
                "status": "SSUS"
            },
            "mirrorId": 10,
            "splitTime": 1462441131000,
            "consistent": true,
            "consistencyId": null,
            "type": "SNAP",
            "state": "ERROR"
        }
  ]
}
```

Listing Global-active device pairs

You can display a list of all global-active device pairs.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/gad-pairs
```

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
    "resources": [
        {
            primary: {
                gadDeviceId: "",
                volumeId: "",
                storageSystemId:"",
                ioMode:"",
                state:"",
                pairSuspendStatus:"",
                targetStorageSystemId:"",
                targetVolumeId:"",
                targetLunNumber:"",
                type:"",
                status:"",
                pairCreationTime:"",
                quorumId:""
            }
            secondary: {
                gadDeviceId: "",
                volumeId: "",
                storageSystemId:"",
                ioMode:"",
                state:"",
                pairSuspendStatus:"",
                targetStorageSystemId:"",
                targetVolumeId:"",
                targetLunNumber:"",
                type:"",
                status:"",
                pairCreationTime:"",
                quorumId:""
            }
        }
    ],
    ...
    "total": ,
    "nextToken":
}
```

Parameter	Type	Description
gadDeviceID	String	ID of the GAD device.
volumeId	String	ID number of the volume.

Parameter	Type	Description
storageSystemId	String	ID of the storage system.
ioMode	String	The IO mode of the GAD device.
state	String	The GAD device state.
targetStorageSystemId	Integer	The ID of the target system.
targetModel	String	The model of the target system.
targetVolumeId	Integer	The volume ID of the target.
targetLunNumber	Integer	The LUN number of the target system.
type	String	LUN type.
status	String	Status of the given volume in the volume pair. Valid values: • PAIR: a volume is in paired status. • PSUS: a volume pair is in suspended status for the primary volume. • SSUS: a volume pair is in suspended status for the secondary volume. • SMPP: a volume pair with the clone attribute is being deleted. • PSUP: a volume pair with the clone attribute is in suspended status.
pairCreationTime	String	The pair creation time.
quorumId	String	The ID of the Quorum Device.
secondary	GadDevice	The secondary device.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource does not exist.

Request example

Request with JSON command:

```
https://172.17.64.118/v1/storage-systems
```

JSON Response:

```
{
    "resources":
    [
        {
            primary: {
                gadDeviceId: "4105002209/09/2016 00:55:43",
```

```
                    volumeId: "22",
                    storageSystemId:"410500",
                    ioMode:"3",
                    state:"PAIR",
                    pairSuspendStatus:"1",
                    targetStorageSystemId:"410209",
                    targetVolumeId:"7",
                    targetLunNumber:"0",
                    type:"PRIMARY",
                    status:"PAIR",
                    pairCreationTime:"09/09/2016 00:55:43",
                    quorumId:"3"
                }
                secondary: {
                    gadDeviceId: "410209709/09/2016 00:55:19",
                    volumeId: "7",
                    storageSystemId:"410209",
                    ioMode:"3",
                    state:"PAIR",
                    pairSuspendStatus:"1",
                    targetStorageSystemId:"410500",
                    targetVolumeId:"22",
                    targetLunNumber:"2",
                    type:"SECONDARY",
                    status:"PAIR",
                    pairCreationTime:"09/09/2016 00:55:19",
                    quorumId:"3"
                }
            }
        ],
        ...
        "total": 4
        "nextToken": null
}
```

Listing virtual storage machines

You can display a list of all virtual storage machines.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/virtual-storage-machines
```

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
    "resources": [
        {
            "storageSystemId": "",
            "model": "",
            "serialModelNumber": "",
```

```
            "pairHACount": ,
            "physicalStorageSystems": ["",""]
        },
        {
            "storageSystemId": "",
            "model": "",
            "serialModelNumber": "",
            "pairHACount": ,
            "physicalStorageSystems": ["",""]
        },
    ],
    "total": ,
    "nextToken":
}
```

Parameter	Type	Description
storageSystemId	String	ID of the storage system.
model	String	Name of the VSM model.
serialModelNumber	String	Unique UUID to identify the VSM.
pairHACount	Integer	The VSM pair count.
physicalStorageSystems	List	List of the physical storage systems.
nextToken	String	The API will return up to 100 resources with one call. This parameter is used for pagination when there are more than 100 resources in the system. At the bottom of the returned response is a link to another GET call you can make to retrieve the next page of resources. Copy the href link that includes the next token and paste it in your Storage Advisor browser.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource does not exist.

Request example

Request with JSON command:

```
https://172.17.64.118/v1/storage-systems
```

Response example

JSON response:


```
{
    "resources": [
        {
            "storageSystemId": "410501",
            "model": "VSP G400/600",
            "serialModelNumber": "410501VSPG400-600",
            "pairHACount": 27,
            "physicalStorageSystems": ["410500","410209"]
        },
        {
            "storageSystemId": "444444",
            "model": "VSP G800",
            "serialModelNumber": "444444VSPG800",
            "pairHACount": 4,
            "physicalStorageSystems": ["410500","410209"]
        },
    ],
    "total": 2,
    "nextToken": null
}
```


Pair status definitions

The following table describes the status displayed in CCI and the S-VOL access for the status.

Status shown in CCI	Description	S-VOL access
COPY	The storage system has accepted the **paircreate** CCI command. The P-VOL accepts read/write operations, but the S-VOLs do not accept read/write operations.	Read/write disabled.
PAIR	The volumes are paired. The S-VOL does not accept read/write operations.	Read/write disabled.
PFUL	While the volumes are paired ("PAIR" status), you exceeded the data pool threshold.	Read/write disabled.
PFUS	While the pair is split ("PSUS" status), you exceeded the data pool threshold.	Read/write enabled.
PSUS for P-VOLs SSUS for S-VOLs	The pair with the snapshot attribute is split. The S-VOL can accept read/write operations. The storage system records differential data between the P-VOL and S-VOLs so that you can immediately resynchronize the pair.	Read/write enabled. Can be mounted.
PSUP	The pair with the clone attribute is split. The S-VOL accepts read/write operations.	Read/write enabled. Can be mounted.

Status shown in CCI	Description	S-VOL access
RCPY	A Reverse Copy is in progress. The S-VOL does not accept read/write operations. The starting time of the copy depends on the number of pairs in your storage system. Only S-VOL differential data is copied to the P-VOL. The Update Copy operation is not performed during Reverse Copy or Quick Restore.	Read/Write disabled.
PSUE	The pair is suspended. The S-VOL does not accept read/write operations.	Read/Write disabled.

7

Monitoring resources

This module describes the capacity, hardware, and SNMP monitoring operations.

- Capacity monitoring resources
- Monitoring hardware resources
- SNMP resources

Capacity monitoring resources

Request	Method	URI	Role
Listing total number of capacity alerts for all storage systems on page 434	GET	/v1/monitoring/status/capacity	Storage administrator System administrator Security administrator
Displaying capacity alert details for a storage system on page 437	GET	/v1/monitoring/status/capacity/*resourceType*	Storage administrator System administrator Security administrator
Listing total number of capacity alerts for a storage system on page 436	GET	/v1/monitoring/status/*storageSystemId* /capacity	Storage administrator System administrator Security administrator
Displaying capacity alert details for a storage system on page 437	GET	/v1/monitoring/status/*storageSystemId* /capacity/*resourceType*	Storage administrator System administrator Security administrator

Listing total number of capacity alerts for all storage systems

You can display the total number of issued alerts for all storage systems.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/monitoring/status/capacity
```

