

# Hitachi Ops Center Automator

11.0.2

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## REST API User and Reference Guide

Ops Center Automator is a software solution that provides the necessary tools to automate and simplify end-to-end storage processes, such as provisioning, for storage and data center administrators. This manual describes how to use the Ops Center Automator API.

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# Contents

<b>Preface.....</b>	<b>9</b>
Intended audience.....	9
Product version.....	9
Release notes.....	9
Referenced documents.....	9
Document conventions.....	10
Conventions for storage capacity values.....	11
Accessing product documentation.....	12
Getting help.....	12
Comments.....	12
<b>Chapter 1: About Hitachi Ops Center Automator API.....</b>	<b>13</b>
REST architecture.....	13
Hitachi Ops Center Automator API functionality.....	14
API prerequisites.....	14
Resources managed through the API.....	14
Identifying a resource.....	16
Supported HTTP methods .....	17
Security and authentication.....	18
Resource attributes.....	18
Input and output formats.....	21
Supported API resources .....	22
Common resource attributes .....	31
Query string .....	62
Using the query filter .....	65
Domain object convention .....	68
Using the output of an action object .....	69
Providing message responses to URI request errors.....	70
Requesting the status of an invoked action.....	71
Specifying collection information.....	73
Specifying pagination properties.....	73
Warning message format for failure to connect to the external server.....	74
<b>Chapter 2: Hitachi Ops Center Automator REST API use cases.....</b>	<b>75</b>
Use case reference table.....	75

Use cases for finding and managing services.....	79
Find service by service name.....	79
Get top 10 most frequently used services.....	81
Change service state to release.....	84
Change service state to maintenance.....	87
Delete a service by service name.....	91
Use cases for creating and submitting service requests.....	94
Create and submit service request (run immediately).....	94
Create and submit service request (schedule).....	99
Create and submit service request, then get the result after the task is completed.....	103
Get result by task ID after task completed.....	110
Use cases for finding and managing tasks.....	112
Find long-running tasks.....	112
Find tasks waiting for user input.....	115
Stop running all tasks by service name.....	117
Stop running a task by task ID.....	121
Archive completed tasks.....	125
Cancel all scheduled tasks by service name.....	129
Cancel scheduled task by task ID.....	133
Suspend all scheduled tasks by service name.....	137
Suspend a scheduled task by task ID.....	141
Resume all suspended tasks by service name.....	145
Resume a suspended task by task ID.....	149
Resubmit a task.....	152
<b>Chapter 3: Hitachi Ops Center Automator REST API command set ...</b>	<b>156</b>
Services.....	156
Getting a list of services.....	156
Selecting a service.....	160
Editing a service.....	163
Deleting a service.....	167
Getting a list of service actions.....	168
Preparing to submit a service.....	172
Submitting a service.....	175
Preparing to reset a service.....	179
Resetting the counter of a service.....	181
Preparing to release a service.....	183
Releasing a service.....	185
Preparing to change the configuration type of a service to maintenance...	188
Changing the configuration type of a service to maintenance.....	190
Preparing to disable a service.....	192

Disabling a service.....	194
Getting service help.....	197
Preparing to apply a service template.....	198
Applying a service template.....	201
Schedules.....	204
Getting a list of scheduled services.....	205
Selecting a targeted service schedule.....	208
Getting a list of scheduled actions .....	210
Preparing to cancel a scheduled service.....	213
Canceling a scheduled service.....	215
Preparing to suspend a scheduled service.....	218
Suspending a scheduled service.....	220
Preparing to resume a scheduled service.....	223
Resuming a scheduled service.....	225
Tasks .....	227
Getting a list of tasks .....	228
Selecting a task.....	231
Getting a list of task actions.....	233
Preparing to stop a task.....	236
Stopping a task.....	238
Preparing to force stop a task.....	240
Forcibly stopping a task.....	242
Preparing to resubmit a task.....	244
Resubmitting a task.....	247
Preparing to archive a task.....	251
Retrieving information to archive a task .....	253
Archiving a task.....	255
Preparing to rerun a task from the failed step .....	257
Rerunning a task from the failed step .....	259
Preparing to rerun a task after the failed step .....	261
Rerunning a task after the failed step .....	263
Updating a task .....	266
Preparing to respond to a task.....	269
Responding to a task .....	272
Task histories .....	274
Getting a list of task histories.....	275
Deleting task histories .....	278
Selecting a task history .....	280
Deleting a task history .....	282
Getting a list of task history actions .....	284
Property definitions.....	286

Getting a list of property definitions .....	286
Getting a property definition .....	289
Getting a list of property definitions actions .....	291
Property values.....	293
Getting a list of property values .....	293
Getting a property value.....	296
Editing a specified property value .....	298
Editing multiple instances of a property value .....	300
Getting a list of property values actions .....	304
Service groups .....	306
Getting a list of service groups .....	306
Creating a service group .....	308
Selecting a service group .....	311
Editing a service group .....	312
Deleting a service group.....	315
Getting a list of service group actions .....	317
Preparing to assign a service group to a user group with a role .....	319
Assigning a service group to a user group .....	321
Preparing to unassign a service group .....	324
Unassigning a service group .....	326
Service template.....	329
Getting a list of service templates .....	329
Selecting a service template .....	332
Deleting a service template .....	335
Getting a list of service template actions .....	336
Preparing to import a service template .....	339
Importing a service template .....	340
Preparing to export a service template .....	343
Exporting a service template .....	345
Getting service template help .....	346
Preparing to bind and run a service template .....	348
Binding and running a service template .....	350
Property information .....	353
Getting a list of property information .....	354
Property groups.....	358
Getting a list of property groups .....	358
Task logs .....	360
Getting a task log .....	360
Tag groups.....	363
Getting a list of tag groups.....	363
Tags.....	365

Getting a list of tags for a resource.....	366
External server connection.....	369
Getting a list of external server connections.....	370
Host.....	372
Getting a list of hosts .....	372
Storage systems.....	375
Getting a list of storage systems .....	375
Other resources.....	377
Getting user information .....	377
Getting the version information .....	378
<b>Appendix A: Reference information.....</b>	<b>380</b>
HTTP status codes .....	380
Using the log file for API troubleshooting.....	381
API resource map .....	381
<b>Appendix B: Service and content properties list.....</b>	<b>401</b>
Add host to cluster in vCenter service properties.....	401
Add host to cluster in vCenter service (edit).....	401
Add host to cluster in vCenter service (submit).....	411
Add host to cluster in vCenter service (task details) .....	421
Allocate fabric aware volumes and create datastore for ESX cluster .....	426
Allocate fabric aware volumes and create datastore for ESX cluster (edit).....	426
Allocate fabric aware volumes and create datastore for ESX cluster (submit).....	441
Allocate fabric aware volumes and create datastore for ESX cluster (task details) .....	455
Allocate fabric aware volumes with Configuration Manager service properties .....	460
Allocate fabric aware volumes with Configuration Manager (edit).....	460
Allocate fabric aware volumes with Configuration Manager (submit).....	473
Allocate fabric aware volumes with Configuration Manager (task details).	480
Allocate Volumes, Fabric, and Datastore for ESXi Host service properties.....	485
Allocate Volumes, Fabric, and Datastore for ESXi Host (edit).....	485
Allocate Volumes, Fabric, and Datastore for ESXi Host (submit).....	504
Allocate Volumes, Fabric, and Datastore for ESXi Host (task details).....	519
Allocate Volumes with 2DC Remote Replication service properties.....	523
Allocate Volumes with 2DC Remote Replication service (edit).....	524
Allocate Volumes with 2DC Remote Replication service (submit).....	563
Allocate Volumes with 2DC Remote Replication service (task details).....	598
Allocate volumes with Clone/Snapshot service properties .....	605
Allocate volumes with clone/snapshot service (edit).....	606

Allocate volumes with clone/snapshot service (submit).....	634
Allocate volumes with clone/snapshot service (task details).....	650
Allocate Volumes with Remote Replication (Global-Active Device) service properties.....	658
Allocate Volumes with Remote Replication (global-active device) (edit)....	658
Allocate Volumes with Remote Replication (global-active device) (submit).....	695
Allocate Volumes with Remote Replication (global-active device) (task details).....	727
Allocate volumes with Smart Provisioning service properties .....	734
Allocate Volumes with Smart Provisioning (edit).....	735
Allocate Volumes with Smart Provisioning (submit).....	754
Allocate Volumes with Smart Provisioning (task details).....	770
Clean up Online Migration Pair service properties.....	773
Clean up Online Migration Pair service properties (edit).....	774
Clean up Online Migration Pair service properties (submit).....	775
Clean up Online Migration Pair service properties (task details).....	776
Create Online Migration Pair service properties.....	785
Create Online Migration Pair (edit).....	786
Create Online Migration Pair (submit).....	809
Create Online Migration Pair (task details).....	826
Create Online Migration Pairs for Multiple Hosts service properties.....	831
Create Online Migration Pairs for Multiple Hosts (edit).....	831
Create Online Migration Pairs for Multiple Hosts (submit).....	850
Create Online Migration Pairs for Multiple Hosts (task details).....	865
Global-Active Device Setup service properties.....	868
Global-Active Device Setup (edit).....	868
Global-Active Device Setup (submit).....	880
Global-Active Device Setup (task details).....	891
Migrate Data for Online Migration Pair service properties.....	898
Migrate Data for Online Migration Pair (edit).....	898
Migrate Data for Online Migration Pair (submit).....	899
Migrate Data for Online Migration Pair (task details).....	900
Remove host from cluster in vCenter service properties.....	907
Remove host from cluster in vCenter service (edit).....	907
Remove host from cluster in vCenter service (submit).....	910
Remove host from cluster in vCenter service (task details) .....	913
<b>Appendix C: Notices.....</b>	<b>919</b>
Notices.....	919



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# Preface

This document describes how to use the Hitachi Ops Center Automator API.

## Intended audience

This document is intended for those who want to use the supplied representational state transfer (REST) API to manage resources and to integrate management operations with existing infrastructure management systems and applications.

To use the API, you must be familiar with the Hitachi Ops Center Automator concepts, terminology, and functionality. You should also have a basic understanding of web services and prerequisite knowledge of:

- XML
- JSON
- REST
- Programming language you will use for the application development or integration

## Product version

This document revision applies to Hitachi Ops Center Automator v11.0.2-00 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 available on the Hitachi Vantara documentation website: <https://docs.hitachivantara.com>.

## Referenced documents

Hitachi Ops Center Automator documents:

- *Hitachi Ops Center Automator User Guide*, MK-99AUT001







Hitachi Vantara Portal, <https://docs.hitachivantara.com>

## Document conventions

This document uses the following typographic conventions:

Convention	Description
<b>Bold</b>	<ul style="list-style-type: none"> <li>Indicates text in a window, including window titles, menus, menu options, buttons, fields, and labels. Example: Click <b>OK</b>.</li> <li>Indicates emphasized words in list items.</li> </ul>
<i>Italic</i>	<ul style="list-style-type: none"> <li>Indicates a document title or emphasized words in text.</li> <li>Indicates a variable, which is a placeholder for actual text provided by the user or for output by the system. Example: <pre>pairdisplay -g group</pre></li> </ul> <p>(For exceptions to this convention for variables, see the entry for angle brackets.)</p>
Monospace	Indicates text that is displayed on screen or entered by the user. Example: <code>pairdisplay -g oradb</code>
< > angle brackets	Indicates variables in the following scenarios: <ul style="list-style-type: none"> <li>Variables are not clearly separated from the surrounding text or from other variables. Example: <pre>Status-&lt;report-name&gt;&lt;file-version&gt;.csv</pre></li> <li>Variables in headings.</li> </ul>
[ ] 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 additional information.
	Tip	Provides helpful information, guidelines, or suggestions for performing tasks more effectively.
	Important	Highlights information that is essential to the completion of a task.
	Caution	Warns the user of adverse conditions and/or consequences (for example, disruptive operations, data loss, or a system crash).
	CAUTION	Warns the user of a hazardous situation that, if not avoided, could result in major or minor injury.
	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
1 exabyte (EB)	1,000 PB or $1,000^6$ bytes

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

Logical capacity unit	Value
1 block	512 bytes

Logical capacity unit	Value
1 cylinder	Mainframe: 870 KB Open-systems: <ul style="list-style-type: none"> <li>▪ OPEN-V: 960 KB</li> <li>▪ Others: 720 KB</li> </ul>
1 KB	1,024 (2 <sup>10</sup> ) bytes
1 MB	1,024 KB or 1,024 <sup>2</sup> bytes
1 GB	1,024 MB or 1,024 <sup>3</sup> bytes
1 TB	1,024 GB or 1,024 <sup>4</sup> bytes
1 PB	1,024 TB or 1,024 <sup>5</sup> bytes
1 EB	1,024 PB or 1,024 <sup>6</sup> bytes

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**Thank you!**

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# Chapter 1: About Hitachi Ops Center Automator API

Hitachi Ops Center Automator is a software solution that gives the necessary tools to automate and simplify end-to-end storage processes, such as provisioning, for storage and data center administrators. The building blocks of the product are prepackaged automation templates known as *Service Templates*. These preconfigured templates are customized to your specific environment and processes creating services that automate complex tasks such as resource provisioning. When configured, Ops Center Automator integrates with existing Hitachi Ops Center applications to automate common infrastructure management tasks by utilizing your existing infrastructure services.

The API is a representational state transfer (REST) interface for the administrative tasks available for managing Hitachi Ops Center Automator. The Ops Center Automator API is Cloud Data Management Interface (CDMI) compliant, which allows for easier integration with applications that make use of the CDMI standard.

The Ops Center Automator REST API use cases provide specific examples for running a number of typical tasks. Use these examples to help configure your operating environment.

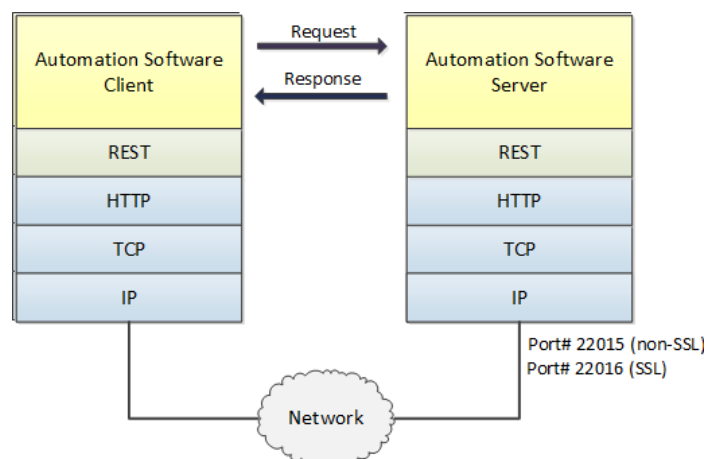
## REST architecture

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.

Server responses can either be in XML or JSON.

The following diagram shows a basic overview of a REST client-to-server interaction process.





**Note:** The default port for an API call is 22016 for SSL connections and 22015 for non-SSL connections.

## Hitachi Ops Center Automator API functionality

The Hitachi Ops Center Automator REST API gives easy integration of smart provisioning to other tools.

You can use the following API functions to support processing tasks for existing third-party tools or proprietary applications:

- Run and submit tasks through a POST
- Verify task status through a GET
- Edit service configurations through a PUT
- Deleting an existing service through a DELETE

In addition, you can manage services and task and also obtain user information.

## API prerequisites

Hitachi Ops Center Automator needs the following setup to be in place before use:

- All settings in the **Administration** tab of the GUI must be configured (for example: Connection Settings, System Settings, Storage Service Settings). For additional information see the *Hitachi Ops Center Automator User Guide*.
- A target service must be created.

## Resources managed through the API

Each entity that you can manage independently in the Automator API is referred to as a resource. The Automator API allows configuration and management access to the following resources:

Resource	Domain	Description
Service	Objects	A service is an instance of a service template that is configured to process tasks, such as provisioning. Services can be classified by usage and type.
Schedule	Objects	Services can be run immediately or on a schedule.
Task	Objects	A task is the running instance of a service and is generated when you run a service. When you submit a service, Automator creates a corresponding task that you can monitor, start, stop, and archive.

Resource	Domain	Description
TaskHistory	Objects	The task history is a log of run tasks.
PropertyDefinition	Objects	<p>A service is an instance of a service template that is configured to perform tasks, such as provisioning. Services can be classified by usage and type.</p> <p>Property definitions that are shared among multiple services are called shared service properties. These properties can include the host name, user ID, and password. As an example, property definitions can be shared across multiple services (such as storage provisioning for third-party server).</p> <p><b>Note:</b> Property definitions are created and added through Service Builder, which is part of the Hitachi Ops Center Automator tool set.</p>
PropertyValue	Objects	A property value is a value of the service property or property definition. For example, "SB2_user" can be the property value of the property definition "user ID".
ServiceGroup	Objects	A service group is a resource group (such as services and connection destinations) used for controlling access to product features. Resource groups are used in combination with user groups, to control access permission. By assigning resource groups to user groups, you can allow access to functions in Hitachi Ops Center Automator.
Service template	Objects	A service template is a preconfigured template that is customized to your environment for creating automated services.
Property information	Objects	The property information includes IDs that can also be shared across multiple services or tasks.
Property group	Objects	A property group includes information for a group of properties for a service or task.
Task log	Objects	A task log shows the log information for a specified task.
Tag group	Objects	A tag group shows the list of tags that are bound to a group.
Tag	Objects	A tag is a keyword or phrase that help classify and organize content by function, status, or other categories for resource type such as a service, task, or ServiceTemplate.