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
    "totalComponentWiseCapacityAlerts": ,
    "capacityComponents":
```

```
        {
            "poolAlerts":
        }
    }
```

Parameter	Type	Description
totalComponentWiseCapacityAlerts	Integer	Total number of capacity components with alerts.
capacityComponents	List	List of capacity components with alerts.
poolAlerts	Boolean	Whether or not a pool in the storage system issued an alert.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Displaying capacity alert details for all storage systems

You can display the details of the capacity alerts that were issued for the storage systems.

HTTP request syntax (URI)

`GET https://`*`ipAddress`*`/v1/monitoring/status/capacity/`*`resourceType`*

Use pool as the *resourceType*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "capacityAlertInformationList": [
    {
      "storageSerialNumber": "",
      "storageNickname": "",
      "refCode": "",
      "resourceType": "",
      "timestamp": "",
      "description": "",
```

```
      "alertLevel": "",
      "resourceId": ""
    }
  ]
}
```

Parameter	Type	Description
storageSerialNumber	Integer	Storage system serial number.
storageNickname	String	Storage system name.
refCode	Integer	Alert reference code.
resourceType	String	Type of resource: pool.
timestamp	String	Timestamp of the alert.
description	String	Description of the alert.
alertLevel	String	Alert level: Warning or Critical.
resourceId	String	ID of the resource.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.115/v1/monitoring/status/capacity/pool
```

Listing total number of capacity alerts for a storage system

You can display the total number of capacity alerts that were issued for a specified storage system.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/monitoring/status/storageSystemId/capacity
```

Use the storage system ID as the *storageSystemId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "totalComponentWiseCapacityAlerts": ,
  "capacityComponents": {
    "poolAlerts":
  }
}
```

Parameter	Type	Description
totalComponentWiseCapacityAlerts	Integer	Total number of components with capacity alerts.
capacityComponents	List	List of capacity components with alerts, such as poolAlerts.
poolAlerts	Boolean	Whether or not a pool in the storage system issued an alert.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Displaying capacity alert details for a storage system

You can display the details of the capacity alerts for the specified storage system.

HTTP request syntax (URI)

`GET https://`*`ipAddress`*`/v1/monitoring/status/`*`storageSystemId`*`/capacity/`*`resourceType`*

Use the storage system ID as the *storageSystemId*.

Use pool as the *resourceType*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "capacityAlertInformationList": [
    {
      "storageSerialNumber": "",
      "storageNickname": "",
      "refCode": "",
      "resourceType": "",
      "timestamp": "",
      "description": "",
      "alertLevel": "",
      "resourceId": ""
    }
  ]
}
```

Parameter	Type	Description
storageSerialNumber	String	Storage system serial number.
storageNickname	String	Storage system name.
refCode	String	Alert reference code.
resourceType	String	Type of resource: pool.
timestamp	String	Timestamp of the alert.
description	String	Description of the alert.
alertLevel	String	Alert level: Warning or Critical.
resourceId	String	ID of the resource.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.113/v1/monitoring/status/capacity/pool
```

Monitoring hardware resources

Request	Method	URI	Role
Listing total number of hardware alerts for all storage systems on page 440	GET	/v1/monitoring/status/hardware	Storage administrator System administrator Security administrator
Displaying resource-specific hardware alerts for all storage systems on page 441	GET	/v1/monitoring/status/hardware/*resourceType*	Storage administrator System administrator Security administrator
Listing hardware alerts for a storage system on page 443	GET	/v1/monitoring/status/*storageSystemId* /hardware	Storage administrator System administrator Security administrator
Displaying resource-specific hardware alerts for a storage system on page 445	GET	/v1/monitoring/status/*storageSystemd* /hardware / *resourceType*	Storage administrator System administrator Security administrator
Listing disk information for all storage systems on page 447	GET	/v1/monitoring/status/hardware/disk	Storage administrator System administrator Security administrator
Listing disk information for a storage system on page 449	GET	/v1/monitoring/status/*storageSystemId* /hardware / disk	Storage administrator System administrator

Request	Method	URI	Role
			Security administrator

Listing total number of hardware alerts for all storage systems

You can display the total number of alerts and alert types that were issued for all storage systems. Alerts from disk, power supply, battery, fan, port, cache, memory, and processors are displayed.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/monitoring/status/hardware
```

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
    "totalComponentWiseHardwareAlerts": ,
    "hardwareComponents":
    {
        "diskAlerts": ,
        "powerSupplyAlerts": ,
        "batteryAlerts": ,
        "fanAlerts": ,
        "portAlerts": ,
        "cacheAlerts": ,
        "memoryAlerts": ,
        "processorAlerts":
    }
}
```

Parameter	Type	Description
totalComponentWiseHardwareAlerts	Integer	Total number of hardware alerts.
diskAlerts	Boolean	Whether there are any disk alerts.
powerSupplyAlerts	Boolean	Whether there are any power supply alerts.
batteryAlerts	Boolean	Whether there are any battery alerts.
fanAlerts	Boolean	Whether there are any fan alerts.
portAlerts	Boolean	Whether there are any port alerts.
cacheAlerts	Boolean	Whether there are any cache alerts.
memoryAlerts	Boolean	Whether there are any shared memory alerts.

Parameter	Type	Description
processorAlerts	Boolean	Whether there are any processor alerts.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example response

```
https://172.17.64.113/v1/monitoring/status/hardware
```

Example response

```
{
    "totalComponentWiseHardwareAlerts": 0,
    "hardwareComponents":
    {
        "diskAlerts": false,
        "powerSupplyAlerts": false,
        "batteryAlerts": false,
        "fanAlerts": false,
        "portAlerts": false,
        "cacheAlerts": false,
        "memoryAlerts": false,
        "processorAlerts": false
    }
}
```

Displaying resource-specific hardware alerts for all storage systems

You can display alerts for a specific hardware resource in all storage systems such as disk, power supply, battery, fan, port, cache, memory, and processor.

HTTP request syntax (URI)

`GET https://`*`ipAddress`*`/v1/monitoring/status/hardware/`*`resourceType`*

Use one of the following hardware components as the *resourceType*.

- disk
- powerSupply
- battery
- fan
- port
- cache
- memory
- processor

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
 "alertInformationList": [
   {
     "storageSerialNumber": "",
     "storageNickname": "",
     "refCode": "",
     "resourceType": "",
     "timestamp": "",
     "description": "",
     "alertLevel": ""
   }
  ]
}
```

Parameter	Type	Description
storageSerialNumber	Integer	Storage system serial number.
storageNickname	String	Storage system name.
refCode	Integer	Alert reference code.
resourceType	String	Type of resource. Valid values: disk, fan, battery, cache, processor, powerSupply, port, or memory.
timestamp	String	Timestamp of the alert.
description	String	Description of the alert.
alertLevel	String	Alert level: Warning or Critical.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.

Status code	HTTP name	Description
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Listing hardware alerts for a storage system

You can display alerts for different hardware components, such as the power supply, battery, fan, port, cache, memory, and processors.

The alerts are received from the storage system. There is one alert per component type, for a maximum of eight.

The alert clearance process runs every 20 minutes for each storage system that includes components with errors. Alerts are only cleared when all components of a given type with errors return to the normal state. The exception is disks, each of which can have alerts cleared, even if other disks have errors. Alerts for ports and processors are cleared together, so alerts are cleared only when all ports and processors are normal.

For example, if there are five fans with alerts in one storage system, they are cleared only when each and every fan alert is cleared. Disk alerts are cleared for individual disks.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/monitoring/status/storageSystemId/
hardware
```

Use the storage system ID as the *storageSystemId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "totalComponentWiseHardwareAlerts": ,
  "hardwareComponents": {
    "diskAlerts": ,
    "powerSupplyAlerts": ,
    "batteryAlerts": ,
    "fanAlerts": ,
    "portAlerts": ,
    "cacheAlerts": ,
    "memoryAlerts": ,
    "processorAlerts":
```

```
    }
}
```

Parameter	Type	Description
totalComponentWiseHardwareAlerts	Integer	Total number of hardware components with alerts.
diskAlerts	boolean	Whether there are any disk alerts.
powerSupplyAlerts	boolean	Whether there are any power supply alerts.
batteryAlerts	boolean	Whether there are any battery alerts.
fanAlerts	boolean	Whether there are any fan alerts.
portAlerts	boolean	Whether there are any port alerts.
cacheAlerts	boolean	Whether there are any cache alerts.
memoryAlerts	boolean	Whether there are any shared memory alert.
processorAlerts	boolean	Whether there are any processor alerts

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
    https://172.17.64.113/v1/monitoring/status/410209/hardware/
processor
```

Example response

```
    {
        "totalComponentWiseHardwareAlerts": 0,
        "hardwareComponents":
        {
            "diskAlerts": false,
            "powerSupplyAlerts": false,
            "batteryAlerts": false,
            "fanAlerts": false,
            "portAlerts": false,
```

```
            "cacheAlerts": false,
            "memoryAlerts": false,
            "processorAlerts": false
        }
    }
```

Displaying resource-specific hardware alerts for a storage system

You can display the alert notification details for a particular resource for a specified storage system, such as disk, power supply, battery, fan, port, cache, memory, and processor.

HTTP request syntax (URI)

`GET https://`*`ipAddress`*`/v1/monitoring/status/`*`storageSystemId`*`/hardware/`*`resourceType`*

Use the storage system ID as the *storageSystemId*.

Use one of the following resources as the *resourceType*.

- disk
- powerSupply
- battery
- fan
- port
- cache
- memory
- processor

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
 "alertInformationList": [
   {
     "storageSerialNumber": "",
     "storageNickname": "",
     "refCode": "",
     "resourceType": "",
     "timestamp": "",
     "description": "",
     "alertLevel": ""
   }
 ]
}
```

Parameter	Type	Description
storageSerialNumber	Integer	Storage system serial number.
storageNickname	String	Storage system name.
refCode	Integer	Alert reference code.
resourceType	String	Type of resource. Valid values: disk, fan, battery, cache, processor, powerSupply, port, or memory.
timestamp	String	Timestamp of the alert.
description	String	Description of the alert.
alertLevel	String	Alert level: Warning or Critical.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
    https://172.17.64.113/v1/monitoring/status/410209/hardware/
powerSupply
```

Example response

```
    {
        "totalComponentWiseHardwareAlerts": 0,
        "hardwareComponents":
        {
            "diskAlerts": false,
            "powerSupplyAlerts": false,
            "batteryAlerts": false,
            "fanAlerts": false,
            "portAlerts": false,
            "cacheAlerts": false,
            "memoryAlerts": false,
            "processorAlerts": false
```

```
        }
    }
```

Listing disk information for all storage systems

You can display the disk information for all storage systems.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/monitoring/status/hardware/disk
```

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "diskAlertInformationList": [
    {
      "storageSerialNumber": "",
      "storageNickname": "",
      "refCode": "",
      "resourceType": "",
      "timestamp": "",
      "description": "",
      "alertLevel": "",
      "resourceLocation": "",
      "diskSpec": {
        "diskType": "",
        "speed": ,
        "capacity": {
          "bytes":
        }
      }
    }
  ]
}
```

Parameter	Type	Description
storageSerialNumber	Integer	Storage serial number.
storageNickname	String	Storage system name.
refCode	Integer	Alert reference code.
resourceType	String	Type of resource.
timestamp	String	Timestamp of the alert.
description	String	Description of the alert.
alertLevel	String	Alert level: Warning or Critical.
resourceId	String	Resource ID.

Parameter	Type	Description
diskType	String	Disk Type.
speed	Integer	Disk speed.
bytes	Integer	Disk capacity.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.113/v1/monitoring/status/hardware/disk
```