Resource	Domain	Description
External server connection	Objects	An external server connection is the connection type for the Hitachi Ops Center Automator server.
Host	Objects	The host gives the ID for external server connection.
UserInfo	Other	User information shows information for the user that is currently logged in.
VersionInfo	Other	The Version information is the current Automator version information.

## Identifying a resource

resources

To identify a resource to manage, you enter a URL to a resource domain in a web browser.

All URLs for the Ops Center Automator API have the following base or root, uniform resource identifier (URI):

```
https://host:port/Automation/version/domain
```

Where:

- *host* is the virtual IP address or resolvable host name of the Ops Center Automator server, followed by a colon
- *port* is the port number used for connection



**Note:** The default port number is 22015 (for non-SSL communication) and 22016 (for SSL communication)

- *Automation* is the base name of the collection of Ops Center Automator APIs
- *version* is the version of the Ops Center Automator API
- *domain* is where the resources exist. Most Ops Center Automator resources are found in the *objects* domain

For example:

```
https://172.17.35.70:22016/Automation/v1/objects/
```

Depending on the management action you are performing, the base URI can then be followed by a collection or resource URL.



For example:

- Collection URL

```
https://host:port/Automation/v1/objects/Services
```

- Resource URL

```
https://host:port/Automation/v1/objects/Services/id
```

- Resource URL with action

```
https://host:port/Automation/v1/objects/Services/id/actions
```



**Important:** Each resource has a unique, static instance identifier. If you must address a fixed set of resources, use this identifier.

## 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:

### GET

Retrieves information about an individual resource or retrieves a list of resources of a given type. GET is a synchronous operation.

### POST

Adds (creates) a resource for collections (for example creating a service group or archiving a task). This method also runs an action resource (for example, canceling a service or suspending a schedule).

You must 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 is an asynchronous operation.

### PUT

Edits a resource.

When editing a resource, supply values only for the attributes that you want to change. Attributes that are not specified in the request body remain unchanged.

PUT is an asynchronous operation.

### DELETE

Deletes a resource.

DELETE is an asynchronous operation.

POST, PUT, and DELETE are asynchronous operations. When a request is submitted for one of these methods, you can only tell whether the action is successful, but you cannot know when the operation is completed.

## Security and authentication

Each API request must be authenticated: You must successfully prove your identity to make requests and get responses to those requests.

The Ops Center Automator API uses basic access authentication and authentication by an HSSO token. This allows a user to authenticate with a simple user name and password using HTTP Basic Authentication Access and leverage a simple user name bind to an LDAP server for authentication.

```
WWW-Authenticate: HSSO hssso token
Authorization: HSSO hssso token
```

The Ops Center Automator supports both HTTP and HTTPS protocols. For security purposes, use the HTTPS protocol.

The Ops Center Automator API also uses bearer token with OpenID connect authentication when it works with the Hitachi Ops Center Common Services.

```
Authorization: Bearer bearer_token
```

## Resource attributes

Resources share common attributes and structure and can be found in the request header and body, and the response header and body.

Attributes are specified by name/value pairs that describe or define the resources in the PUT (modify or edit) and POST (create or add) methods. These name and value pairs are included in the body of the message.

For example, the URL specification to change the description name of "Oracle ASM" to "Oracle ASM for Sales Department" for a service with an `instanceID` of 633:

```
PUT https://172.17.9.36:22016/Automation/v1/objects/Services/633
```

with body attributes of:

```
{
  "instanceID" : 633,
  "name" : "Oracle ASM",
  "description" : "Oracle ASM for Sales Department",
  "category" : "Storage Services/Provisioning",
  "createTime" : "2014-01-08T14:34:20.000+09:00",
  "modifyTime" : "2014-01-08T14:55:17.000+09:00",
  "serviceGroupName" : "All Resources",
  "serviceGroupID" : 2
}
```

## Request header

The request header must contain the following information:

```
Host: host-address
Accept: {application/xml | application/json}
Accept-Language: en
User-Agent: user-agent
Content-Type: {application/xml | application/json}
```

The following table lists the required attributes of the request header for all resources.



**Note:** The PUT and POST methods need a Content-Type header.

Header	Description	Supported value	Default
Accept	Media-Type* expected by a response	application/json, xml, multipart/form-data**, or text/html**	*/* (json)
Accept-Language	The localization character string expected by the response data.	en (English) or ja (Japanese) only	en
Content-Type	Media-Type* of a request body	application/json, xml, or application/octet-stream**	application/json
X-HTTP-Method-Override	Call a different method from the specified method.  Use when PUT, DELETE, or POST are not supported either by proxy or client mounting.  Priority is given to <code>_method</code> .	PUT, DELETE, or POST	No default value
Authorization	Specify the authentication information.	HSSO <i>hssso-token</i> , Basic <i>user information</i> , or Bearer <i>bearer-token</i>	No default value

Header	Description	Supported value	Default
<b>Notes:</b>			
* Only UTF-8 is supported as a character code.			
** Only a specific URL is effective.			

### Response header

The response header must contain the following:

```
Content-Type: {application/xml | application/json}
```

The following table lists the required elements of the response header common to all resources:

Header	Description	Default
Cache-Control	Performs cache-control on a GET request.	--
Content-Type	Media-Type of the response data.	application/json
Language	The localization character string of the response data.	en
Content-disposition	Defines an attachment.	--
Location	Redirects the recipient to a location other than the Request-URI for completion of the request or identification of a new resource.	--
WWW-Authenticate	Shows the accepted authentication method.	--
Warning	The status of the API server cannot be determined.	

### Response job

For responses with the `invoke` action, the job response tracks the status of the request and returns the following:

```
{
  "instanceID":,
  "state":,
```

```

"created":,
"updated":,
"completed":,
"affectedResource":[],
"result":,
"resultType":
}

```

The modified URL is provided under `AffectedResources`.

## Input and output formats

When you create/add (POST) or modify/edit (PUT) a resource through the API, you can use JSON (the default format) or XML to specify the resource attributes. When you retrieve (GET) information about a resource, the response is returned as JSON unless you specify XML.

All responses returned through the API are UTF-8 encoded. All request bodies you create for input to the API must also be UTF-8 encoded.

In a JSON request or response body:

- Attributes are name/value pairs. For example, the name/value pair that corresponds to the status attribute of a schedule is:

```
"status": "waiting"
```

- A list of resources is represented by a name/value pair, where the name is the name of the attribute used to identify each resource and the value is a comma-separated list of the resource identifiers. For example, the response body for the access permissions for a resource group can include the following:

```
"accessPermission" : [ "View", "Execute", "Develop", "Modify", "Admin" ]
```

- For a PUT (modify/edit) request, specify only the attributes that you want to change. If you specify an attribute without a value, you will blank out or empty any existing content for that attribute.
- If you are coding your programs/scripts in Python (as are the supplied example files), specify:
  - string entries in quotes
  - number entries without quotes
  - Boolean entries as either `True` or `False` (case sensitive) without quotes



**Note:** JSON translates Boolean `True` or `False` to lower case (`true` or `false`) in its responses. Follow the syntax rules for the language you are using to write your programs and scripts.

## Supported API resources

The following table lists all the resources supported by the Ops Center Automator API.



**Note:** For additional information on roles, see the *Hitachi Ops Center Automator User Guide*.

**Table 1 Service**

Request	Method	URI	Minimum Role
<a href="#">Getting a list of services (on page 156)</a>	GET	Automation/v1/objects/Services	Submit
<a href="#">Selecting a service (on page 160)</a>	GET	Automation/v1/objects/Services/{id}	Submit
<a href="#">Editing a service (on page 163)</a>	PUT	Automation/v1/objects/Services/{id}	Submit
<a href="#">Deleting a service (on page 167)</a>	DELETE	Automation/v1/objects/Services/{id}	Modify
<a href="#">Getting a list of service actions (on page 168)</a>	GET	Automation/v1/objects/Services/{id}/actions	Submit
<a href="#">Preparing to submit a service (on page 172)</a>	GET	Automation/v1/objects/Services/{id}/actions/submit	Submit
<a href="#">Submitting a service (on page 175)</a>	POST	Automation/v1/objects/Services/{id}/actions/submit/invoke	Submit
<a href="#">Preparing to reset a service (on page 179)</a>	GET	Automation/v1/objects/Services/{id}/actions/reset	Modify
<a href="#">Resetting the counter of a service (on page 181)</a>	POST	Automation/v1/objects/Services/{id}/actions/reset/invoke	Modify
<a href="#">Preparing to release a service (on page 183)</a>	GET	Automation/v1/objects/Services/{id}/actions/release	Modify
<a href="#">Releasing a service (on page 185)</a>	POST	Automation/v1/objects/Services/{id}/actions/release/invoke	Modify

Request	Method	URI	Minimum Role
<a href="#">Preparing to change the configuration type of a service to maintenance (on page 188)</a>	GET	Automation/v1/objects/Services/{id}/actions/maintenance	Modify
<a href="#">Changing the configuration type of a service to maintenance (on page 190)</a>	POST	Automation/v1/objects/Services/{id}/actions/maintenance/invoke	Modify
<a href="#">Preparing to disable a service (on page 192)</a>	GET	Automation/v1/objects/Services/{id}/actions/disable	Modify
<a href="#">Disabling a service (on page 194)</a>	POST	Automation/v1/objects/Services/{id}/actions/disable/invoke	Modify
<a href="#">Getting service help (on page 197)</a>	GET	Automation/v1/objects/Services/{id}/actions/detailhelp	Submit
<a href="#">Preparing to apply a service template (on page 198)</a>	GET	Automation/v1/objects/Services/{id}/actions/applyTemplate	Modify
<a href="#">Applying a service template (on page 201)</a>	POST	Automation/v1/objects/Services/{id}/actions/applyTemplate/invoke	Submit

Table 2 Schedule

Request	Method	URI	Minimum Role
<a href="#">Getting a list of scheduled services (on page 205)</a>	GET	Automation/v1/objects/Schedules	Submit
<a href="#">Selecting a targeted service schedule (on page 208)</a>	GET	Automation/v1/objects/Schedules/{id}	Submit
<a href="#">Getting a list of scheduled actions (on page 210)</a>	GET	Automation/v1/objects/Schedules/{id}/actions	Submit

Request	Method	URI	Minimum Role
<a href="#">Preparing to cancel a scheduled service (on page 213)</a>	GET	Automation/v1/objects/Schedules/{id}/actions/cancel	Submit
<a href="#">Canceling a scheduled service (on page 215)</a>	POST	Automation/v1/objects/Schedules/{id}/actions/cancel/invoke	Submit
<a href="#">Preparing to suspend a scheduled service (on page 218)</a>	GET	Automation/v1/objects/Schedules/{id}/actions/suspend	Submit
<a href="#">Suspending a scheduled service (on page 220)</a>	POST	Automation/v1/objects/Schedules/{id}/actions/suspend/invoke	Submit
<a href="#">Preparing to resume a scheduled service (on page 223)</a>	GET	Automation/v1/objects/Schedules/{id}/actions/resume	Submit
<a href="#">Resuming a scheduled service (on page 225)</a>	POST	Automation/v1/objects/Schedules/{id}/actions/resume/invoke	Submit

Table 3 Task

Request	Method	URI	Minimum Role
<a href="#">Getting a list of tasks (on page 228)</a>	GET	Automation/v1/objects/Tasks	Submit
<a href="#">Selecting a task (on page 231)</a>	GET	Automation/v1/objects/Tasks/{id}	Submit
<a href="#">Getting a list of task actions (on page 233)</a>	GET	Automation/v1/objects/Tasks/{id}/actions	Submit
<a href="#">Preparing to stop a task (on page 236)</a>	GET	Automation/v1/objects/Tasks/{id}/actions/stop	Submit
<a href="#">Stopping a task (on page 238)</a>	POST	Automation/v1/objects/Tasks/{id}/actions/stop/invoke	Submit
<a href="#">Preparing to force stop a task (on page 240)</a>	GET	Automation/v1/objects/Tasks/{id}/actions/forcestop/	Submit



Request	Method	URI	Minimum Role
<a href="#">Forcibly stopping a task (on page 242)</a>	POST	Automation/v1/objects/Tasks/{id}/actions/forcestop/invoke	Submit
<a href="#">Preparing to resubmit a task (on page 244)</a>	GET	Automation/v1/objects/Tasks/{id}/actions/resubmit	Submit
<a href="#">Resubmitting a task (on page 247)</a>	POST	Automation/v1/objects/Tasks/{id}/actions/resubmit/invoke	Submit
<a href="#">Guide to archiving a task (on page 251)</a>	DELETE	Automation/v1/objects/Tasks/{id}	Modify
<a href="#">Retrieving information to archive a task (on page 253)</a>	GET	Automation/v1/objects/Tasks/{id}/actions/archive	Modify
<a href="#">Archiving a task (on page 255)</a>	POST	Automation/v1/objects/Tasks/{id}/actions/archive/invoke	Modify
<a href="#">Preparing to rerun a task from the failed step (on page 257)</a>	GET	Automation/v1/objects/Tasks/{id}/actions/rerunStart	Submit
<a href="#">Rerunning a task from the failed step (on page 259)</a>	POST	Automation/v1/objects/Tasks/{id}/actions/rerunStart/invoke	Submit
<a href="#">Preparing to rerun a task after the failed step (on page 261)</a>	GET	Automation/v1/objects/Tasks/{id}/actions/rerunStepStart	Submit
<a href="#">Rerunning a task after the failed step (on page 263)</a>	POST	Automation/v1/objects/Tasks/{id}/actions/rerunStepStart/invoke	Submit
<a href="#">Updating a task (on page 266)</a>	PUT	Automation/v1/objects/Tasks/{id}	Submit
<a href="#">Preparing to respond to a task (on page 269)</a>	GET	Automation/v1/objects/Tasks/{id}/actions/response	Submit
<a href="#">Responding to a task (on page 272)</a>	POST	Automation/v1/objects/Tasks/{id}/actions/response/invoke	Submit

**Table 4 Task history**

Request	Method	URI	Minimum Role
<a href="#">Getting a list of task histories (on page 275)</a>	GET	Automation/v1/objects/TaskHistories	Submit
<a href="#">Deleting task histories (on page 278)</a>	DELETE	Automation/v1/objects/TaskHistories	Modify
<a href="#">Selecting a task history (on page 280)</a>	GET	Automation/v1/objects/TaskHistories/{id}	Submit
<a href="#">Deleting a task history (on page 282)</a>	DELETE	Automation/v1/objects/TaskHistories/{id}	Modify
<a href="#">Getting a list of task history actions (on page 284)</a>	GET	Automation/v1/objects/TaskHistories/{id}/actions	Submit

**Table 5 Property Definition**

Request	Method	URI	Minimum Role
<a href="#">Getting a list of property definitions (on page 286)</a>	GET	Automation/v1/objects/PropertyDefinitions	Submit
<a href="#">Getting a property definition (on page 289)</a>	GET	Automation/v1/objects/PropertyDefinitions/{id}	Submit
<a href="#">Getting a list of property definitions actions (on page 291)</a>	GET	Automation/v1/objects/PropertyDefinitions/{id}/actions	Submit

**Table 6 Property Value**

Request	Method	URI	Minimum Role
<a href="#">Getting a list of property values (on page 293)</a>	GET	Automation/v1/objects/PropertyValues	Submit

Request	Method	URI	Minimum Role
<a href="#">Getting a property value (on page 296)</a>	GET	Automation/v1/objects/PropertyValues/{id}	Submit
<a href="#">Editing a specified property value (on page 298)</a>	PUT	Automation/v1/objects/PropertyValues/{id}	Modify
<a href="#">Editing multiple instances of a property value (on page 300)</a>	PUT	Automation/v1/objects/PropertyValues	Modify
<a href="#">Getting a list of property values actions (on page 304)</a>	GET	Automation/v1/objects/PropertyValues/{id}/actions	Submit

Table 7 Service group

Request	Method	URI	Minimum Role
<a href="#">Getting a list of service groups (on page 306)</a>	GET	Automation/v1/objects/ServiceGroups	Submit
<a href="#">Creating a service group (on page 308)</a>	POST	Automation/v1/objects/ServiceGroups	Admin
<a href="#">Selecting a service group (on page 311)</a>	GET	Automation/v1/objects/ServiceGroups/{id}	Submit
<a href="#">Editing a service group (on page 312)</a>	PUT	Automation/v1/objects/ServiceGroups/{id}	Admin
<a href="#">Deleting a service group (on page 315)</a>	DELETE	Automation/v1/objects/ServiceGroups/{id}	Admin
<a href="#">Getting a list of service group actions (on page 317)</a>	GET	Automation/v1/objects/ServiceGroups/{id}/actions	Submit
<a href="#">Preparing to assign a service group to a user group with a role (on page 319)</a>	GET	Automation/v1/objects/ServiceGroups/{id}/actions/assign	Admin and User management