Example response

```
{
  "diskAlertInformationList": [
    {
      "storageSerialNumber": "",
      "storageNickname": "",
      "refCode": "",
      "resourceType": "",
      "timestamp": "",
      "description": "",
      "alertLevel": "",
      "resourceLocation": "",
      "diskSpec": {
        "diskType": "",
        "speed": ,
        "capacity": {
          "bytes":
        }
      }
    }
  ]
}
```

Listing disk information for a storage system

You can display the disk information for the specified storage system.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/monitoring/status/storageSystemId/
hardware/disk
```

Use the storage system ID as the *storageSystemId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "diskAlertInformationList": [
    {
      "storageSerialNumber": "",
      "storageNickname": "",
      "refCode": "",
      "resourceType": "",
      "timestamp": "",
      "description": "",
      "alertLevel": "",
      "resourceLocation": "",
      "diskSpec": {
        "diskType": "",
        "speed": 0,
        "capacity": {
          "bytes": 0
        }
      }
    }
  ]
}
```

Parameter	Type	Description
storageSerialNumber	String	Storage system serial number.
storageNickname	String	Storage system name.
refCode	String	Alert reference code.
resourceType	String	Type of resource.
timestamp	String	Timestamp of the alert.
description	String	Description of the alert.
alertLevel	String	Alert level: Warning or Critical.
resourceLocation	String	ID for the resource.

Parameter	Type	Description
diskSpec	DiskSpec	Disk type, speed, and capacity of the disk.
diskType	String	Disk Type. Valid values: SATA, SSD, FMD, SAS, FMD DC2.
speed	Integer	Disk speed.
capacity	Size	Disk capacity.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.113/v1/monitoring/status/hardware/disk
```

Example response

```
{
  "diskAlertInformationList": [
    {
      "storageSerialNumber": "",
      "storageNickname": "",
      "refCode": "",
      "resourceType": "",
      "timestamp": "",
      "description": "",
      "alertLevel": "",
      "resourceLocation": "",
      "diskSpec": {
        "diskType": "",
        "speed": ,
        "capacity": {
          "bytes":
        }
      }
    }
```

```
    ]
}
```

SNMP resources

Request	Method	URI	Role
Listing SNMP Managers on page 451	GET	/v1/snmp-managers	Storage administrator System administrator Security administrator
Adding SNMP managers on page 453	POST	/v1/snmp-managers	System administrator
Updating an SNMP manager on page 455	POST	/v1/snmp-managers/*snmpMgrName*	System administrator
Deleting an SNMP Manager on page 458	DELETE	/v1/snmp-managers/*snmpMgrName*	System administrator

Listing SNMP Managers

You can display a list of SNMP managers.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/snmp-managers
```

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "snmpManagerInformationList": [
    {
      "name": "",
      "ipAddress": "",
      "username": "",
      "privacyProtocol": "",
      "privacyPassword": ,
      "authProtocol": "",
      "authPassword": ,
      "port":
    }
  ]
}
```

Pararmeter	Type	Description
name	String	The name of the virtual file server. Min = 1, max = 15.
ipAddress	String	IP address of the resource.
username	String	User name of the SNMP manager.
privacyProtocol	String	Privacy protocol for the SNMP manager. Valid values: DES, TRIPLE_DES, AES_128, OR NO_PRIV.
privacyPassword	String	Privacy password for the SNMP manager.
authProtocol	String	The SNMP authentication protocol: MD5, SHA, or NO_AUTH.
authPassword	String	Authentication password.
port	String	The ethernet port to which the IP address for the virtual file server is assigned. Min = 1, max = 65535.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Example request

```
https://172.17.64.111/v1/snmp-managers
```

Example response


```
{
  "snmpManagerInformationList": [
    {
      "name": "snmp-manager-1",
      "ipAddress": "172.17.91.22",
      "username": "kh",
      "privacyProtocol": "DES",
      "privacyPassword": null,
      "authProtocol": "MD5",
```

```
      "authPassword": null,
      "port": 162
    }
  ]
}
```

Adding SNMP managers

You can add SNMP managers so they can receive SNMP traps related to the monitored components of the registered storage system.

HTTP request syntax (URI)

`POST https://ipAddress/v1/snmp-managers`

Request structure

The request body structure is shown below:

```
{
  "snmpManagers": [
    {
      "name": "",
      "username": "",
      "ipAddress": "",
      "authProtocol": "",
      "authPassword": "",
      "privacyProtocol": "",
      "privacyPassword": "",
      "port": ""
    }
  ]
}
```

Parameter	Required	Type	Description
name	No	String	The name of the SNMP manager.
ipAddress	No	String	IP address of the resource.
username	No	String	User name of the SNMP manager.
privacyProtocol	No	String	Privacy protocol for the SNMP manager. Valid values: DES, TRIPLE_DES, AES_128, or NO_PRIV.
privacyPassword	No	String	Privacy password for the SNMP manager.
authProtocol	No	String	The SNMP authentication protocol: MD5, SHA, or NO_AUTH.
authPassword	No	String	Authentication password.
port	No	Integer	The SNMP port number in the range between 0 to 65535.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.

Parameter	Type	Description
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Updating an SNMP manager

You can update information for an SNMP manager so it receives SNMP traps related to the monitored components of the registered storage system.

HTTP request syntax (URI)

`POST https://`*`ipAddress`*`/v1/snmp-managers/`*`snmpMgrName`*

Use the SNMP manager name as the *snmpMgrName*.

Request structure

The request body structure is shown below:

```
{
  "username": "",
  "ipAddress": "",
  "authProtocol": "",
  "authPassword": "",
```

```
    "privacyProtocol": "",
    "privacyPassword": "",
    "port": ""
  }
```

Parameter	Required	Type	Description
ipAddress	No	String	IP address of the resource.
username	No	String	User name of the SNMP manager.
privacyProtocol	No	String	Privacy protocol for the SNMP manager. Valid values: DES, TRIPLE_DES, AES_128, or NO_PRIV.
privacyPassword	No	String	Privacy password for the SNMP manager.
authProtocol	No	String	The SNMP authentication protocol: MD5, SHA, or NO_AUTH.
authPassword	No	String	Authentication password.
port	No	Integer	The SNMP port number in the range between 0 to 65535.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Deleting an SNMP Manager

You can delete an SNMP manager.

HTTP request syntax (URI)

`DELETE https://ipAddress/v1/snmp-managers/snmpMgrName`

Use the SNMP manager name as the *snmpMgrName*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.

Parameter	Type	Description
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

8

System administration resources

This module describes the system administration operations.

- Account domain resources
- User management resources
- Getting a job
- Listing jobs

Account domain resources

Request	Method	URI	Role
Listing account domains on page 462	GET	/v1/security/account-domains	Storage administrator System administrator Security administrator
Getting an account domain on page 464	GET	/v1/security/account-domains/*id*	Storage administrator System administrator Security administrator
Adding an account domain on page 465	POST	/v1/security/account-domains/*id*	Security administrator
Updating an account domain on page 467	POST	/v1/security/account-domains/*id*	Security administrator
Deleting an account domain on page 469	DELETE	/v1/security/account-domains/*id*	Security administrator

Listing account domains

You can display account domains that have been added to Storage Advisor.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/security/account-domains
```

Request structure

Not applicable.

Response structure

```
{
  "accountDomains": [
    {
      "id": "",
      "domain": "",
      "username": "",
      "type": ""
    }
  ]
}
```

Parameter	Type	Description
id	String	The ID that is assigned to the domain.
domain	String	The name or address of the domain.
username	String	The user name that is being used to access the domain.
type	String	The domain type `LOCAL` or `ACTIVE DIRECTORY`.

Return codes

Status code	HTTP name	Description
200	OK	Success.
204	No content	The request was successful, but the response does not exist.
400	Bad request	Required HTTP header was not specified.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
412	Precondition failed	The server does not meet one of the preconditions that the requester put in the request.
503	Service unavailable	The server is currently unable to receive requests. Retry your request.
504	Gateway timeout	The request timed out waiting for a response. The Storage Advisor is not able to connect to the node.

Example request

```
GET https: //172.17.64.116/v1//security/account-domains
```

Example response

```
{
  "accountDomains": [
    {
      "id": "57503d78-3294-44c6-8c8a-08edd38a08be",
      "domain": "LOCAL",
      "username": "",
```

```
      "type": "LOCAL"
    }
  ]
}
```

Getting an account domain

You can display information of a specific account domain.

HTTP request syntax (URI)

`GET https://`*`ipAddress`*`/v1/security/account-domains/`*`domainId`*

Request structure

Not applicable.

Response structure

```
{
 "id": "",
 "domain": "",
 "username": "",
 "type": ""
}
```

Parameter	Type	Description
id	String	The ID that is assigned to the domain.
domain	String	The name or address of the domain.
username	String	The user name that is being used to access the domain.
type	String	The domain type (`LOCAL` or `ACTIVE DIRECTORY`).

Return codes

Status code	HTTP name	Description
200	OK	Success.
204	No content	The request was successful, but the response does not exist.
400	Bad request	Required HTTP header was not specified.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Status code	HTTP name	Description
412	Precondition failed	The server does not meet one of the preconditions that the requester put in the request.
503	Service unavailable	The server is currently unable to receive requests. Retry your request.
504	Gateway timeout	The request timed out waiting for a response. The Storage Advisor is not able to connect to the node.

Example request

```
GET https: //172.17.64.116/v1//security/account-domains/
20ee96fe-fb69-4f68-994f-a2fbffcea9fd
```

Example response

```
{
 "id": "20ee96fe-fb69-4f68-994f-a2fbffcea9fd",
 "domain": "hds.com",
 "username": "jdoe",
 "type": "ACTIVE_DIRECTORY"
}
```

Adding an account domain

You can add an account domain to Storage Advisor.

HTTP request syntax (URI)

```
POST https://ipAddress/v1/security/account-domains
```

Request structure

```
{
  "domain": "",
  "username": "",
  "password": ""
}
```

Parameter	Required	Type	Description
domain	Yes	String	The name or address of the domain.
username	Yes	String	The user name that will be used to access the domain.

Parameter	Required	Type	Description
password	Yes	String	The password that will be used to access the domain.

Response structure

```
{
 "id": "",
 "domain": "",
 "username": "",
 "type": ""
}
```

Parameter	Type	Description
id	String	The ID that is assigned to the domain.
domain	String	The name or address of the domain.
username	String	The user name that is used to access the domain.
type	String	The domain type (LOCAL or ACTIVE DIRECTORY).

Return codes

Status code	HTTP name	Description
200	OK	Success.
204	No content	The request was successful, but the response does not exist.
400	Bad request	Required HTTP header was not specified.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
409	Conflict	The specified resource type does not match the existing resource type.
412	Precondition failed	The server does not meet one of the preconditions that the requester put in the request.
503	Service unavailable	The server is currently unable to receive requests. Retry your request.

Status code	HTTP name	Description
504	Gateway timeout	The request timed out waiting for a response. The Storage Advisor is not able to connect to the node.

Example request

```
POST https: //172.17.64.116/v1//security/account-domains
{
  "domain": "hds.com",
  "username": "jdoe",
  "password": "test123"
}
```

Example response

```
{
 "id": "20ee96fe-fb69-4f68-994f-a2fbffcea9fd",
 "domain": "hds.com",
 "username": "jdoe",
 "type": "ACTIVE_DIRECTORY"
}
```

Updating an account domain

You can update the credentials that are used to access an account domain that has been added to Storage Advisor.

HTTP request syntax (URI)

`POST https://`*`ipAddress`*`/v1/security/account-domains/`*`domainId`*

Use the domain ID as the *domainId*.

Request structure

```
{
  "username": "jwei",
  "password": "newPassword"
}
```

Parameter	Required	Type	Description
username	Yes	String	The user name that will be used to access the domain.
password	Yes	String	The password that will be used to access the domain.

Response structure

```
{
 "id": "",
 "domain": "",
 "username": "",
 "type": ""
}
```

Parameter	Type	Description
id	String	The ID that is assigned to the domain.
domain	String	The name or address of the domain.
username	String	The user name that is used to access the domain.
type	String	The domain type (LOCAL or ACTIVE DIRECTORY).

Return codes

Status code	HTTP name	Description
200	OK	Success.
204	No content	The request was successful, but the response does not exist.
400	Bad request	Required HTTP header was not specified.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
409	Conflict	The specified resource type does not match the existing resource type.
412	Precondition failed	The server does not meet one of the preconditions that the requester put in the request.
503	Service unavailable	The server is currently unable to receive requests. Retry your request.
504	Gateway timeout	The request timed out waiting for a response. The Storage Advisor is not able to connect to the node.