Request	Method	URI	Minimum Role
<a href="#">Assigning a service group to a user group (on page 321)</a>	POST	Automation/v1/objects/ServiceGroups/{id}/actions/assign/invoke	Admin and User management
<a href="#">Preparing to unassign a service group (on page 324)</a>	GET	Automation/v1/objects/ServiceGroups/{id}/actions/unassign	Admin and User management
<a href="#">Unassigning a service group (on page 326)</a>	POST	Automation/v1/objects/ServiceGroups/{id}/actions/unassign/invoke	Admin and User management

Table 8 Service template

Request	Method	URI	Minimum Role
<a href="#">Getting a list of service templates (on page 329)</a>	GET	Automation/v1/objects/ServiceTemplates	Modify
<a href="#">Selecting a service template (on page 332)</a>	GET	Automation/v1/objects/ServiceTemplates/{id}	Modify
<a href="#">Deleting a service template (on page 335)</a>	DELETE	Automation/v1/objects/ServiceTemplate/{id}	Develop
<a href="#">Getting a list of service template actions (on page 336)</a>	GET	Automation/v1/objects/ServiceTemplates/{id}/actions	Modify
<a href="#">Preparing to import a service template (on page 339)</a>	GET	Automation/v1/services/ServiceTemplates/actions/import	Develop
<a href="#">Importing a service template (on page 340)</a>	POST	Automation/v1/services/ServiceTemplates/actions/import/invoke	Develop
<a href="#">Preparing to export a service template (on page 343)</a>	GET	Automation/v1/objects/ServiceTemplates/{id}/actions/export	Submit
<a href="#">Exporting a service template (on page 345)</a>	POST	Automation/v1/objects/ServiceTemplates/{id}/actions/export/invoke	Develop

Request	Method	URI	Minimum Role
<a href="#">Getting service template help (on page 346)</a>	GET	Automation/v1/objects/ServiceTemplates/{id}/actions/detailhelp	Modify
<a href="#">Preparing to bind and run a service template (on page 348)</a>	GET	Automation/v1/objects/ServiceTemplates/{id}/actions/bind	Modify
<a href="#">Binding and running a service template (on page 350)</a>	POST	Automation/v1/objects/ServiceTemplates/{id}/actions/bind/invoke	Modify

Table 9 Property information

Request	Method	URI	Minimum Role
<a href="#">Getting property information (on page 354)</a>	GET	Automation/v1/objects/PropertyInformations	Submit

Table 10 Property group

Request	Method	URI	Minimum Role
<a href="#">Getting a list of property groups (on page 358)</a>	GET	Automation/v1/objects/PropertyGroups	Submit

Table 11 Task log

Request	Method	URI	Minimum Role
<a href="#">Getting a task log (on page 360)</a>	GET	Automation/v1/objects/TaskLogs	Submit

Table 12 Tag group

Request	Method	URI	Minimum Role
<a href="#">Getting a list of tag groups (on page 363)</a>	GET	Automation/v1/objects/TagGroups	Submit

Table 13 Tag

Request	Method	URI	Minimum Role
<a href="#">Getting a list of tags for a resource (on page 366)</a>	GET	Automation/v1/objects/Tags	Submit

Table 14 External server connection

Request	Method	URI	Minimum Role
<a href="#">Getting a list of external server connections (on page 370)</a>	GET	Automation/v1/objects/ExternalServerConnections	Submit

Table 15 Host

Request	Method	URI	Minimum Role
<a href="#">Getting a list of hosts (on page 372)</a>	GET	Automation/v1/objects/Hosts	Submit

Table 16 Storage systems

Request	Method	URI	Minimum Role
<a href="#">Getting a list of storage systems (on page 375)</a>	GET	Automation/v1/objects/StorageSystems	Submit

Table 17 Other

Request	Method	URI	Minimum Role
<a href="#">Getting user information (on page 377)</a>	GET	Automation/v1/user	Submit
<a href="#">Getting the version information (on page 378)</a>	GET	Automation/v1/configuration/version	Submit

## Common resource attributes

The API responses present the following set of Cloud Data Management Interface (CDMI)-based attributes that provide hierarchical reference for the request.

### Service

Attribute	Type	Description	HQL::filter applicable?
instanceID	long	Instance identifier	Y
name	string	Service display name. Internationalization (i18n) and localization (i10n) of name is supported.	Y
description	string	Description of the resource	Y
tags	string	Category (tag) information, listed as comma-separated values (csv)	N
serviceTemplateName	string	Service template name which the service is based on.	Y
createTime	ISO8601String	Creation date and time of the service	Y
modifyTime	ISO8601String	Updated date and time of the service	Y
serviceState	enum	Status of the service. Possible values are: <ul style="list-style-type: none"> <li>▪ debug</li> <li>▪ test</li> <li>▪ release</li> <li>▪ disabled</li> <li>▪ maintenance</li> </ul>	Y
serviceGroupName	string	Name of service group to which the service belongs.	Y

Attribute	Type	Description	HQL::filter applicable?
iconURL	URLString	Icon image of the URL	N
vendorName	string	Display name of the vendor. Internationalization (i18n) and localization (i10n) of name is supported.	Y
version	string	Version of the service template	Y
lastSubmitTime	ISO8601String	Date and timestamp of the last submitted login time for a user.	Y
favorite	Boolean	Returns <code>True</code> if the service is in the list of favorites of the logged-in user.	Y
failedCount	int	Number of failed tasks	Y
completedCount	int	Number of successful tasks	Y
lastFailedTime	ISO8601String	The time at which a task that runs this service last failed	Y
resetTime	ISO8601String	Time at which the counter was reset	Y
executedCount	int	Number of finished (failed or successful) tasks	Y
latest	Boolean	Returns <code>True</code> if the service uses a latest template.	Y
imageURL	URLString	Absolute path information for ImageURL.	N
supportedScheduleType	enum	Schedule types supported by the service. The types	Y



Attribute	Type	Description	HQL::filter applicable?
		are a subset of those supported by the template that was used to create the service. Values are listed as comma-separated values. Possible values are: <ul style="list-style-type: none"> <li>▪ immediate</li> <li>▪ schedule</li> <li>▪ recurrence</li> </ul>	
supportedActionType	string	List of supported actions (such as "forciblyStop" or "retry") of task	Y
submitCount	int	Number of times this service was submitted.	Y
serviceSpecification Version	string	Version of the service template definition schema	N
serviceTemplateID	long	ID of the template that was used to create this service	Y
serviceGroupID	long	ID of the service group to which this service belongs	Y

### Schedule

Attribute	Type	Description	HQL::filter applicable?
instanceID	long	ID of the instance of the task	Y
name	string	Task name	Y

Attribute	Type	Description	HQL::filter applicable?
submitter	string	Name of the user who submitted the task	Y
status	enum	Status of a fixed run schedule. This the state that generates a task. Possible values are: <ul style="list-style-type: none"> <li>▪ Under execution - This state does not generate a task.</li> <li>▪ Completion - Indicates running (schedule is being run)</li> <li>▪ Complete - Completed schedule.</li> </ul>	Y
scheduleType	enum	Type of schedule. Possible values are: <ul style="list-style-type: none"> <li>▪ immediate</li> <li>▪ schedule</li> <li>▪ recurrence</li> </ul>	Y
createTime	ISO8601String	Submit date and time of schedule	Y
modifyTime	ISO8601String	Date and time that the task was modified.	Y
description	string	Description of submitted task	Y
scheduleStartTime	ISO8601String	Start date and time of scheduled or recurring task	Y

Attribute	Type	Description	HQL::filter applicable?
recurrenceInterval	enum	Interval type of recurring task. Possible values are: <ul style="list-style-type: none"> <li>▪ daily</li> <li>▪ weekly</li> <li>▪ monthly</li> </ul>	Y
recurrenceMinutes	int	Valid only if <code>daily</code> is specified at <code>recurrenceInterval</code> . Specify the time interval in minutes. Valid values are 60,120,180,240,360,480,720,1440. When omitted, 1440 is assumed.	N
recurrenceDayOfWeek	string	Interval of weekly job by day of the week. Comma-separated values are 1 (Sunday) to 7 (Saturday).	N
recurrenceDayOfMonth	string	Recurrence of monthly job by month. Comma-separated values are 1 (January) to 12 (December).	N
recurrenceLastDayOfMonth	Boolean	Specify whether to run a task on the last day of the month.	Y
recurrenceStartDate	ISO8601String	Start date of recurring task	Y
recurrenceTime	string	Start time of recurring task.	Y

Attribute	Type	Description	HQL::filter applicable?
serviceState	enum	Status of service. Possible values are: <ul style="list-style-type: none"> <li>▪ debug</li> <li>▪ test</li> <li>▪ release</li> <li>▪ maintenance</li> </ul>	Y
serviceID	long	ID of service	Y

### Task

Attribute	Type	Description	HQL::filter applicable?
instanceID	long	ID instance of the task	Y
name	string	Name of the task	Y
status	enum	Status of the task. Possible values are: <ul style="list-style-type: none"> <li>▪ failed</li> <li>▪ completed</li> <li>▪ canceled</li> <li>▪ inProgressTerminating</li> <li>▪ inProgressWithError</li> <li>▪ waitingForInput</li> <li>▪ inProgress</li> <li>▪ suspended</li> <li>▪ waiting</li> <li>▪ longRunning</li> </ul>	Y
startTime	ISO8601String	Start date and time of the task	Y
completionTime	ISO8601String	End date and time of the task	Y

Attribute	Type	Description	HQL::filter applicable?
scheduledStartTime	ISO8601String	Scheduled date and time of the task.	Y
submitter	string	Name of the user who submits the task	Y
submitTime	ISO8601String	Date and time of the task.	Y
modifyTime	ISO8601String	Date and time the task was last updated.	Y
serviceState	enum	State of the service to which this task belongs. Possible values are: <ul style="list-style-type: none"> <li>▪ debug</li> <li>▪ test</li> <li>▪ release</li> <li>▪ maintenance</li> <li>▪ buildDebug</li> </ul>	Y
scheduleType	enum	Schedule type of the task. Possible values are: <ul style="list-style-type: none"> <li>▪ immediate</li> <li>▪ schedule</li> <li>▪ recurrence</li> </ul>	Y
description	string	Description of the task, provided by the user who submits the task.	Y
serviceName	string	Service display name. Internationalization (i18n) and localization (i10n) of name is supported.	Y

Attribute	Type	Description	HQL::filter applicable?
tags	string	Category (tag) information listed as comma-separated values	N
recurrenceInterval	enum	Interval type of recurring task. Possible values are: <ul style="list-style-type: none"> <li>▪ daily</li> <li>▪ weekly</li> <li>▪ monthly</li> </ul>	Y
recurrenceTime	string	Exec time of day for recurrence task	Y
recurrenceStartDate	ISO8601String	Start date of recurring task	Y
serviceGroupName	string	Service group to which the task belongs. The name must be the same as the service group that is associated with the service to which the task belongs.	Y
toDo	Boolean	A flag that the task marks as to-do.	Y
notes	string	Additional information regarding the task.	Y
stepStartTime	ISO8601String	Start time of a long-running step.	Y
supportedActionType	string	List of supported actions (such as "forciblyStop" or "retry") of task	Y
serviceTemplateID	long	ID of the service template that was used to run the task.	Y

Attribute	Type	Description	HQL::filter applicable?
scheduleID	long	Definitions (schedule) for the corresponding task.	Y
serviceGroupID	long	ID of the service group to which the task belongs. The ID must be the same as that of the service group that is associated with the service to which the task belongs.	Y
serviceID	long	ID of the service to which the task belongs.	Y

### Task history

Attribute	Type	Description	HQL::filter applicable?
instanceID	long	ID of the task history instance	Y
name	string	Name of the task	Y
submitter	string	Name of the user who submitted the task	Y
serviceName	string	Service name associated with the task.	Y
tags	string	Category information	Y
scheduleType	enum	Schedule type of the task. Possible values are: <ul style="list-style-type: none"> <li>▪ immediate</li> <li>▪ schedule</li> <li>▪ recurrence</li> </ul>	Y

Attribute	Type	Description	HQL::filter applicable?
scheduledStartTime	ISO8601String	Scheduled date and time of the task	Y
startTime	ISO8601String	Actual start date and time of the task	Y
completionTime	ISO8601String	End date and time of the task	Y
stepStartTime	ISO8601String	Step start time of the task	Y
recurrenceInterval	enum	Interval type. Possible values are: <ul style="list-style-type: none"> <li>▪ daily</li> <li>▪ weekly</li> <li>▪ monthly</li> </ul>	Y
recurrenceMinutes	int	Valid only if daily is specified at <code>recurrenceInterval</code> . Specify the time interval in minutes. Valid values are 60,120,180,240,360,480,720,1440. When omitted, 1440 is assumed.	N
recurrenceDayOfWeek	string	Interval of weekly job, as <code>DayOfWeek</code> (1:Sun to 7:Sat), csv.	N
recurrenceDayOfMonth	string	Interval of monthly job, run specified <code>DayOfMonth</code> , csv.	N
executeLastDayOfMonth	Boolean	Returns <code>True</code> , run on the last day of the month.	Y
recurrenceTime	string	Start time of recurring task	Y
archiveTime	ISO8601String	Date and time the task was archived	Y



Attribute	Type	Description	HQL::filter applicable?
taskID	long	Task identifier	Y
submitTime	ISO8601String	Date and time of the task was created	Y
recurrenceStartDate	ISO8601String	Start date of the recurring task.	Y
status	enum	Status of the task. Possible values are: <ul style="list-style-type: none"> <li>▪ waiting</li> <li>▪ holding</li> <li>▪ inprogress</li> <li>▪ awaiting response</li> <li>▪ abnormal end</li> <li>▪ suspended</li> <li>▪ canceled</li> <li>▪ completed</li> <li>▪ failed</li> </ul>	Y
description	string	Description of the task.	Y
serviceState	enum	State of the service to which this task belongs. Possible values are: <ul style="list-style-type: none"> <li>▪ test</li> <li>▪ release</li> <li>▪ maintenance</li> <li>▪ buildDebug</li> </ul>	Y
toDo	Boolean	The to-do flag that is applied to the task	Y
notes	string	Additional information for task.	Y

Attribute	Type	Description	HQL::filter applicable?
serviceGroupName	string	Service group to which the task belongs. The name must be the same as the service group that is associated with the service to which the task belongs.	Y
serviceGroupID	long	ID of the service group to which the task belongs. The ID is the same as that of the service group that is associated with the service to which the task belongs.	Y

#### Property definition

Attribute	Type	Description	HQL::filter applicable?
instanceID	long	ID of the instance.	Y
keyName	string	Key name of the property. The name must be in ASCII format and can be up to 128 characters long.	Y
displayName	string	Display name of the property.  Internationalization (i18n) and localization (i10n) of name is supported.	N  <b>Note:</b> Localized string cannot be filtered.
defaultValue	string	Default value of the property.	Y

Attribute	Type	Description	HQL::filter applicable?
type	enum	Type of the property. Possible values are: <ul style="list-style-type: none"> <li>▪ boolean</li> <li>▪ integer</li> <li>▪ string</li> <li>▪ double</li> <li>▪ timestamp</li> <li>▪ password</li> <li>▪ list</li> <li>▪ file</li> </ul>	Y
visibility	enum	Access control (or visibility) for a service property. Possible values are: <ul style="list-style-type: none"> <li>▪ exec</li> <li>▪ work</li> <li>▪ config</li> </ul> If the property is set to <code>exec</code> , run parameters for submitting tasks are visible to users with the Submit role. If the property is set to <code>work/config</code> , configuration parameters are visible only to users with the Modify role.	Y
scope	enum	Scope of the property. Possible values are: <ul style="list-style-type: none"> <li>▪ share</li> <li>▪ local</li> </ul> If the property value is set to <code>share</code> , the property can be	Y

Attribute	Type	Description	HQL::filter applicable?
		shared with other service instances. If the value is set to <code>local</code> , the property cannot be shared.	
description	string	Description of the property. Internationalization (i18n) and localization (i10n) of name is supported.  This value can be localized through <code>resource.properties</code> .	N <b>Note:</b> A localized string cannot be filtered.
mode	enum	Mode attribute of the property. Possible values are: <ul style="list-style-type: none"> <li>▪ in</li> <li>▪ out</li> <li>▪ inout</li> </ul> in is used for <code>submit/config</code> . out for <code>taskdetail</code>	Y
required	Boolean	If <code>True</code> , make sure that the property is specified during the submit action.	Y
maxLength	integer	Maximum length for a string property.	Y
minLength	integer	Minimum length for a string property.	Y
minValue	string	Minimum value for a numeric property.	Y
maxValue	string	Maximum value for a numeric property.	Y