Example request

```
POST https: //172.17.64.116/v1//security/account-domains/
20ee96fe-fb69-4f68-994f-a2fbffcea9fd
{
  "username": "jwei",
  "password": "newPassword"
}
```

Example response

```
{
 "id": "20ee96fe-fb69-4f68-994f-a2fbffcea9fd",
 "domain": "mcp.com",
 "username": "jwei",
 "type": "ACTIVE_DIRECTORY"
}
```

Deleting an account domain

You can remove an account domain from Storage Advisor.

HTTP request syntax (URI)

`DELETE https://`*`ipAddress`*`/v1/security/account-domains/`*`domainId`*

Use the domain ID as the *domainId*.

Request structure

Not applicable.

Response structure

Not applicable.

Return codes

Status code	HTTP name	Description
200	OK	Success.
204	No content	The request was successful, but the response does not exist.
400	Bad request	Required HTTP header was not specified.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.

Status code	HTTP name	Description
404	Not found	The specified resource ID is not valid or the resource does not exist.
409	Conflict	The specified resource type does not match the existing resource type.
412	Precondition failed	The server does not meet one of the preconditions that the requester put in the request.
503	Service unavailable	The server is currently unable to receive requests. Retry your request.
504	Gateway timeout	The request timed out waiting for a response. The Storage Advisor is not able to connect to the node.

Example request

```
DELETE https: //172.17.64.116/v1//security/account-domains/
20ee96fe-fb69-4f68-994f-a2fbffcea9fd
```

User management resources

Request	Method	URI	Role
Listing user groups on page 471	GET	/v1/security/account-domains/*id*/groups	Storage administrator System administrator Security administrator
Listing group mappings on page 472	GET	/v1/security/account-domains/*id*/group-mapping	Storage administrator System administrator Security administrator
Getting a group mappings on page 474	GET	/v1/security/account-domains/*id*/group-mapping/*mappingId*	Storage administrator System administrator

Request	Method	URI	Role
			Security administrator
Creating role mappings on page 476	POST	/v1/security/account-domains/*id*/group-mapping	Security administrator
Deleting group mappings on page 478	DELETE	/v1/security/account-domains/*id*/group-mapping/*mappingId*	Security administrator
Listing users on page 479	GET	/v1/security/account-domains/*id*/users	Storage administrator System administrator Security administrator
Getting users on page 480	GET	/v1/security/account-domains/*id*/users/*userid*	Storage administrator System administrator Security administrator
Updating users on page 482	POST	/v1/security/account-domains/*id*/users/*userid*	Security administrator

Listing user groups

You can display a list of all the user groups in the account domain.

HTTP request syntax (URI)

`GET https://ipAddress/v1/security/account-domains/domainId/groups`

Use the account domain ID as the *domainId*.

Request structure

Not applicable.

Response structure

```
{
  "groups": [
    ""
  ]
}
```

Parameter	Type	Description
groups	String	Groups in the account domain.

Return codes

Status code	HTTP name	Description
200	OK	Success.
204	No content	The request was successful, but the response does not exist.
400	Bad request	Required HTTP header was not specified.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
412	Precondition failed	The server does not meet one of the preconditions that the requester put in the request.
503	Service unavailable	The server is currently unable to receive requests. Retry your request.
504	Gateway timeout	The request timed out waiting for a response. The Storage Advisor is not able to connect to the node.

Example request

```
GET https: //172.17.64.116/v1/security/account-domains/20ee96fe-fb69-4f68-994f-a2fbffcea9fd/groups
```

Example response

```
[
   "admin": ""
]
```

Listing group mappings

You can display a list of all the user group mappings in Storage Advisor.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/security/account-domains/domainId/group-mappings
```

Use the account domain ID as the *domainId*.

Request structure

Not applicable.

Response structure

```
{
  "mappings": [
    {
      "id": "44c08be3-ba36-49eb-a104-48911a2815cb",
      "accountDomainId": "20ee96fe-fb69-4f68-994f-a2fbffcea9fd",
      "groupName": "admin",
      "userRole": "SECURITY_ADMIN"
    }
  ]
}
```

Parameter	Type	Description
id	Integer	ID
accountDomainId	Integer	ID of the domain.
groupName	String	Name of the domain.
userRole	String	Role to be assigned to the user group. Values include the System Administrator, Storage Administrator, and Security Administrator.

Return codes

Status code	HTTP name	Description
200	OK	Success.
204	No content	The request was successful, but the response does not exist.
400	Bad request	Required HTTP header was not specified.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
412	Precondition failed	The server does not meet one of the preconditions that the requester put in the request.
503	Service unavailable	The server is currently unable to receive requests. Retry your request.

Status code	HTTP name	Description
504	Gateway timeout	The request timed out waiting for a response. The Storage Advisor is not able to connect to the node.

Example request

```
GET https: //172.17.64.116/v1//security/account-domains/
44c08be3-ba36-49eb-a104-48911a2815cb/group-mappings
```

Example response

```
{
  "mappings": [
    {
      "id": "44c08be3-ba36-49eb-a104-48911a2815cb",
      "accountDomainId": "20ee96fe-fb69-4f68-994f-
a2fbffcea9fd",
      "groupName": "admin",
      "userRole": "SECURITY_ADMIN"
    }
  ]
}
```

Getting a group mappings

You can display role mappings in a particular user group.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/security/account-domains/domainId/group-
mappings/mappingId
```

Use the account domain ID as the *domainId*.

Use the group mapping ID for the *mappingId*.

Request structure

Not applicable.

Response structure

```
{
  "id": "",
  "accountDomainId": "",
  "groupName": "",
  "userRole": ""
}
```

Parameter	Type	Description
id	String	ID of the group mapping.
accountDomainId	String	ID of the domain.
groupName	String	Name of the domain.
userRole	String	Role to be assigned to the user group. Values include the System Administrator, Storage Administrator, and Security Administrator.

Return codes

Status code	HTTP name	Description
200	OK	Success.
204	No content	The request was successful, but the response does not exist.
400	Bad request	Required HTTP header was not specified.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
412	Precondition failed	The server does not meet one of the preconditions that the requester put in the request.
503	Service unavailable	The server is currently unable to receive requests. Retry your request.
504	Gateway timeout	The request timed out waiting for a response. The Storage Advisor is not able to connect to the node.