Attribute	Type	Description	HQL::filter applicable?
pattern	string	Regular expression pattern for validate string/password property.	Y
valueList	string	List of values shown as comma-separated values (CSV).	Y
propertyGroupName	string	Property group name.	Y
validationScript	string	Validates function for input property, in Javascript. An API call can be used to verify the input through this function.  Function (propertyValue, language):string. Returns error message if a value is not valid. Otherwise, returns nothing.	N
readOnly	Boolean	Returns <code>True</code> if the property is locked or hidden.	N
hidden	Boolean	Returns <code>True</code> if the property is hidden.	N
reference	Boolean	Whether the value of the property is referring other property values.	N
serviceTemplateID	long	ID of the related service template	Y

## Property value

Attribute	Type	Description	HQL::filter applicable?
instanceID	long	ID of the instance.	Y
type	enum	Type of the property. Possible values are: <ul style="list-style-type: none"> <li>▪ boolean</li> <li>▪ integer</li> <li>▪ string</li> <li>▪ double</li> <li>▪ timestamp</li> <li>▪ password</li> <li>▪ list</li> <li>▪ file</li> </ul>	Y
keyName	string	Key name of the property. The name must be in ASCII format and can be up to 128 characters long.	Y
value	string	Current value of the property.	Y
readOnly	Boolean	Returns <code>True</code> if the property is locked or hidden	Y
hidden	Boolean	Returns <code>True</code> if the property is hidden	Y
serviceID	long	Service identifier of the resource.	Y
scheduleID	long	Schedule identifier of the resource.	Y
taskID	long	Task identifier of the resource.	Y

**Service group**

Attribute	Type	Description	HQL::filter applicable?
instanceID	long	ID of the Instance.	Y
objectID	string	Group identifier of the resource.	Y
name	string	Service group name (name can be up to 62 characters long)	Y
description	string	Description (name can be up to 79 characters long).	Y

**User group**

Attribute	Type	Description	HQL::filter applicable?
instanceID	string	A user group's ID	N
applicationType	string	Product name	N
deviceType	string	Unit type	N
deviceNumber	string	Unit number	N
name	string	User group name	N
description	string	Description of a user group	N
groupType	string	Type of group Note: For a built-in user-group, Automator shows as "Builtin"	N
distinguishedName	string	A distinctive secondary name	N
domainName	string	Name of the domain	N
role	IRoleVO	User group role	N

**User info**

Attribute	Type	Description	HQL::filter applicable?
userName	string	User name	N
accessPermission	string[ ]	Access permissions associated with the user	N
fullName	string	Full user name	N
description	string	User description	N
email	string	User email address	N
resourceGroup	ResourceGroup[ ]	Access permissions associated with the user for each resource group	N
logonTime	ISO8601String	Contains the last logon date/time of the user	N

**Resource group**

Attribute	Type	Description	HQL::filter applicable?
instanceID	string	Resource group ID instance	N
name	string	Resource group name	N
description	string	Description of the resource group	N
accessPermission	string[ ]	Access permissions associated with the user of a resource group	N



**Version info**

Attribute	Type	Description	HQL::filter applicable?
productName	string	The product name	N
productVersion	string	The product version	N
apiVersion	string	The API version	N

**ServiceTemplate**

Attribute	Type	Description	HQL::filter applicable?
instanceID	long	The instance ID	N
keyName	string	The service template key name (ASCII max 64 length)	N
displayName	string	The service template display name (can be i18n/i10n, max 64 length)	N
iconURL	URLString	The URL string	Y
vendorID	string	The vendor ID (FQDN-like style identifier)	N
version	string	The version of the service template	N
vendorName	string	The display name of the vendor, can be i18n/i10n	N
tags	string	The list of tag names for the template applied.	Y
serviceSpecification Version	string	Version of the service template definition schema	N
createTime	List of tag names the template applied.	The registered date time of the service template	N

Attribute	Type	Description	HQL::filter applicable?
modifyTime	ISO8601String	The updated date time of the service template	N
description	string	The description of the service template, short version	N
releaseState	enum	The release status of the service template archive. Possible values are: <ul style="list-style-type: none"> <li>▪ debug</li> <li>▪ release</li> </ul>	N
latest	boolean	This is the latest version of the service template. It is only set for a released service.	N
imageUrl	URLString	The image URL for the overview-image	Y
supportedScheduleType	enum	Support schedule types that the Service template can apply. Possible values are: <ul style="list-style-type: none"> <li>▪ immediate</li> <li>▪ schedule</li> <li>▪ recurrence</li> </ul>	N
supportedActionType	string	List of supported actions (such as "forciblyStop" or "retry") of task	Y
needVUP	boolean	The template with services that is waiting to apply this version	N (the system -- unidentified)

Attribute	Type	Description	HQL::filter applicable?
componentOutdated	boolean	The template is waiting to create a new version and is currently using an outdated component.	N (the system -- unidentified)
usedServices	int	The number of services being used by the template	N
usedTemplates	int	The number of templates being used	N

### Property information

Attribute	Type	Description	HQL::filter applicable?
instanceID	long	The instance ID	N
keyName	string	The key name of the property (ASCII, max 128 length)	N
displayName	string	The display name of the property ( i18n/ i18n)	Y <b>Note:</b> Localized string cannot be filtered.
defaultValue	string	The default value of the property, defined in a service template	N
value	string	The current value of the property	N
type	enum	Type of property. Possible values are: <ul style="list-style-type: none"> <li>▪ boolean</li> <li>▪ integer</li> <li>▪ string</li> <li>▪ double</li> <li>▪ timestamp</li> </ul>	N

Attribute	Type	Description	HQL::filter applicable?
		<ul style="list-style-type: none"> <li>▪ password</li> <li>▪ list</li> <li>▪ file</li> </ul>	
visibility	enum	<p>Visibility of the property that represents access control for a service property. Possible values are:</p> <ul style="list-style-type: none"> <li>▪ exec</li> <li>▪ work</li> <li>▪ config</li> </ul> <p>exec parameter is visible for submit user on submit/task details. config parameter is only visible for expert user.</p>	N
scope	enum	<p>The scope of the property. Possible values are:</p> <ul style="list-style-type: none"> <li>▪ local</li> <li>▪ share</li> </ul> <p>Shared property will share with different service instance.</p>	N
description	string	<p>The description of the property. This value can be localize through resource properties.</p>	Y <b>Note:</b> Localized string cannot be filtered.
mode	enum	<p>Mode attribute of the property. Possible values are:</p> <ul style="list-style-type: none"> <li>▪ in</li> <li>▪ out</li> <li>▪ inout</li> </ul>	N

Attribute	Type	Description	HQL::filter applicable?
		in is used for submit/config. out for taskdetail.	
required	boolean	Returns True, it is required that the property be specified during the submit action.	N
maxLength	int	The max length for string based property	N
minLength	int	The min length for string based property	N
minValue	string	The min value for numeric property	N
maxValue	string	The max value for numeric property	N
pattern	string	The "string"/"password" property [ regular expression pattern for validate ]	N
valueList	string	The CSV list of value, in "List" type	N
propertyGroupName	string	The Property Group name	N
validationScript	string	The validate function for input property, in javascript. API calls can verify their input through the function.  Function(propertyValue, language):string. Return error message if value is not valid. Otherwise, return nothing.	Y

Attribute	Type	Description	HQL::filter applicable?
readOnly	boolean	Returns <code>True</code> if the property is locked or hidden	Y
hidden	boolean	Returns <code>True</code> if the property is hidden	Y
reference	boolean	This represents the value defined as a variable. It replaces the referred value. PUT for the value will be ignored. GUI will display this value as read-only.	Y
serviceTemplateID	long	The related service template	N
serviceID	long	The related service	N
taskID	long	The related taskID	N
scheduleID	long	The related schedule	N

### PropertyGroup

Attribute	Type	Description	HQL::filter applicable?
keyName	string	The identifier name of the property group	N
displayName	string	The user friendly name of the property group	N
description	string	The description of the group	N
ordinal	int	The ordinal of the group. <b>Note:</b> The service window will display by the order.	N

Attribute	Type	Description	HQL::filter applicable?
validationScript	string	This is the validate function for input property, in javascript. API calls can verify their input through the function. Function(propertyValue[ ], language):string[ ]. Return error messages as string array. if value is not valid. Otherwise, return nothing.	N
display	enum	List of windows that the property group uses as a display property. Possible values are: <ul style="list-style-type: none"> <li>▪ submit</li> <li>▪ config</li> <li>▪ taskdetail</li> </ul>	N
configViewURL	URLString	UI information for the group.	N
configEditURL	URLString	UI information for the group.	N
submitViewURL	URLString	UI information for the group.	N
submitEditURL	URLString	UI information for the group.	N
taskDetailURL	URLString	UI information for the group.	N

**ResponseInput**

Attribute	Type	Description	HQL::filter applicable?
dialogText	string	Body of input response dialog box	N
labelButton0	string	Choice	N
labelButton1	string	Choice	N
labelButton2	string	Choice	N
labelButton3	string	Choice	N
labelButton4	string	Choice	N
labelButton5	string	Choice	N
labelButton6	string	Choice	N
labelButton7	string	Choice	N
labelButton8	string	Choice	N
labelButton9	string	Choice	N
screenURL	string	Relative path to start custom UI	N
taskID	long	The taskID	N

**TaskLog**

Attribute	Type	Description	HQL::filter applicable?
instanceID	long	The instanceID	N
text	string	The text	N
totalSize	long	The total size of a task log (Byte)	N
readSize	long	The size of the acquired task log (Byte)	N
lineCount	long	The number of lines of the acquired task log	N



Attribute	Type	Description	HQL::filter applicable?
offset	long	The offset specified at the time of acquisition (Byte)	N
reverse	boolean	Returns <code>True</code> if you used the offset as a terminal point	N

### Tag

Attribute	Type	Description	HQL::filter applicable?
instanceID	long	The instanceID	N
name	string	The tag name (max length = 256)	N
tagGroupID	long	The group ID for the Tag	

### TagGroup

Attribute	Type	Description	HQL::filter applicable?
instanceID	long	ID of the instance	N
name	string	The tag group name (max length = 256)	N
tags	long	The list of tag names, as CSV	Y

### ExternalServer Connection

Attribute	Type	Description	HQL::filter applicable?
instanceID	long	The instance ID.	N
name	string	The external server connection name.	N

Attribute	Type	Description	HQL::filter applicable?
createTime	ISO8601String	The time the connection was created.	N
modifyTime	ISO8601String	The time the connection was last modified.	N
productName	string	The product name that operates with DeviceManager/vCenter.	N
protocol	string	The access protocol (for every product) and the current support condition for http and https .	N
ipAddress	string	The IP Address (v4, v6) or hostname.	N
port	integer	The port number.	N
userID	string	The user ID used for the connection.	N
password	string	The user password of userID. <b>Note:</b> The password is not returned at the time of acquisition and is not updated during a null period. In addition, "" is specified when clearing a password.	Y
status	enum	State of the connection. Possible values are: <ul style="list-style-type: none"> <li>▪ success</li> <li>▪ error</li> <li>▪ unknown</li> </ul>	N

Attribute	Type	Description	HQL::filter applicable?
active	boolean	Status flag of linked HRpM in the case of Device Manager.	N
connectedTime	ISO8601String	The last connected time.	N
useProxy	boolean	Returns True if you use proxy.	N
proxyHost	string	Returns the host name or IP address of proxy if you use proxy.	N
proxyPort	integer	Returns the port number if you use proxy. If not, this attribute is not shown.	N
proxyAuthenticate	enum	Returns the proxy authentication type (basic or digest) if you use proxy. If not, "none" is returned.	N
proxyUser	string	Returns the user ID if you use proxy.	N

## Host

Attribute	Type	Description	HQL::filter applicable?
instanceID	string	Instance identifier	N
hostName	string	The host name acquired from	N
hostID	long	The host ID acquired from Device Manager	N
wwn	string	The WWN acquired from Device Manager	N

Attribute	Type	Description	HQL::filter applicable?
wwnNickname	string	The WWN nickname acquired from Device Manager	N
iscsiName	string	The iSCSI name acquired from Device Manager	N
ipAddress	string	The IP address info acquired from Device Manager	N
operatingSystem	string	The operating system info acquired from Device Manager	N
capacityInKb	long	The capacity in Kb info acquired from Device Manager	N
cluster	string	The cluster info acquired from Device Manager	N
model	string	The model info acquired from Device Manager	N
hostType	string	The type info acquired from Device Manager	N
fileServerType	string	The file server type info acquired from Device Manager	N
deviceManagerName	string	The Device Manager name info acquired from Device Manager.	N

Attribute	Type	Description	HQL::filter applicable?
displayName	string	The name displayed for a host. <b>Note:</b> This is usually same value as the <code>hostName</code> . This also shows the ":Device Manager name" behind the host name.	N
hostInfoID	long	The ID of the host	N
externalServerConnectionID	long	The <code>instanceID</code> of the connection information on Device Manager	N

### StorageSystem

Attribute	Type	Description	HQL::filter applicable?
instanceID	string	Instance identifier	Y
storageArrayID	long	Unique ID of Device Manager for the storage device.	Y
name	string	Name of the storage device	Y

Attribute	Type	Description	HQL::filter applicable?
displayName	string	Display name of the storage device. <b>Note:</b> This is usually the same value as the name of the storage device. However, if there is more than one storage device with the same name on the list, it is not differentiated in the window. So if the name is duplicated, the Device Manager name is added after the storage device name.	Y
storageSystemInfoID	long	ID of the StorageSystemInfo	Y
externalServerConnectionID	long	The instanceID of the connection to Device Manager.	Y

## Query string

The query string describes a resource request from the client side and shows information for controlling the format of the response.

The following table describes and lists the values for the supported parameters of a query string:

Parameter	Description	Value	Default	Range	Target
HQL::filter	Perform filtering on a specified column and conditions.	Specify query filter separately.	N/A	N/A	GET Collection

Parameter	Description	Value	Default	Range	Target
HQL::offset	Specify the beginning line offset to acquire. offset=pageSize*(page-1)	0,1,2,...	0	0 to 2147483647	GET Collection
HQL::count	Specify the maximum number of the objects included in a response.  When 0 is specified, acquire all the objects.  When the total of count and offset exceeds 2147483647, acquire the object from the value specified as the offset to the 2147483647th.	0,1,2,3,...	100	0 to 2147483647	GET Collection
HQL::fields	Specify the field included in a return information.	N/A	N/A	N/A	GET Collection
HQL::sortBy	Sort in a specify column.	<column>[ASC DESC](, <column>[ASC DESC])*	ASC	N/A	GET Collection

Parameter	Description	Value	Default	Range	Target
page	Acquire the information on a specify page. It is necessary to specify with <code>pageSize</code> . Priority is given over <code>offset</code> , and it changes into <code>offset</code> and is interpreted.	1,2,3,...	N/A	1 to 2147483647	GET Collection
pageSize	Specify a page size. It becomes the maximum number of objects to return. Priority is given over <code>HQL::count</code> and it is interpreted as the count. When 0 is specified, this field acquires all the objects.	0,1,2,3,...	N/A	0 to 2147483647	GET Collection
alt	Specify the format treated instead of a <code>Content-Type/Accept</code> header. The feature for testing by simple clients, e.g. a browser	>xml   json	N/A	N/A	All the methods
_method	Call a different method than the specified one.	PUT   POST   DELETE	N/A	N/A	All the methods



Parameter	Description	Value	Default	Range	Target
	Use when PUT, DELETE, or POST are not supported by proxy or client mounting policies.  _method is given priority over X-HTTP-Method-Override.				

### Specifying pageSize and page parameters

The `pageSize` specifies the number of lines on a page to use for a service list, for example, or the number of lines on a GUI display. You can specify the `pageSize` (such as 100 lines per page) and you can also specify the page number in a request.

Since the total number of resources and the number of pages can be accessed in the pagination object that is returned through the `page` and `pageSize` parameters, the user must be able to determine the location of the target data.

Use the `page` and `pageSize` to calculate the `HQL::offset`. If the range of the `HQL::offset` is exceeded, Hitachi Ops Center Automator returns a `Bad Request` response (status code 400). Moreover, when the sum total of the value `offset` and `pageSize` exceeds 2147483647, the request acquires only objects from the `offset` to the 2147483647th position.

## Using the query filter

### Syntax

The Ops Center Automator API query filter allows you to specify and refine the collection of data by using query parameters such as `HQL::filter` and supported expressions.

Use the following expressions to define the target data for a resource request:

```
expression ::= "(" expression ")" | binary-expression | expression junction expression
junction ::= ( "and" | "or" )
binary-expression ::= (compare-expression | tuple-expression)
compare-expression ::= name-expression compare-operation value-expression
tuple-expression ::= name-expression tuple-operation tuple-value-expression
tuple-value-expression ::= "[" value-expression ("," value-expression)* "]"
name-expression ::= property-name | "[" property-name "]"
value-expression ::= ( string-expression | number-expression | boolean-expression )
string-expression ::= "'" ([^'] | [']{2})* "'"
```

```

number-expression ::= ( "0" | "1" | "2" | "3" | "4" | "5" | "6" | "7" | "8" | "9" )+
boolean-expression ::= "true" | "false" | "TRUE" | "FALSE"
compare-operation ::= ( "eq" | "=" | "ne" | "<>" | "!=" | "gt" | ">" | "lt" | "<" |
"ge" | ">=" | "le" | "<=" | "starts" | "ends" | "like" )
tuple-operation ::= ( "in" | "not in" )

```

Where:

- *property-name* is a property name (`Property.name` returned by properties) that is specified with a resource type.
- The value-expression shows whether the expression is a Boolean value, the string expression (enclosed by single quotes) or the numeric expression as JSON representation as the property information, and it is different from the actual type of Property. For example, since Calendar/Date type is treated as the character string of ISO8601 representation, it becomes a string expression.

### Expression support

This table lists the supported expressions.

Model name	Expression
int/long	number-expression
enum	string-expression
string	string-expression
ISO8601String	string-expression
URLString	string-expression
Boolean	Boolean-expression
other	not supported

This API uses the Contextual Query Language (CQL) observes the following guidelines:

- Keywords are case insensitive.
- Arithmetic functions have priority. It is understood as  $a=1$  and  $b=2$  or  $a=1$  and  $c=2$  ( $a=1$  and  $b=2$ ) or ( $a=1$  and  $c=2$ ).

For example, the following expression performs filtering on the specified columns:

```

...?HQL::filter=instanceID%20in%20['1000',%20'1001','1002']%20and%20status%20=
%20'Running'

```

### Operation list

The following table shows the supported operations and expressions.

Operation	Description	The grammar that can be specified	Priority level
and	Are they both true?	compare-expression, tuple-expression	2
eq	Is it equal?	string, number, boolean	1
ne	Is it not equal?	string, number, boolean	1
gt	Is it larger?	string, number	1
lt	Is it smaller?	string, number	1
ge	Is it greater than or is it equal?	string, number	1
le	Is it smaller or is it equal?	string, number	1
starts	Is it a starting value?	string	1
ends	Is it an exit value?	string	1
in	Is it contained?	string, number, boolean	1
not in	Is it not contained?	string, number, boolean	1
like*	Is a regular expression matched?	string	1
or	Is either true?	compare-expression, tuple-expression	3
contains*	Multiple conditions can be specified. Is one of the specified elements contained?	string, number, Boolean, enum	1
contains any*	Same as "contains".	string, number, Boolean, enum	1

Operation	Description	The grammar that can be specified	Priority level
contains none*	Multiple conditions can be specified. Are all of the elements not contained (not present)?	string, number, Boolean, enum	1

\* The Automator API does not support this operation.

## Domain object convention

The domain is one of the main resources in Automator. Most Automator resources are found in the `objects` domain.

### Primitive data types

The primitive data types in the JSON/XML representation of a supported resource are shown in the following table.

Type	Values
Boolean	true or false
Int	Signed 32-bit integer
Long	Signed 64-bit integer
String	Text

### Date and Time

Specify the date and time using the ISO8601 format. The format can omit all information except "year." However, if the date or time is omitted, the minimum valid value is added automatically. If the time zone is omitted, the time zone set at the host service is added (by default). However, if you specify the date and time with the parameter, the day (dd) and time cannot be omitted.

The following table lists the formats for specifying the date and time.

Format	Example	Time processed by Automator
yyyy-mm-ddThh:mm:ss.mmmTZD	2014-12-09T18:50:30.500+09:00	2014-12-09T18:50:30.500+09:00
yyyy-mm-ddThh:mm:ss.mmm	2014-12-09T18:50:30.500.000	2014-12-09T18:50:30.500.000 [time zone of host server]
yyyy-mm-ddThh:mm:ssTZD	2014-12-09T18:50:30+09:00	2014-12-09T18:50:30.000+09:00
yyyy-mm-ddThh:mmTZD	2014-12-09T18:50+09:00	2014-12-09T18:50:00.000+09:00
yyyy-mm-ddThhTZD	2014-12-09T18+09:00	2014-12-09T18:00:00.000+09:00
yyyy-mm-dd	2014-12-09	2014-12-09T00:00:00.000 [time zone of host server]
yyyy-mm	2014-12	2014-12-01T00:00:00.000 [time zone of host server]
yyyy	2014	2014-01-01T00:00:00.000 [time zone of host server]

## Using the output of an action object

Express a possible function and its transition URL to a resource.

For example, the following function:

```
GET https://host:port/Automation/version/objects/Services/id/actions
```

can return a collection of multiple action objects.

```
{
  "data" : [ {
    "name" : "update",
    "href" : "https://host:port/Automation/version/objects/Services/id",
    "method" : "PUT",
    "parameters" : []
  }, {
    "name" : "submit",
    "href" : " https://host:port/Automation/version/objects/Services/id/actions/submit/
invoke",
    "method" : "POST",
    "parameters" : []
  }
]
```

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

The following table define the objects.

Name	Type	Description
name	string	Action name
href	string	Action URL
method	string	HTTP method
type	string	Media-type
parameters	Object[ ]	Parameters to invoke the action

## Providing message responses to URI request errors

The following function and table show and describe error responses for a request when the specified URI is not valid.

```
{
  "errorSource" : "anyURI"
  "message" : "",
  "messageID" : "",
  "application" : "Automation",
  "messageData" : "javax.ws.rs.WebApplicationException/r/n/tat ..."
}
```

Name	Type	Description
errorSource	string	Identifying information of the source resource of the error (URI)
message	string	User message
messageID	string	Identifier of the format string for the message
application	string	Application in which the error occurred

Name	Type	Description
messageData	string	Additional error information, for example, the stack trace for debugging (optional)

## Requesting the status of an invoked action

The following function returns the status and result of an invoked action (such as an update) by specifying the `instanceID` and the URL of the affected resource (for example, a Task or Property resource).

```
{
  "instanceID":,
  "created":,
  "updated":,
  "completed":,
  "state":, "affectedResource" :[]
  "result":[],
  "resultType" : ""
}
```

The following table describes the available fields for this function.

Name	Type	Description
instanceID	string	Unique identifier for the job
created	string	Generation time of this object
updated	string	Time when this object was updated during asynchronous processing. In synchronous processing, it is the time created.
completed	string	Time which processing completed in asynchronous processing. In synchronous processing, it is time created.

Name	Type	Description
state	string	<p>queued: Indicates that the process has not yet begun. Allowable action in this state is: stop.</p> <p>running: Indicates that the process is still being run. Allowable action in this state is: stop.</p> <p>failed: Indicates that the process failed to complete successfully.</p> <p>success: Indicates that the process completed successfully .</p> <p>stopping: Indicates that the process is stopping. Allowable action in this state is stop.</p> <p>stopped: Indicates that the process was stopped before completion.</p>
affectedResource	string[ ]	Link to affected resource URL.
result	object[ ]	Result of the job (optional)
resultType	string	The content type of the result object (optional)



## Specifying collection information

Use the following elements in a container for returning a collection of object information.

Name	Type	Description
pagination	Object	Pagination information (optional) <b>Note:</b> Use the pagination element, only if <code>page</code> and <code>pageSize</code> are specified at the request.
data	Object[ ]	List of resources
count	integer	Number of resources in the collection (optional)

## Specifying pagination properties

The following function block shows an example for specifying pagination properties.

```
{
  "pagination" : {
    "page" : 1,
    "pageSize" : 10,
    "numPages" : 3,
    "totalCount" : 24
  }
}
```

Name	Type	Description
page	integer	Page number which user requested
pageSize	integer	Page size which user requested
numPages	integer	Number of the all pages
totalCount	integer	Number of the all resources

## Warning message format for failure to connect to the external server

When updating the `ExternalServerConnection` status, use the following warning header in response to a server connection failure or ERROR state.

**Message:** Warning: 199 Automation "Failed to connect external server [*Entry-name*]"

## Chapter 2: Hitachi Ops Center Automator REST API use cases

### Use case reference table

The following table shows a quick reference list that includes the use case category, name (containing a link), and description.

The table also includes the name of the folder that contains sample programs.

To access the sample code files referenced in the following use cases and get information on how to set up your environment to run the sample code, access the Ops Center documentation: <https://docs.hitachivantara.com/home>. To find the library, enter "Ops Center Product Documentation Library (PDL)" in the search box.

Download and extract the Ops Center Product Documentation Library (PDL), go to the Automator folder, and select the Hitachi Ops Center Automator API Sample Scripts zip file.

Category	Use case	Description	UC# (Folder name of sample program)
Find services	<a href="#">Find service by service name (on page 79)</a>	Get all service information and find a service by name	UC_GET_SERVICE_BY_NAME
	<a href="#">Get top 10 most frequently used services (on page 81)</a>	Get a maximum of 10 services in descending order of submitCount and in ascending order of name.	UC_GET_TOP10_FREQUENTLY_USED_SERVICES
Update service	<a href="#">Change service state to release (on page 84)</a>	Change the state of a service to release.	UC_CHANGE_SERVICE_STATUS_TO_RELEASE

Category	Use case	Description	UC# (Folder name of sample program)
	<u>Change service state to maintenance</u> (on page 87)	Change the state of a service to maintenance.	UC_CHANGE_SERVICE_STATUS_TO_MAINTENANCE
	<u>Delete a service by service name</u> (on page 91)	Delete a service by service Name.	UC_DELETE_SERVICE_BY_NAME
Create and Submit Service Request	<u>Create and submit a service request</u> (Execute immediately) (on page 94)	Search for the Allocate Volumes with Smart Provisioning service, then create a service request to allocate volumes to specified host and submit it.	UC_CREATE_REQUEST
	<u>Create and submit service request</u> (Schedule) (on page 99)	Search for the Allocate Volumes with Smart Provisioning service, then create a service request to allocate volumes to specified host.  This service is run at the specified date and time.	UC_CREATE_REQUEST_SCHEDULE

Category	Use case	Description	UC# (Folder name of sample program)
	<a href="#">Create and submit service request then get the result after the task is completed (on page 103)</a>	Create service request for Allocate Volumes with Smart Provisioning to allocate volumes to a host, and get the LUN Path Information regarding allocated volumes after the task is completed or failed.	UC_CREATE_REQUEST_AND_GET_RESULT
	<a href="#">Get result by task ID after task completed (on page 110)</a>	Get LUN Path Information after the task for the Allocate Volumes with Smart Provisioning service is done by using given task id.	UC_GET_RESULT_BY_TASK_ID
Find tasks	<a href="#">Find long-running tasks (on page 112)</a>	Find tasks running longer than expected by filtering tasks by the task status of longRunning.	UC_GET_LONG_RUNNING_TASKS
	<a href="#">Find tasks waiting for user input (on page 115)</a>	Find tasks waiting for user's input by filtering tasks by the status of waitingForInput.	UC_GET_TASKS_WAITING_INPUT

Category	Use case	Description	UC# (Folder name of sample program)
Manage tasks	<a href="#">Stop running all tasks by service name (on page 117)</a>	Stop running all tasks by service name.	UC_STOP_ALL_RUNNING_TASKS_BY_NAME
	<a href="#">Stop running a task by task ID (on page 121)</a>	Stop running task by task id.	UC_STOP_RUNNING_TASK
	<a href="#">Archive completed tasks (on page 125)</a>	Archive old tasks that completed 24 hours or more from the current time and are not marked as a TODO task.	UC_ARCHIVE_TASKS
	<a href="#">Cancel all scheduled tasks by service name (on page 129)</a>	Get all scheduled tasks for the service with the specified service name, then cancel the scheduled tasks.	UC_CANCEL_ALL_SCHEDULED_TASKS_BY_NAME
	<a href="#">Cancel scheduled task by task ID (on page 133)</a>	Cancel scheduled task by task id.	UC_CANCEL_SCHEDULED_TASK_BY_TASK_ID
	<a href="#">Suspend all scheduled tasks by service name (on page 137)</a>	Get all scheduled tasks for the service with the specified service name, then suspend the scheduled tasks.	UC_SUSPEND_ALL_SCHEDULED_TASKS_BY_SERVICE_NAME
	<a href="#">Suspend a scheduled task by task ID (on page 141)</a>	Suspend a scheduled task based on task id.	UC_SUSPEND_SCHEDULED_TASK_BY_TASK_ID

Category	Use case	Description	UC# (Folder name of sample program)
	<u>Resume all suspended tasks by service name</u> (on page 145)	Resume all scheduled tasks based on service name.	UC_RESUME_ALL_SCHEDULED_TASKS_BY_SERVICE_NAME
	<u>Resume a suspended task by task ID</u> (on page 149)	Resume a suspended scheduled task for the specified task id.	UC_RESUME_SCHEDULED_TASK_BY_TASK_ID
	<u>Resubmit a task</u> (on page 152)	Resubmit a task.	UC_RESUBMIT_A_TASK

## Use cases for finding and managing services

Learn how to use the Ops Center Automator REST API to find and manage services.

To access the sample code files referenced in the following use cases and get information on how to set up your environment to run the sample code, access the Ops Center documentation: <https://docs.hitachivantara.com/home>. To find the library, enter "Ops Center Product Documentation Library (PDL)" in the search box.

Download and extract the Ops Center Product Documentation Library (PDL), go to the Automator folder, and select the Hitachi Ops Center Automator API Sample Scripts zip file.

### Find service by service name

#### Overview

Find a service by name and get all related service information.

Name	Description
Use case title	Find service by service name
Description	Find the Allocate Volumes with Smart Provisioning service by filtering services by name.

Name	Description
Files	sample_code.py, uri_creator.py These files are located in the following sample code download folder: UC_GET_SERVICE_BY_NAME

### REST APIs to call

```
GET http(s)://{host}:{port}/Automation/v1/objects/Services?HQL::filter=name='Allocate Volumes with Smart Provisioning'
```

- Find Allocate Volumes with Smart Provisioning service by filtering services by name.
- Specify the query string `HQL::filter=name='Allocate Volumes with Smart Provisioning'` to get services with the specified name.
- For details about the query string and resource attributes such as `name`, see the API command set topics.

In the following sample code, the URIs are created by `uri_creator.py`. See "URI Creation and Utility Functions" for details.

### Sample code

Variables - The following variables are used in the sample code:

Name	Description
USER	User name of API user account
PASS	Password of API user account
SERVICE_NAME	Name of service

Find a service by filtering services by name.

```
"""
Find a service by filtering services by name
"""
uri = uri_creator.create_get_service_by_name_uri(SERVICE_NAME)
r = requests.get(uri, headers=headers, auth=(USER, PASS))
data = r.json()['data']
if len(data) > 0:
    #Possibly there are more than one services having same name belonging different
    service group
    service = data[0]
    prettyPrint(service)
```



```

else:
    print("There is no service having specified name: \" + SERVICE_NAME + "\")
    sys.exit(1)

sys.exit(0)

```

## URI creation and utility functions

### URI creation:

```

"""
This class creates URI for REST API
"""
class UriCreator():
    def __init__(self, host, port="22015", product="Automation", protocol="http",
version="v1"):
        self.host = host
        self.port = port
        self.product = product
        self.protocol = protocol
        self.version = version
        self.encode = "utf-8"

    def create_url_base(self):
        uri = self.protocol + "://" + self.host + ":" + self.port + "/" +
self.product + "/" + self.version + "/"
        return uri

    def create_get_service_by_name_uri(self, name):
        uri = self.create_url_base() + "/objects/Services?HQL::filter=name='"+name+"'"
        return uri

```

### Utility functions in sample code:

```

"""
Print json object in human readable format
"""
def prettyPrint(jsonObj):
    print(json.dumps(jsonObj, sort_keys=True, indent=4))

```

## Get top 10 most frequently used services

### Overview

Get a maximum of 10 services in descending order of `submitCount` and in ascending order of `name`.

Name	Description
Use case title	Get top 10 most frequently run services.
Description	Get up to 10 most frequently used services in descending order of run count and ascending order of name.
Files	sample_code.py, uri_creator.py These files are located in the following sample code download folder: UC_GET_TOP10_FREQUENTLY_USED_SERVICES.

### REST APIs to call

```
GET http(s)://{host}:{port}/Automation/v1/objects/Services?
HQL::filter=executedCount>0&HQL::count=10&HQL::sortBy=executedCount%20DESC,name%20ASC
```

- Get a maximum of 10 services descending order of `executedCount` and in ascending order of `name`
- Specify the query string `HQL::filter=executedCount >0` to get only services which have been used more than once time
- Specify the query string `HQL::count=10` to get the maximum of 10 services
- Specify the query string `HQL::sortBy=executedCount%20DESC,name%ASC`  
`executedCount` means the number of run tasks. To count the number of submissions only, use `submitCount` instead of `executedCount`
- For details about the query string and resource attributes such as `name`, see the API command set topics.

In the following sample code, the URIs are created by `uri_creator.py`. See *URI Creation and Utility Functions* for details.