Example request

```
GET https: //172.17.64.116/v1//security/account-domains/
20ee96fe-fb69-4f68-994f-a2fbffcea9fd/group-mappings/44c08be3-
ba36-49eb-a104-48911a2815cb
```

Example response

```
{
  "id": "44c08be3-ba36-49eb-a104-48911a2815cb",
  "accountDomainId": "20ee96fe-fb69-4f68-994f-a2fbffcea9fd",
  "groupName": "admin",
  "userRole": "SECURITY_ADMIN"
}
```

Creating role mappings

You can create an user group and assign roles to the user group.

HTTP request syntax (URI)

`POST https://`*`ipAddress`*`/v1/security/account-domains/`*`domainId`*`/group-mappings`

Use the account domain ID as the *domainId*.

Request structure

```
{
  "groupName": "",
  "userRole": ""
}
```

Parameter	Required	Type	Description
groupName	Yes	String	Name of the group.
userRole	Yes	String	Role to be assigned to the user group. Values include the System Administrator, Storage Administrator, and Security Administrator.

Response structure

```
{
  "id": "",
  "accountDomainId": "",
  "groupName": "",
  "userRole": ""
}
```

Parameter	Type	Description
id	Integer	ID of the mapping group.
accountDomainId	Integer	ID of the domain.
groupName	String	Name of the domain.
userRole	String	Role to be assigned to the user group. Values include the System Administrator, Storage Administrator, and Security Administrator.

Return codes

Status code	HTTP name	Description
200	OK	Success.
204	No content	The request was successful, but the response does not exist.
400	Bad request	Required HTTP header was not specified.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
409	Conflict	The specified resource type does not match the existing resource type.
412	Precondition failed	The server does not meet one of the preconditions that the requester put in the request.
503	Service unavailable	The server is currently unable to receive requests. Retry your request.
504	Gateway timeout	The request timed out waiting for a response. The Storage Advisor is not able to connect to the node.

Example request

```
POST https://ipAddress/v1/security/account-domains/20ee96fe-
fb69-4f68-994f-a2fbffcea9fd/group-mappings
{
    "groupName": "admin",
    "userRole": "SECURITY_ADMIN"
}
```

Example response

```
{
  "id": "44c08be3-ba36-49eb-a104-48911a2815cb",
  "accountDomainId": "20ee96fe-fb69-4f68-994f-a2fbffcea9fd",
  "groupName": "admin",
  "userRole": "SECURITY_ADMIN"
}
```

Deleting group mappings

You can remove a role that was assigned to a user group.

HTTP request syntax (URI)

`DELETE https://`*`ipAddress`*`/v1/security/account-domains/`*`domainId`*`/group-mappings/`*`mappingId`*

Use the domain ID as the *domainId*.

Use the group mapping ID for the *mappingId*.

Request structure

Not applicable.

Response structure

Not applicable.

Return codes

Status code	HTTP name	Description
200	OK	Success.
204	No content	The request was successful, but the response does not exist.
400	Bad request	Required HTTP header was not specified.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
409	Conflict	The specified resource type does not match the existing resource type.
412	Precondition failed	The server does not meet one of the preconditions that the requester put in the request.
503	Service unavailable	The server is currently unable to receive requests. Retry your request.
504	Gateway timeout	The request timed out waiting for a response. The Storage

Status code	HTTP name	Description
		Advisor is not able to connect to the node.

Example request

```
DELETE https: //172.17.64.116/v1//security/account-domains/
57503d78-3294-44c6-8c8a-08edd38a08be/group-mappings/44c08be3-
ba36-49eb-a104-48911a2815cb
```

Listing users

You can display a list of users in the local domain.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/security/account-domains/domainId/users
```

Use the account domain ID as the *domainId*.

Request structure

Not applicable.

Response structure

```
{
  "users": [
    {
      "id": "",
      "accountDomainId": "",
      "loginName": ""
    }
  ]
}
```

Parameter	Type	Description
id	String	ID of the user in the account domain.
accountDomainId	String	ID of the account domain
loginName	String	Login name of the user.

Return codes

Status code	HTTP name	Description
200	OK	Success.
204	No content	The request was successful, but the response does not exist.

Status code	HTTP name	Description
400	Bad request	Required HTTP header was not specified.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
412	Precondition failed	The server does not meet one of the preconditions that the requester put in the request.
503	Service unavailable	The server is currently unable to receive requests. Retry your request.
504	Gateway timeout	The request timed out waiting for a response. The Storage Advisor is not able to connect to the node.

Example request

```
GET https: //172.17.64.116/v1//security/account-domains/
20ee96fe-fb69-4f68-994f-a2fbffcea9fd/users
```

Example response

```
{
  "users": [
    {
      "id": "b5d15f7f-3e2e-43c1-9734-c447cfb260f7",
      "accountDomainId": "20ee96fe-fb69-4f68-994f-
a2fbffcea9fd",
      "loginName": "jwei"
    }
  ]
}
```

Getting users

You can get details on a specific user in the domain.

HTTP request syntax (URI)

GET https://*ipAddress*/v1/security/account-domains/*domainId*/users/*userId*

Use the account domain ID as the *domainId*.

Use the user ID as the *userId*.

Request structure

Not applicable.

Response structure

```
{
  "id": "",
  "accountDomainId": "",
  "loginName": ""
}
```

Parameter	Type	Description
id	String	ID of the user in the account domain.
accountDomainId	String	ID of the account domain
loginName	String	Login name of the user.

Return codes

Status code	HTTP name	Description
200	OK	Success.
204	No content	The request was successful, but the response does not exist.
400	Bad request	Required HTTP header was not specified.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
412	Precondition failed	The server does not meet one of the preconditions that the requester put in the request.
503	Service unavailable	The server is currently unable to receive requests. Retry your request.
504	Gateway timeout	The request timed out waiting for a response. The Storage Advisor is not able to connect to the node.

Example request

```
GET https: //172.17.64.116/v1//security/account-domains/
20ee96fe-fb69-4f68-994f-a2fbffcea9fd/users/
b5d15f7f-3e2e-43c1-9734-c447cfb260f7
```

Example response

```
{
  "id": "b5d15f7f-3e2e-43c1-9734-c447cfb260f7",
  "accountDomainId": "20ee96fe-fb69-4f68-994f-a2fbffcea9fd",
  "loginName": "jwei"
}
```

Updating users

You can change the password of a user in the local domain.

HTTP request syntax (URI)

`POST https://`*`ipAddress`*`/v1/security/account-domains/`*`domainId`*`/users/`*`userId`*

Use the account domain ID as the *domainId*.

Use the User ID as the *userId*.

Request structure