### Sample code

Variables - The following variables are used in the sample code:

Name	Description
USER	User name of API user account
PASS	Password of API user account

Get a maximum of 10 services in descending order of `executedCount` and in ascending order of name.

```

"""
Get 10 services at maximum in descendant order of executedCount and in ascendant
order of name
"""
filterCriteria = "HQL::filter=executedCount>0"
countCriteria = "HQL::count=10"
sortCriteria = "HQL::sortBy=executedCount%20DESC,name%20ASC"
criteria = filterCriteria + "&" + countCriteria + "&" + sortCriteria

uri = uri_creator.create_services_with_criteria_uri(criteria)
r = requests.get(uri, headers=headers, auth=(USER, PASS))

data = r.json()['data']
if len(data) == 0:
    print("There is no services executed")
    sys.exit(1)

count = 1
for service in data:
    print(str(count) + "\t" + service['name'] + "\t" + str(service['executedCount']))
    count = count + 1

sys.exit(0)

```

## URI creation and utility functions

### URI creation

```

"""
This class creates URI for REST API
"""
class UriCreator():
    def __init__(self, host, port="22015", product="Automation", protocol="http",
version="v1"):
        self.host = host
        self.port = port
        self.product = product
        self.protocol = protocol
        self.version = version
        self.encode = "utf-8"

    def create_url_base(self):
        uri = self.protocol + "://" + self.host + ":" + self.port + "/" +
self.product + "/" + self.version + "/"
        return uri

    def create_services_with_criteria_uri(self, criteria):

```

```
uri = self.create_url_base() + "/objects/Services?" + criteria
return uri
```

### Utility functions in sample code

```
"""
Print json object information in human readable format
"""
def prettyPrint(jsonObj):
    print(json.dumps(jsonObj, sort_keys=True, indent=4))
```

## Change service state to release

### Overview

Change the state of a service to release.

Name	Description
Use case title	Change service state to release
Description	Find the Allocate Volumes with Smart Provisioning <b>service by filtering services by name</b> , then update service state to release
Files	<p>sample_code.py, uri_creator.py</p> <p>sample_code_2.py, uri_creator_2.py (changing service status only)</p> <p>These files are located in the following sample code download folder: UC_CHANGE_SERVICE_STATUS_TO_RELEASE</p>

### REST APIs to call

1. GET `http(s)://host:port/Automation/v1/objects/Services?HQL::filter=name='Allocate Volumes with Smart Provisioning'`
  - Find the Allocate Volumes with Smart Provisioning **service by filtering services by name**
  - Specify the query string `HQL::filter=name='Allocate Volumes with Smart Provisioning'` to get only services with the specified name
  - For details about the query string and resource attributes such as `name`, see the API command set topics.

2. PUT `https://host:port/Automation/v1/objects/Services/instanceID`
  - Update service information after changing the service state to `release`

You can use the previous API call not only for status changes, but also for other properties such as name, description and tags. However, if service status is the only property that you want to change, you can use the `release` action as follows. See the sample code files (`sample_code_2.py`, `uri_creator_2.py`) for additional detail.

1. GET `https://host:port/Automation/v1/objects/Services?HQL::filter=name='Allocate Volumes with Smart Provisioning'`
2. GET `https://host:port/Automation/v1/objects/Services/instanceID/actions/release`
  - Get property list to invoke the release action
3. POST `https://host:port/Automation/v1/objects/Services/instanceID/actions/release/invoke`
  - Invoke the release action by passing the property list obtained in Step 2

In the following sample code, the URIs are created by `uri_creator.py`.

### Sample code

Variables - The following variables are used in the sample code:

Name	Description
USER	Username of API user account
PASS	Password of API user account
SERVICE_NAME	Name of the service

1. Find a service by filtering services by name.

```
"""
Find a service by filtering services by name
"""
uri = uri_creator.create_get_service_by_name_uri(SERVICE_NAME)
r = requests.get(uri, headers=headers, auth=(USER, PASS))
data = r.json()['data']
if len(data) > 0:
    #Possibly there are more than one services having same name belonging
different service group
    service = data[0]
else:
    print("There is no service having specified name: \"" + SERVICE_NAME + "\"")
    exit(1)
```

## 2. Update service information after changing the service state to `release`.

```

"""
Update service information after changing service state to 'release'
"""
if service['serviceState'] != 'release':
    uri = uri_creator.create_put_service_uri(service['instanceID'])
    service = requests.get(uri, headers=headers, auth=(USER, PASS)).json()
    service['serviceState'] = 'release'
    ret = do_action("put", uri, service, USER, PASS).json()
else:
    print("The service is already released.")

```

### URI creation and utility functions

#### URI creation

```

"""
This class creates URI for REST API
"""
class UriCreator():
    def __init__(self, host, port="22015", product="Automation", protocol="http",
version="v1"):
        self.host = host
        self.port = port
        self.product = product
        self.protocol = protocol
        self.version = version
        self.encode = "utf-8"

    def create_url_base(self):
        uri = self.protocol + "://" + self.host + ":" + self.port + "/" +
self.product + "/" + self.version + "/"
        return uri

    def create_get_service_by_name_uri(self, name):
        uri = self.create_url_base() + "/objects/Services?HQL::filter=name='" + name + "'"
        return uri

    def create_put_service_uri(self, id):
        uri = self.create_url_base() + "objects/Services" + "/" + str(id)
        return uri

```

#### Utility functions in sample code

```

"""
Print json object information in human readable format
"""
def prettyPrint(jsonObj):
    print(json.dumps(jsonObj, sort_keys=True, indent=4))

```

```

"""
execute the HTTP request (POST or PUT)
@param method_type HTTP request method (POST or PUT)
@param uri URI to execute HTTP method?
@param body the information of resource
"""
def do_action(method_type, uri, body, user, passwd):
    try:
        if (method_type == "put"):
            r = requests.put(uri, headers=headers, data=json.dumps(body), auth=(user,
passwd))
        elif (method_type == "post"):
            r = requests.post(uri, headers=headers, data=json.dumps(body),
auth=(user, passwd))
        if r.status_code == http.client.OK:
            return r
        else:
            raise (Exception('ERROR HTTP Status = ' + str(r.status_code)))
            return None
    except requests.exceptions.ConnectionError as e:
        print(str(e))
        print("URI : " + uri)
        sys.exit("failed to connect to REST API server. Please check URI parameters.")
    except requests.HTTPError as e:
        print(str(e))
        sys.exit("HTTP error.")
    except Exception as e:
        print(str(e))
        sys.exit("failed to request.")

```

## Change service state to maintenance

### Overview

Change the state of a service to maintenance.

Name	Description
Use case title	Change service state to maintenance
Description	Find the Allocate Volumes with Smart Provisioning service by filtering services by name, then update service state to maintenance
Files	sample_code.py, uri_creator.py sample_code_2.py, uri_creator_2.py (changing service status only)

Name	Description
	These files are located in the following sample code download folder: UC_CHANGE_SERVICE_STATUS_TO_MAINTENANCE

### REST APIs to call

1. GET `https://host:port/Automation/v1/objects/Services?HQL::filter=name='Allocate Volumes with Smart Provisioning'`
  - Find the Allocate Volumes with Smart Provisioning service by filtering services by name
  - Specify the query string `HQL::filter=name='Allocate Volumes with Smart Provisioning'` to get only services with the specified name
  - For details about the query string and resource attributes such as `name`, see the API command set topics.
2. PUT `https://host:port/Automation/v1/objects/Services/ServiceID`
  - Update service information after changing the service state to `release`

You can use the previous API call not only for status changes, but also for other properties such as name, description and tags. However, if service status is the only property that you want to change, you can use the `maintenance` action as follows. See the sample code files (`sample_code_2.py`, `uri_creator_2.py`) for additional detail.

1. GET `https://host:port/Automation/v1/objects/Services?HQL::filter=name='Allocate Volumes with Smart Provisioning'`
2. GET `https://host:port/Automation/v1/objects/Services/instanceID/actions/maintenance`
  - Get property list to invoke the maintenance action
3. POST `https://host:port/Automation/v1/objects/Services/instanceID/actions/maintenance/invoke`
  - Invoke the `maintenance` action by passing the property list obtained in Step 2

In the following sample code, the URIs are created by `uri_creator.py`. See the *URI Creation and Utility Functions* for details.



**Sample code**

Variables - The following variables are used in the sample code:

Name	Description
USER	Username of API user account
PASS	Password of API user account
SERVICE_NAME	Name of the service

1. Find a service by filtering services by name.

```
"""
Find a service by filtering services by name
"""
uri = uri_creator.create_get_service_by_name_uri(SERVICE_NAME)
r = requests.get(uri, headers=headers, auth=(USER, PASS))
data = r.json()['data']
if len(data) > 0:
    #Possibly there are more than one services having same name belonging
    different service group
    service = data[0]
else:
    print("There is no service having specified name: \"\" + SERVICE_NAME + "\"")
```

2. Update service information after changing the service state to maintenance.

```
"""
Update service state
"""
if service['serviceState'] != 'maintenance':
    uri = uri_creator.create_put_service_uri(service['instanceID'])
    service = requests.get(uri, headers=headers, auth=(USER, PASS)).json()
    service['serviceState'] = 'maintenance'
    ret = do_action("put", uri, service, USER, PASS).json()
else:
    print("The service is already released.")
```

**URI creation and utility functions****URI creation**

```
"""
This class creates URI for REST API
"""
class UriCreator():
    def __init__(self, host, port="22015", product="Automation", protocol="http",
version="v1"):
        self.host = host
        self.port = port
```

```

self.product = product
self.protocol = protocol
self.version = version
self.encode = "utf-8"

def create_url_base(self):
    uri = self.protocol + "://" + self.host + ":" + self.port + "/" +
self.product + "/" + self.version + "/"
    return uri

def create_get_service_by_name_uri(self, name):
    uri = self.create_url_base() + "/objects/Services?HQL::filter=name='"+name+"'"
    return uri

def create_put_service_uri(self, id):
    uri = self.create_url_base() + "objects/Services" + "/" + str(id)
    return uri

```

### Utility functions in sample code

```

"""
Print json object information in human readable format
"""
def prettyPrint(jsonObj):
    print(json.dumps(jsonObj, sort_keys=True, indent=4))

"""
execute the HTTP request (POST or PUT)
@param method_type HTTP request method (POST or PUT)
@param uri URI to execute HTTP method?
@param body the information of resource
"""
def do_action(method_type, uri, body, user, passwd):
    try:
        if method_type == "put":
            r = requests.put(uri, headers=headers, data=json.dumps(body), auth=(user,
passwd))
        elif method_type == "post":
            r = requests.post(uri, headers=headers, data=json.dumps(body),
auth=(user, passwd))
        if r.status_code == http.client.OK:
            return r
        else:
            raise(Exception('ERROR HTTP Status = ' + str(r.status_code)))
            return None
    except requests.exceptions.ConnectionError as e:
        print(str(e))
        print("URI : " + uri)
        sys.exit("failed to connect to REST API server. Please check URI parameters.")
    except requests.HTTPError as e:

```

```

print(str(e))
sys.exit("HTTP error.")
except Exception as e:
    print(str(e))
    sys.exit("failed to request.")

```

## Delete a service by service name

### Overview

Delete a service by service name.

Name	Description
Use case title	Delete a service specified by service name
Description	Find the Allocate Volumes with Smart Provisioning service by filtering services by name, update service state to maintenance, then delete the service
Files	sample_code.py, uri_creator.py  These files are located in the following sample code download folder: UC_DELETE_SERVICE_BY_NAME

### REST APIs to call

- GET `https://host:port/Automation/v1/objects/Services?HQL::filter=name='Allocate Volumes with Smart Provisioning'`
  - Find the Allocate Volumes with Smart Provisioning service by filtering services by name
  - Specify the query string `HQL::filter=name='Allocate Volumes with Smart Provisioning'` to get services that match the specified name
  - For details about the query string and resource attributes such as `name`, see the API command set topics.
- DELETE `https://host:port/Automation/v1/objects/Services/serviceID`
  - Delete the service

**Sample code**

Variables - The following variables are used in the sample code:

Name	Description
USER	Username of API user account
PASS	Password of API user account
SERVICE_NAME	Name of the service to delete

**1. Find a service by filtering services by name.**

```

"""
Find a service by filtering services by name
"""
uri = uri_creator.create_get_services_by_service_name_uri(SERVICE_NAME)
services = requests.get(uri, headers=headers, auth=(USER, PASS)).json()

if len(services) == 0:
    print("There is no service having specified name: \"" + SERVICE_NAME + "\"")
    sys.exit(1)

for service in services['data']:
    """
    Delete the service --> See #2 section
    """

sys.exit(0)

```

**2. Delete the service.**

```

"""
Delete the service
"""
uri = uri_creator.create_get_service_uri(service['instanceID'])
do_action("delete", uri, None, USER, PASS)

```

**URI creation and utility functions****URI creation**

```

"""
This class creates URI for REST API
"""
class UriCreator():
    def __init__(self, host, port="22015", product="Automation", protocol="http",
version="v1"):
        self.host = host
        self.port = port

```

```

self.product = product
self.protocol = protocol
self.version = version
self.encode = "utf-8"

def create_url_base(self):
    uri = self.protocol + "://" + self.host + ":" + self.port + "/" +
self.product + "/" + self.version + "/"
    return uri

def create_get_services_by_service_name_uri(self, serviceName):
    uri = self.create_url_base() + "objects/Services?
HQL::filter=name='"+serviceName +"'"
    return uri

def create_get_service_uri(self, serviceID):
    uri = self.create_url_base() + "objects/Services/"+str(serviceID)
    return uri

```

### Utility functions in sample code

```

"""
execute the HTTP request (POST or PUT)
@param method_type HTTP request method (POST or PUT)
@param uri URI to execute HTTP method?
@param body the information of resource
"""
def do_action(method_type, uri, body, user, passwd):
    try:
        if (method_type == "put"):
            r = requests.put(uri, headers=headers, data=json.dumps(body), auth=(user,
passwd))
        elif (method_type == "delete"):
            r = requests.delete(uri, headers=headers, data=json.dumps(body),
auth=(user, passwd))
        elif (method_type == "post"):
            r = requests.post(uri, headers=headers, data=json.dumps(body),
auth=(user, passwd))
        if r.status_code == http.client.OK or r.status_code==204:
            return r
        else:
            raise (Exception('ERROR HTTP Status = ' + str(r.status_code)))
            return None
    except requests.exceptions.ConnectionError as e:
        print(str(e))
        print("URI : " + uri)
        sys.exit("failed to connect to REST API server. Please check URI parameters.")
    except requests.HTTPError as e:
        print(str(e))
        sys.exit("HTTP error.")

```

```
except Exception as e:
    print(str(e))
    sys.exit("failed to request.")
```

## Use cases for creating and submitting service requests

Learn how to use the Ops Center Automator REST API to create and update services.

To access the sample code files referenced in the following use cases and get information on how to set up your environment to run the sample code, access the Ops Center documentation: <https://docs.hitachivantara.com/home>. To find the library, enter "Ops Center Product Documentation Library (PDL)" in the search box.

Download and extract the Ops Center Product Documentation Library (PDL), go to the Automator folder, and select the Hitachi Ops Center Automator API Sample Scripts zip file.

### Create and submit service request (run immediately)

#### Overview

Search for the `Allocate Volumes with Smart Provisioning` service and then create a service request to allocate volumes to specified host and submit it.

Name	Description
Use case title	Create and submit a service request
Description	Find the <code>Allocate Volumes with Smart Provisioning</code> service by filtering services by name, then create a service request to allocate volumes to the specified host and submit it
Files	<code>sample_code.py</code> , <code>uri_creator.py</code> These files are located in the following sample code download folder: <code>UC_CREATE_REQUEST</code>

**REST APIs to call**

1. GET `https://host:port/Automation/v1/objects/Services?HQL::filter=name='Allocate Volumes with Smart Provisioning'`
  - Find the Allocate Volumes with Smart Provisioning service by filtering services by name
  - Specify the query string `HQL::filter=name='Allocate Volumes with Smart Provisioning'` to get only services with the specified name
  - For details about the query string and resource attributes such as `name`, see the API command set topics.
2. GET `https://host:port/Automation/v1/objects/Services/instanceID/actions/submit`
  - Acquire the service property list to fill property values such as target host and volume settings before submitting a service request
3. POST `https://host:port/Automation/v1/objects/Services/instanceID/actions/submit/invoke`
  - Submit a service request with a filled property list

**Sample code**

In the following sample code, the URIs are created by `uri_creator.py`. See *URI Creation and Utility Functions* for details.