```
{
  "password": ""
}
```

Parameter	Required	Type	Description
password	Yes	String	The user password.

Response structure

```
{
  "id": "",
  "accountDomainId": "",
  "loginName": ""
}
```

Parameter	Type	Description
id	String	ID of the user in the account domain.
accountDomainId	String	ID of the account domain
loginName	String	Login name of the user.

Return codes

Status code	HTTP name	Description
200	OK	Success.
204	No content	The request was successful, but the response does not exist.
400	Bad request	Required HTTP header was not specified.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
409	Conflict	The specified resource type does not match the existing resource type.
412	Precondition failed	The server does not meet one of the preconditions that the requester put in the request.
503	Service unavailable	The server is currently unable to receive requests. Retry your request.
504	Gateway timeout	The request timed out waiting for a response. The Storage Advisor is not able to connect to the node.

Example request

```
POST https://ipAddress/v1/security/account-domains/20ee96fe-
fb69-4f68-994f-a2fbffcea9fd/users/b5d15f7f-3e2e-43c1-9734-
c447cfb260f7
{
  “password”: "newpassword"
}
```

Example response

```
{
  "id": "b5d15f7f-3e2e-43c1-9734-c447cfb260f7",
  "accountDomainId": "20ee96fe-fb69-4f68-994f-a2fbffcea9fd",
  "loginName": "jdoe"
}
```

Getting a job

You can display information about a task that was submitted. This returns the information about who submitted the task, the time that the task was submitted, and the action taken by Storage Advisor.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/jobs/jobId
```

Use the ID of the job as the *jobId*.

Request structure

Not applicable.

Response structure

The response body structure is shown below:

```
{
  "jobId": "",
  "title":
   {
     "text": "",
     "messageCode": "",
     "parameters":
      {
      }
   },
   "user": "",
   "status": "",
   "startDate": ,
   "endDate": ,
   "parentJobId": ,
   "reports":
   [
   ],
   "links":
   [
      {
         "rel": "_self",
         "href": "/v1/jobs/jobId"
      }
   ],
   "tags":
   [
   ],
   "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.

Parameter	Type	Description
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	The operation is not authorized.
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.

Listing jobs

You can display information about submitted tasks. The information includes, who submitted the task, the time that the task was submitted, and the action taken by Storage Advisor. In a paginated response, if more than 100 jobs are in the system, this API call does not return all of the jobs. At the bottom of

the returned response is a link to another GET call you can make to retrieve the next page of jobs. Copy the href link that includes the next token and paste it in your Storage Advisor browser. Perform this step if you want to retrieve all the jobs in the system.

HTTP request syntax (URI)

```
GET https://ipAddress/v1/jobs
```

Request structure

Not applicable.

Response structure

```
{
  "jobs": [
    {
      "jobId": "",
      "title": {
        "text": "",
        "messageCode": "",
        "parameters": {}
      },
      "user": "",
      "status": "",
      "startDate": ,
      "endDate": ,
      "parentJobId": "",
      "reports": [
        {
          "reportMessage": {
            "text": "",
            "messageCode": "",
            "parameters": {
            }
          },
          "severity": "",
          "creationDate":
        },
      ]
    },
  ],
  "links": [
    {
      "rel": "_self",
      "href": "/v1/jobs/jobId"
    }
  ],
  "tags": [],
  "isSystem":
}
```

Parameter	Type	Description
jobId	String	ID of the job.

Parameter	Type	Description
text	String	Title of the task that is in progress.
messageCode	String	ID of the message.
parameters	Object	List of parameters and the values, as captured in the job message.
user	String	User who initiated the request.
status	String	Status of the job: `In_progress`, `Success`, `Success_With_Errors`, or `Failed`.
startDate	Long	Start date and time of the job (in Epoch time format).
endDate	Long	End date and time of the job (in Epoch time format).
parentJobId	String	ID of the job that spawned this job. If there is no parent job, this value is null.
reports	List	Messages associated with this job.
rel	String	Indicates the type of link for the `href` parameter. If the value is `_self`, it identifies a resource equivalent to the containing element.
href	String	URL of this job.
tags	Set	Any tags applied to this job.
isSystem	Boolean	Whether or not a system or a user has created a job. If the job is generated by a system, the system automatically sets it to `true`. If a user generates a job, the system sets it to `false`.

Return codes

Status code	HTTP name	Description
200	OK	Success.
201	Created	The server has started the operation.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
204	No content	The request was successful, but the response does not exist.
400	Bad request	Required HTTP header was not specified.
401	Unauthorized	The operation is not authorized.

Status code	HTTP name	Description
403	Forbidden	The server failed to authenticate the request.
404	Not found	The specified resource ID is not valid or the resource does not exist.
404	Not found	The specified storage system ID is not valid or the storage system does not exist.
409	Conflict	The specified resource type does not match the existing resource type.
412	Precondition failed	The server does not meet one of the preconditions that the requester put in the request.
503	Service unavailable	The server is currently unable to receive requests. Retry your request.
504	Gateway timeout	The request timed out waiting for a response. The Storage Advisor is not able to connect to the node.

Request example

```
https: //172.17.64.116/v1//jobs
```

Response example


```
{
  "jobs": [
    {
      "jobId": "ffa07b8a-e35d-4dc9-b054-232c6e4a9f51",
      "title": {
        "text": "Attach volumes to server.",
        "messageCode": "AttachVolumesToServerJobTitleMessage",
        "parameters": {}
      },
      "user": "sysadmin",
      "status": "SUCCESS",
      "startDate": 1456869156565,
      "endDate": 1456869229109,
      "parentJobId": "9d66fc27-473f-4d8b-8998-635da11f0260",
      "reports": [
        {
          "reportMessage": {
            "text": "Storage System 410033. Attaching volumes
Lun{volumeId=474, lun=1} to server 1.",
```

```
            "messageCode":
"AttachVolumesToServerPreStepMessage",
            "parameters": {
              "storageSystemId": "410033",
              "volumes": "Lun{volumeId=474, lun=1}",
              "serverId": 1
            }
          },
          "severity": "INFORMATION",
          "creationDate": 1456869156627
        },
      ]
    },
  ],
  "links": [
    {
      "rel": "_self",
      "href": "/v1/jobs/ffa07b8a-e35d-4dc9-b054-232c6e4a9f51"
    }
  ],
  "tags": [],
  "isSystem": false
}
```

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