Variables - The following variables are used in the sample code:

Name	Description
USER	Username of API user account
PASS	Password of API user account
SERVICE_NAME	Service name for which you want to create a service request
TARGET_HOST	Target host to which volumes are allocated

1. Find a service by filtering services by `name`.

```

"""
Find a service by specified name from all services
"""
uri = uri_creator.create_get_service_by_name_uri(SERVICE_NAME)
r = requests.get(uri, headers=headers, auth=(USER, PASS))
data = r.json()['data']
if len(data) > 0:
    service = data[0]
else:
    print("There is no service having specified name: \"" + SERVICE_NAME + "\"")

```

```

exit(1)

instanceID = service['instanceID']

```

2. Acquire the service property list to fill property values such as target host and volume settings before submitting a service request.

```

"""
Acquiring property list of the service in order to fill property values such as
target host and volume settings before submitting service request
"""

uri = uri_creator.create_prepare_submit_service_uri(instanceID)
submitForm = requests.get(uri, headers=headers, auth=(USER, PASS)).json()
# Update host settings
hostSetting = find(submitForm['parameters'], 'keyName',
"HostSettingsForSingleHost")
hostSettingValue = {
    "hostName" : TARGET_HOST,
    "wnnSettings": [{"wnn": "1111111111111111", "wnnNickname": ""}],
    "iScsiSettings": []
}
hostSetting['value'] = json.dumps(hostSettingValue)

# Update volume settings
volumeSetting = find(submitForm['parameters'], 'keyName', "VolumeSettings")
volumeSettingValue = json.loads(volumeSetting['value'])
usageOS = find(volumeSettingValue, "volumeUsage", "OS")
usageOS.update({
    'volumeLabel' : 'OS',
    'volumeCapacityInMiB' : 10240
})
usageApp = find(volumeSettingValue, "volumeUsage", "App")
usageApp.update({
    'volumeLabel' : 'App',
    'volumeCapacityInMiB' : 10240
})
usageData = find(volumeSettingValue, "volumeUsage", "Data")
usageData.update({
    'volumeLabel' : 'Data',
    'volumeCapacityInMiB' : 10240
})
usageData = find(volumeSettingValue['values'], "usage", "Data")
usageData.update({
    'ldevLabel' : 'Data',
    'capacity' : '10GB'
})
volumeSetting['value'] = json.dumps(volumeSettingValue)

# Update task settings
taskSettings = findByProperty(submitForm['parameters'], 'scheduleType')

```



```
taskSettings.update({
    'name' : 'Task from API'
})
```

### 3. Submit a service request with a filled property list.

```
"""
Submit service request with filled property list
"""
uri = uri_creator.create_submit_service_uri(instanceID)
ret = do_action("post", uri, submitForm, USER, PASS).json()
```

## URI creation and utility functions

Get result information of the task such as LUN path information.

```
"""
This class creates URI for REST API
"""
class UriCreator():
    def __init__(self, host, port="22015", product="Automation", protocol="http",
version="v1"):
        self.host = host
        self.port = port
        self.product = product
        self.protocol = protocol
        self.version = version
        self.encode = "utf-8"
    def create_url_base(self):
        uri = self.protocol + "://" + self.host + ":" + self.port + "/" +
self.product + "/" + self.version + "/"
        return uri
    def create_get_service_by_name_uri(self, name):
        uri = self.create_url_base() + "/objects/Services?HQL::filter=name='"+name+"'"
        return uri
    def create_prepare_submit_service_uri(self, id):
        uri = self.create_url_base() + "/objects/Services/" + str(id) + "/actions/
submit"
        return uri
    def create_submit_service_uri(self, id):
        uri = self.create_url_base() + "/objects/Services/" + str(id) + "/actions/
submit/invoke"
        return uri
```

### Utility functions in sample code

```
"""
Print json object information in human readable format
```

```

"""
def prettyPrint(jsonObj):
    print(json.dumps(jsonObj, sort_keys=True, indent=4))

"""
Find element of which property and value equals to specified ones from array
"""
def find(array, property, value):
    for elem in array:
        if property in elem.keys() and elem[property] == value:
            return elem
    return

"""
Find element of which property name equals to specified one from array
"""
def findByProperty(array, property):
    for elem in array:
        if property in elem.keys():
            return elem
    return

"""
execute the HTTP request (POST or PUT)
@param method_type HTTP request method (POST or PUT)
@param uri URI to execute HTTP method?
@param body the information of resource
"""
def do_action(method_type, uri, body, user, passwd):
    try:
        if method_type == "put":
            r = requests.put(uri, headers=headers, data=json.dumps(body), auth=(user,
passwd))
        elif method_type == "post":
            r = requests.post(uri, headers=headers, data=json.dumps(body),
auth=(user, passwd))
        if r.status_code == http.client.OK:
            return r
        else:
            raise(Exception('ERROR HTTP Status = ' + str(r.status_code)))
            return None
    except requests.exceptions.ConnectionError as e:
        print(str(e))
        print("URI : " + uri)
        sys.exit("failed to connect to REST API server. Please check URI parameters.")
    except requests.HTTPError as e:
        print(str(e))
        sys.exit("HTTP error.")
    except Exception as e:

```

```
print(str(e))
sys.exit("failed to request.")
```

## Create and submit service request (schedule)

### Overview

Search for the `Allocate Volumes with Smart Provisioning` service, then create a service request to allocate volumes to specified host. This service is run at the specified date and time.

Name	Description
Use case title	Create and submit a service request with a schedule.
Description	Find the <code>Allocate Volumes with Smart Provisioning</code> service by filtering services by name, then create a service request to allocate volumes to specified host and submit it with a the specified date/time for running the service.
Files	<p><code>sample_code.py</code>, <code>uri_creator.py</code></p> <p>These files are located in the following sample code download folder:  <code>UC_CREATE_REQUEST_SCHEDULE</code>.</p>

### REST APIs to call

- GET `https://host:port/Automation/v1/objects/Services?`  
`HQL::filter=name='Allocate Volumes with Smart Provisioning'`
  - Find the `Allocate Volumes with Smart Provisioning` service by filtering services by name
  - Specify the query string `HQL::filter=name='Allocate Volumes with Smart Provisioning'` to get only services with the specified name
  - For details about the query string and resource attributes such as `name`, see the API command set topics.
- GET `https://host:port/Automation/v1/objects/Services/instanceID/actions/submit`
  - Acquire the service property list to fill property values such as target host and volume settings before submitting service request
  - Also, specify a date/time schedule that specifies when to run the service

3. POST `https://host:port/Automation/v1/objects/Services/instanceID/actions/submit/invoke`
  - Submit a service request with a filled property list

In the following sample code, the URIs are created by `uri_creator.py`. See *URI Creation and Utility Functions* for details.

### Sample code

Variables - The following variables are used in the sample code:

Name	Description
USER	Username of API user account
PASS	Password of API user account
SERVICE_NAME	Service name for which you want to create a service request
TARGET_HOST	Target host to which volumes are allocated
SCHEDULE_TIME	Date/time when the service will run

1. Find a service by filtering services by name.

```
"""
Find a service by filtering services by name
"""
uri = uri_creator.create_get_service_by_name_uri(SERVICE_NAME)
r = requests.get(uri, headers=headers, auth=(USER, PASS))
data = r.json()['data']
if len(data) > 0:
    #Possibly there are more than one services having same name belonging
    different service group
    service = data[0]
else:
    print("There is no service having specified name: \"" + SERVICE_NAME + "\"")
    exit(1)
instanceID = service['instanceID']
```

2. Acquire the service property list to fill property values such as target host and volume settings before submitting a service request.

```
"""
Acquiring property list of the service in order to fill property values such as
target host and volume settings before submitting service request
"""
uri = uri_creator.create_prepare_submit_service_uri(instanceID)
submitForm = requests.get(uri, headers=headers, auth=(USER, PASS)).json()
# Update host settings
```

```

hostSetting = find(submitForm['parameters'], 'keyName',
"HostSettingsForSingleHost")
hostSettingValue = {
    "hostName" : TARGET_HOST,
    "wnnSettings": [{"wnn":"1111111111111111","wnnNickname":""}],
    "iScsiSettings": []
}
hostSetting['value'] = json.dumps(hostSettingValue)

# Update volume settings
volumeSetting = find(submitForm['parameters'], 'keyName', "VolumeSettings")
volumeSettingValue = json.loads(volumeSetting['value'])
usageOS = find(volumeSettingValue, "volumeUsage", "OS")
usageOS.update({
    'volumeLabel' : 'OS',
    'volumeCapacityInMiB' : 10240
})
usageApp = find(volumeSettingValue, "volumeUsage", "App")
usageApp.update({
    'volumeLabel' : 'App',
    'volumeCapacityInMiB' : 10240
})
usageData = find(volumeSettingValue, "volumeUsage", "Data")
usageData.update({
    'volumeLabel' : 'Data',
    'volumeCapacityInMiB' : 10240
})
volumeSetting['value'] = json.dumps(volumeSettingValue)

# Update task settings
taskSettings = findByProperty(submitForm['parameters'], 'scheduleType')
taskSettings.update({
    'name' : 'Task from API',
    'scheduleType' : 'schedule',
    'scheduledStartTime' : SCHEDULE_TIME
})

```

### 3. Submit a service request.

```

"""
Send service request
"""
uri = uri_creator.create_submit_service_uri(instanceID)
ret = do_action("post", uri, submitForm, USER, PASS).json()

```

## URI creation and utility functions

### URI creation

```

"""
This class creates URI for REST API

```

```

"""
class UriCreator():
    def __init__(self, host, port="22015", product="Automation", protocol="http",
version="v1"):
        self.host = host
        self.port = port
        self.product = product
        self.protocol = protocol
        self.version = version
        self.encode = "utf-8"
    def create_url_base(self):
        uri = self.protocol + "://" + self.host + ":" + self.port + "/" +
self.product + "/" + self.version + "/"
        return uri

    def create_get_service_by_name_uri(self, name):
        uri = self.create_url_base() + "/objects/Services?HQL::filter=name='"+name+"'"
        return uri

    def create_prepare_submit_service_uri(self, id):
        uri = self.create_url_base() + "/objects/Services/" + str(id) + "/actions/
submit"
        return uri

    def create_submit_service_uri(self, id):
        uri = self.create_url_base() + "/objects/Services/" + str(id) + "/actions/
submit/invoke"
        return uri

```

### Utility functions in sample code

```

"""
Print json object information in human readable format
"""
def prettyPrint(jsonObj):
    print(json.dumps(jsonObj, sort_keys=True, indent=4))

"""
Find element of which property and value equals to specified ones from array
"""
def find(array, property, value):
    for elem in array:
        if property in elem.keys() and elem[property] == value:
            return elem
    return

"""
Find element of which property name equals to specified one from array
"""
def findByProperty(array, property):

```

```

for elem in array:
    if property in elem.keys():
        return elem
return

"""
execute the HTTP request (POST or PUT)
@param method_type HTTP request method (POST or PUT)
@param uri URI to execute HTTP method?
@param body the information of resource
"""
def do_action(method_type, uri, body, user, passwd):
    try:
        if (method_type == "put"):
            r = requests.put(uri, headers=headers, data=json.dumps(body), auth=(user,
passwd))
        elif (method_type == "post"):
            r = requests.post(uri, headers=headers, data=json.dumps(body),
auth=(user, passwd))
        if r.status_code == http.client.OK:
            return r
        else:
            raise (Exception('ERROR HTTP Status = ' + str(r.status_code)))
            return None
    except requests.exceptions.ConnectionError as e:
        print(str(e))
        print("URI : " + uri)
        sys.exit("failed to connect to REST API server. Please check URI parameters.")
    except requests.HTTPError as e:
        print(str(e))
        sys.exit("HTTP error.")
    except Exception as e:
        print(str(e))
        sys.exit("failed to request.")

```

## Create and submit service request, then get the result after the task is completed

### Overview

Create a service request for Allocate Volumes with Smart Provisioning to allocate volumes to a host, and get the LUN Path Information regarding allocated volumes after the task has completed or failed.

Name	Description
Use case title	Create and submit a service request, then get result after the task is completed

Name	Description
Description	Create a service request of Allocate Volumes with Smart Provisioning to allocate volumes to a host, and get LUN Path Information for the allocated volumes after the task is finished.
Files	sample_code.py, uri_creator.py These files are located in the following sample code download folder: UC_CREATE_REQUEST_AND_GET_RESULT

### REST APIs to call

1. GET `https://host:port/Automation/v1/objects/Services?HQL::filter=name='Allocate Volumes with Smart Provisioning'`
  - Find the Allocate Volumes with Smart Provisioning service by filtering services by name
  - Specify the query string `HQL::filter=name='Allocate Volumes with Smart Provisioning'` to get only services with the specified name
  - For details about the query string and resource attributes such as name, see the API command set topics.
2. GET `https://host:port/Automation/v1/objects/Services/instanceID/actions/submit`
  - Acquire the service property list to fill in property values such as target host and volume settings before submitting the service request
3. POST `https://host:port/Automation/v1/objects/Services/instanceID/actions/submit/invoke`
  - Submit service request with filled property list
4. GET `https://host:port/Automation/v1/objects/Tasks/instanceID`
  - Get task information to verify that the task is done
5. GET `https://host:port/Automation/v1/objects/PropertyValues?taskID=instanceID`
  - Get result information (property values) of the task including LUN Path Information, then find the LUN Path Information by using the `keyName` of the LUN Path Information, which ends with `LunPaths`

In the following sample code, the URIs are created by `uri_creator.py`. See *URI Creation and Utility Functions* for details.



## Sample code

Variables - The following variables are used in the sample code:

Name	Description
USER	Username of API user account
PASS	Password of API user account
SERVICE_NAME	Service name for which you want to create a service request
TARGET_HOST	Target host to which volumes are allocated
LOOP_TIME	Time interval to verify the task is completed

### 1. Find a service by filtering services by name.

```
"""
Find a service by filtering services by name
"""
uri = uri_creator.create_get_service_by_name_uri(SERVICE_NAME)
r = requests.get(uri, headers=headers, auth=(USER, PASS))
data = r.json()['data']

if len(data) > 0:
    #Possibly there are more than one services having same name belonging
    different service group
    service = data[0]
else:
    print("There is no service having specified name: \"" + SERVICE_NAME + "\"")
    exit(1)
instanceID = service['instanceID']
```

### 2. Acquire the service property list to create a service request, then fill property values such as target host and volume settings as needed.

```
"""
Acquiring property list of the service in order to fill property values such as
target host and volume settings before submitting service request
"""
uri = uri_creator.create_prepare_submit_service_uri(instanceID)
submitForm = requests.get(uri, headers=headers, auth=(USER, PASS)).json()
# Update host settings
hostSetting = find(submitForm['parameters'], 'keyName',
"HostSettingsForSingleHost")
hostSettingValue = {
    "hostName" : TARGET_HOST,
    "wwnSettings": [{"wwn": "1111111111111111", "wwnNickname": ""}],
    "iScsiSettings": []
```

```
}
hostSetting['value'] = json.dumps(hostSettingValue)
# Update volume settings
volumeSetting = find(submitForm['parameters'], 'keyName', "VolumeSettings")
volumeSettingValue = json.loads(volumeSetting['value'])
usageOS = find(volumeSettingValue, "volumeUsage", "OS")
usageOS.update({
    'volumeLabel' : 'OS',
    'volumeCapacityInMiB' : 10240
})
usageApp = find(volumeSettingValue, "volumeUsage", "App")
usageApp.update({
    'volumeLabel' : 'App',
    'volumeCapacityInMiB' : 10240
})
usageData = find(volumeSettingValue, "volumeUsage", "Data")
usageData.update({
    'volumeLabel' : 'Data',
    'volumeCapacityInMiB' : 10240
})
volumeSetting['value'] = json.dumps(volumeSettingValue)
# Update task settings
taskSettings = findByProperty(submitForm['parameters'], 'scheduleType')
taskSettings.update({
    'name' : 'Task from API'
})
})
```

### 3. Submit the service request.

```
"""
Submit service request
"""
uri = uri_creator.create_submit_service_uri(instanceID)
ret = do_action("post", uri, submitForm, USER, PASS).json()
```

### 4. Wait for the task to finish.

```
"""
Wait for task is done
"""
def wait_for_task_done(uri):
    status = ""
    while(status != "completed" and status != "failed"):
        time.sleep(LOOP_TIME)
        r = requests.get(uri, headers=headers, auth=(USER, PASS)).json()
        status = r["status"]
    return status

uri = ret["affectedResource"][1]
taskStatus = wait_for_task_done(uri)
```

```
if taskStatus != "completed":  
    sys.exit(1)
```

## 5. Get result information from the task such as LUN path information.

```
"""  
Get result (LUN Path information)  
"""  
taskId = extract_taskId_from_getUri(uri)  
uri = uri_creator.create_get_propertyValues_for_task_uri(taskId)  
r = requests.get(uri, headers=headers, auth=(USER, PASS)).json()  
  
def propertyValueEndsWith(elem):  
    return elem["keyName"].endswith("LunPaths")  
  
elem = findElem(r["data"], propertyValueEndsWith)  
lunPaths = json.loads(elem["value"])["values"]  
for lunPath in lunPaths:  
    print("-----")  
    print("Storage\t"+str(lunPath["storageSystemModel"])  
+" "+str(lunPath["storageSystemSerialNumber"])+")")  
    print("LDEV#\t"+str(lunPath["ldevId"]))  
    print("LUN\t"+str(lunPath["lun"]))  
    print("Port\t"+str(lunPath["portName"]))  
    print("WWN\t"+str(lunPath["hostPortName"]))  
    print("-----")
```

## URI creation

```
"""  
This class creates URI for REST API  
"""  
class UriCreator():  
    def __init__(self, host, port="22015", product="Automation", protocol="http",  
version="v1"):  
        self.host = host  
        self.port = port  
        self.product = product  
        self.protocol = protocol  
        self.version = version  
        self.encode = "utf-8"  
  
    def create_url_base(self):  
        uri = self.protocol + "://" + self.host + ":" + self.port + "/" +  
self.product + "/" + self.version + "/"  
        return uri  
  
    def create_get_service_by_name_uri(self, name):  
        uri = self.create_url_base() + "/objects/Services?HQL::filter=name='"+name+"'"  
        return uri
```

```
def create_prepare_submit_service_uri(self, id):
    uri = self.create_url_base() + "/objects/Services/" + str(id) + "/actions/submit"
    return uri

def create_submit_service_uri(self, id):
    uri = self.create_url_base() + "/objects/Services/" + str(id) + "/actions/submit/invoke"
    return uri

def create_get_propertyValues_for_task_uri(self, taskID):
    uri = self.create_url_base() + "/objects/PropertyValues?taskID=" + str(taskID)
    return uri
```

### Utility functions in sample code

#### URI Creation and utility functions

```
"""
Print json object information in human readable format
"""
def prettyPrint(jsonObj):
    print(json.dumps(jsonObj, sort_keys=True, indent=4))

"""
Find element of which property and value equals to specified ones from array
"""
def find(array, property, value):
    for elem in array:
        if property in elem.keys() and elem[property] == value:
            return elem
    return

"""
Find element of which property name equals to specified one from array
"""
def findByProperty(array, property):
    for elem in array:
        if property in elem.keys():
            return elem
    return

"""
Find elem satisfying specified condition from array
"""
def findElem(array, func):
    for elem in array:
        if func(elem):
            return elem
    return None
```

```
"""
execute the HTTP request (POST or PUT)
@param method_type HTTP request method (POST or PUT)
@param uri URI to execute HTTP method?
@param body the information of resource
"""
def do_action(method_type, uri, body, user, passwd):
    try:
        if method_type == "put":
            r = requests.put(uri, headers=headers, data=json.dumps(body), auth=(user,
passwd))
        elif method_type == "post":
            r = requests.post(uri, headers=headers, data=json.dumps(body),
auth=(user, passwd))
        if r.status_code == http.client.OK:
            return r
        else:
            raise(Exception('ERROR HTTP Status = ' + str(r.status_code)))
            return None
    except requests.exceptions.ConnectionError as e:
        print(str(e))
        print("URI : " + uri)
        sys.exit("failed to connect to REST API server. Please check URI parameters.")
    except requests.HTTPError as e:
        print(str(e))
        sys.exit("HTTP error.")
    except Exception as e:
        print(str(e))
        sys.exit("failed to request.")

"""
Wait for task done (completed/failed)
"""
def wait_for_task_done(uri):
    print("Waiting task")
    status = ""
    while(status != "completed" and status != "failed"):
        print(".", end="")
        time.sleep(LOOP_TIME)
        r = requests.get(uri, headers=headers, auth=(USER, PASS)).json()
        status = r["status"]
    print("")
    print("Task is finished: " + status)
    return status

"""
Extract instanceID of Task from URI 'http://...../Tasks/{instanceID}'
"""
def extract_taskId_from_getUri(uri):
```

```
m = re.search(r"[.]*\./([\d]+)$", uri)
return m.group(1)
```

## Get result by task ID after task completed

### Overview

Get LUN Path Information after the task for the `Allocate Volumes with Smart Provisioning` service is done by using the given task ID.

Name	Description
Use case title	Get result by task ID after the task completes
Description	Get LUN Path Information after the <code>Allocate Volumes with Smart Provisioning</code> service task is done by using the specified task ID.
Files	<p><code>sample_code.py</code>, <code>uri_creator.py</code></p> <p>These files are located in the following sample code download folder:  <code>UC_GET_RESULT_BY_TASK_ID</code></p>

### REST APIs to call

```
GET https://host:port/Automation/v1/objects/PropertyValues?taskId=instanceID
```

- Get result information (property values) for the task including LUN Path Information, then find LUN Path Information from the result by using the LUN Path Information `keyname`, which ends with `LunPaths`

In the following sample code, the URIs are created by `uri_creator.py`. See *URI Creation and Utility Functions* for details.

### Sample code

Variables - The following variables are used in the sample code:

Name	Description
USER	Username of API user account
PASS	Password of API user account
TASK_ID	The task ID to use for viewing property values

## Get task result information such as LUN path information

```

"""
Get result (LUN Path information)
"""
uri = uri_creator.create_get_propertyValues_for_task_uri(TASK_ID)
r = requests.get(uri, headers=headers, auth=(USER, PASS)).json()

if r['count'] == 0:
    print("There is no task having specified ID: " + str(TASK_ID))
    sys.exit(1)

def propertyValueEndsWith(elem):
    return elem["keyName"].endswith("LunPaths")
elem = findElem(r["data"], propertyValueEndsWith)

lunPaths = json.loads(elem["value"])["values"]
for lunPath in lunPaths:
    print("-----")
    print("Storage\t"+str(lunPath["storageSystemModel"])
    +("\t"+str(lunPath["storageSystemSerialNumber"])+")")
    print("LDEV#\t"+str(lunPath["ldevId"]))
    print("LUN\t"+str(lunPath["lun"]))
    print("Port\t"+str(lunPath["portName"]))
    print("WWN\t"+str(lunPath["hostPortName"]))
    print("-----")

```

## URI creation and utility functions

### URI creation

```

"""
This class creates URI for REST API
"""
class UriCreator():
    def __init__(self, host, port="22015", product="Automation", protocol="http",
version="v1"):
        self.host = host
        self.port = port
        self.product = product
        self.protocol = protocol
        self.version = version
        self.encode = "utf-8"

    def create_url_base(self):
        uri = self.protocol + "://" + self.host + ":" + self.port + "/" +
self.product + "/" + self.version + "/"
        return uri

    def create_get_propertyValues_for_task_uri(self, taskID):

```

```
uri = self.create_url_base() + "/objects/PropertyValues?taskId=" + str(taskID)
return uri
```

### Utility functions in sample code

```
"""
Print json object information in human readable format
"""
def prettyPrint(jsonObj):
    print(json.dumps(jsonObj, sort_keys=True, indent=4))

"""
Find element of which property and value equals to specified ones from array
"""
def find(array, property, value):
    for elem in array:
        if property in elem.keys() and elem[property] == value:
            return elem
    return

"""
Find elem satisfying specified condition from array
"""
def findElem(array, func):
    for elem in array:
        if func(elem):
            return elem
    return None
```

## Use cases for finding and managing tasks

Learn how to use the Ops Center Automator REST API to find and manage tasks.

To access the sample code files referenced in the following use cases and get information on how to set up your environment to run the sample code, access the Ops Center documentation: <https://docs.hitachivantara.com/home>. To find the library, enter "Ops Center Product Documentation Library (PDL)" in the search box.

Download and extract the Ops Center Product Documentation Library (PDL), go to the Automator folder, and select the Hitachi Ops Center Automator API Sample Scripts zip file.

## Find long-running tasks

### Overview

Find tasks running longer than expected by filtering tasks using the task status of `longRunning`.



Name	Description
Use case title	Find long running tasks
Description	Find tasks running longer than expected by filtering tasks by status <code>longRunning</code>
Files	<code>sample_code.py</code> , <code>uri_creator.py</code> These files are located in the following sample code download folder: <code>UC_GET_LONG_RUNNING_TASKS</code>

### REST APIs to call

```
GET https://host:port/Automation/v1/objects/Tasks?
HQL::filter=status='longRunning'&HQL::sortBy=stepStartTime%20ASC
```

- Find long running tasks by filtering tasks by the status `longRunning` in ascending order of `startTime`
- Specify the query string `HQL::filter=status='longRunning'` to get only tasks that are running long
- Specify the query string `HQL::sortBy=stepStartTime%20ASC` to get tasks in ascending order of `stepStartTime`
- For details about the query string and resource attributes such as `name`, see the API command set topics.

In the following sample code, the URIs are created by `uri_creator.py`. See *URI Creation and Utility Functions* for details.

### Sample code

Variables - The following variables are used in the sample code:

Name	Description
USER	User name of API user account
PASS	Password of API user account

Find tasks that are running long.

```
"""
Find long running tasks
"""
filterCriteria = "HQL::filter=status='longRunning'"
sortCriteria = "HQL::sortBy=stepStartTime%20ASC"
criteria = filterCriteria + "&" + sortCriteria
```

```

uri = uri_creator.create_get_tasks_with_criteria_uri(criteria)
r = requests.get(uri, headers=headers, auth=(USER, PASS))

data = r.json()['data']
if len(data) == 0:
    print("There are no long running tasks")
    sys.exit(1)
for task in data:
    print(task['name'] + "\t" + "Step Start Time: " + task['stepStartTime'])
sys.exit(0)

```

## URI creation and utility functions

### URI creation

```

"""
This class creates URI for REST API
"""
class UriCreator():
    def __init__(self, host, port="22015", product="Automation", protocol="http",
version="v1"):
        self.host = host
        self.port = port
        self.product = product
        self.protocol = protocol
        self.version = version
        self.encode = "utf-8"

    def create_url_base(self):
        uri = self.protocol + "://" + self.host + ":" + self.port + "/" +
self.product + "/" + self.version + "/"
        return uri

    def create_get_tasks_with_criteria_uri(self, criteria):
        uri = self.create_url_base() + "/objects/Tasks?" + criteria
        return uri

```

### Utility functions in sample code

```

"""
Print json object information in human readable format
"""
def prettyPrint(jsonObj):
    print(json.dumps(jsonObj, sort_keys=True, indent=4))

```

## Find tasks waiting for user input

### Overview

Find tasks waiting for user's input by filtering tasks through the `waitingForInput` status.

Name	Description
Use case title	Find tasks waiting for user input
Description	Find tasks waiting for user input by filtering tasks by status <code>waitingForInput</code>
Files	<p><code>sample_code.py</code>, <code>uri_creator.py</code></p> <p>These files are located in the following sample code download folder:  <code>UC_GET_TASKS_WAITING_INPUT</code></p>

### REST APIs to call

```
GET https://host:port/Automation/v1/objects/Tasks?HQL::filter=status='waitingForInput, '&HQL::sortBy=startTime%20ASC
```

- Find tasks waiting for user input by filtering tasks by status `waitingForInput`, in ascending order of `startTime`
- Specify the query string `HQL::filter=status='waitingForInput, '` to get only tasks waiting for user input
- Specify the query string `HQL::sortBy=startTime%20ASC` to get tasks in ascending order of `startTime`
- For details about the query string and resource attributes such as `name`, see the API command set topics.

In the following sample code, the URIs are created by `uri_creator.py`. See *URI Creation and Utility Functions* for details.

### Sample code

Variables - The following variables are used in the sample code:

Name	Description
USER	User name of API user account
PASS	Password of API user account

**Find tasks waiting for user input.**

```

"""
Find tasks waiting for user's input
"""

filterCriteria = "HQL::filter=status='waitingForInput'"
sortCriteria = "HQL::sortBy=startTime%20ASC"
criteria = filterCriteria + "&" + sortCriteria

uri = uri_creator.create_get_tasks_with_criteria_uri(criteria)
r = requests.get(uri, headers=headers, auth=(USER, PASS))

data = r.json()['data']
if len(data) == 0:
    print("There are no long running tasks")
    sys.exit(1)
for task in data:
    print(task['name'] + "\t" + "Start Time: " + task['startTime'])
sys.exit(0)

```

**URI creation and utility functions****URI creation**

```

"""
This class creates URI for REST API
"""

class UriCreator():
    def __init__(self, host, port="22015", product="Automation", protocol="http",
version="v1"):
        self.host = host
        self.port = port
        self.product = product
        self.protocol = protocol
        self.version = version
        self.encode = "utf-8"

    def create_url_base(self):
        uri = self.protocol + "://" + self.host + ":" + self.port + "/" +
self.product + "/" + self.version + "/"
        return uri

    def create_get_tasks_with_criteria_uri(self, criteria):
        uri = self.create_url_base() + "/objects/Tasks?" + criteria
        return uri

```

## Utility functions in sample code

```

"""
Print json object information in human readable format
"""
def prettyPrint(jsonObj):
    print(json.dumps(jsonObj, sort_keys=True, indent=4))

```

## Stop running all tasks by service name

### Overview

Stop running all tasks associated with a service name.

Name	Description
Use case title	Stop all running tasks by service name
Description	Stop all running tasks by specified service name
Files	<p>sample_code.py, uri_creator.py</p> <p>These files are located in the following sample code download folder:</p> <p>UC_STOP_ALL_RUNNING_TASKS_BY_NAME</p>

### REST APIs to call

- GET `https://host:port/Automation/v1/objects/Tasks?HQL::filter=serviceName='Allocate Volumes with Smart Provisioning'%20and%20status%20in%20['InProgress','InProgressWithError','waitingForInput','longRunning']"`
  - Find all running tasks related to the specified service by filtering tasks by `serviceName` and `status`
  - Specify the query string `HQL::filter=serviceName='Allocate Volumes with Smart Provisioning'%20and%20status%20in%20['InProgress','InProgressWithError','waitingForInput','longRunning']'` to get only running tasks related to the specified service
  - For details about the query string and resource attributes such as `serviceName`, see the API command set topics.
- GET `https://host:port/Automation/v1/objects/Tasks/instanceID/actions/stop`
  - Acquire the property list of the task to stop

3. POST `https://host:port/Automation/v1/objects/Tasks/instanceID/actions/stop/invoke`
  - Submit a stop request with the property list
4. GET `https://host:port/Automation/v1/objects/Tasks/instanceID`
  - Get task information to verify that the task is stopped

In the following sample code, the URIs are created by `uri_creator.py`. See *URI Creation and Utility Functions* for details.

### Sample code

Variables - The following variables are used in the sample code:

Name	Description
USER	Username of API user account
PASS	Password of API user account
SERVICE_NAME	Service name of the tasks you want to stop

1. Find all running tasks related to the specified service.

```

"""
Find all running tasks regarding specified service
"""
uri = uri_creator.create_get_running_tasks_by_service_name_uri(SERVICE_NAME)
tasks = requests.get(uri, headers=headers, auth=(USER, PASS)).json()

if tasks['count'] == 0:
    print("There is no running task regarding specified service: " +
SERVICE_NAME)
    sys.exit(1)

"""
Stop tasks by loop
"""
for t in tasks['data']:
    instanceID = t['instanceID']
    print ("stopping task with instanceID:"+str(instanceID)+"...")
    """
    Prepare a stop request -> See Section #2
    """

    """
    Commit a stop request -> See Section #3
    """

```

```

"""
Wait for task stopped -> See Section #4
"""

```

## 2. Acquire the property list of the task to stop.

```

"""
Acquiring property list of the task to stop it
"""
uri = uri_creator.create_prepare_stop_tasks_uri(instanceID)
task = requests.get(uri, headers=headers, auth=(USER, PASS)).json()

```

## 3. Submit the stop request.

```

"""
Submit stop request
"""
uri = uri_creator.create_stop_tasks_uri(instanceID)
res = do_action("post", uri, task, USER, PASS).json()

```

## 4. Get the task information to verify that the task is stopped.

```

"""
Wait for task stopped
"""
#You can get url from response of stop request, or construct uri by yourself.
#uri = ret["affectedResource"][1]
uri = uri_creator.create_get_task_uri(instanceID)
wait_for_task_done(uri)

```

## URI creation and utility functions

### URI creation

```

"""
This class creates URI for REST API
"""
class UriCreator():
    def __init__(self, host, port="22015", product="Automation", protocol="http",
version="v1"):
        self.host = host
        self.port = port
        self.product = product
        self.protocol = protocol
        self.version = version
        self.encode = "utf-8"
    def create_url_base(self):
        uri = self.protocol + "://" + self.host + ":" + self.port + "/" +
self.product + "/" + self.version + "/"
        return uri

```

```

def create_get_task_uri(self, taskID):
    uri = self.create_url_base() + "objects/Tasks/" + str(taskID)
    return uri

def create_get_running_tasks_by_service_name_uri(self, serviceName):
    uri = self.create_url_base() + "objects/Tasks?
HQL::filter=serviceName='"+serviceName+"'%20and%20status%20in%20['InProgress',
'inProgressWithError','waitingForInput','longRunning']"
    return uri

def create_prepare_stop_tasks_uri(self, taskID):
    uri = self.create_url_base() + "objects/Tasks/"+str(taskID)+"/actions/stop"
    return uri

def create_stop_tasks_uri(self, taskID):
    uri = self.create_url_base() + "objects/Tasks/"+str(taskID)+"/actions/stop/
invoke"
    return uri

```

### Utility functions in sample code

```

"""
Print json object information in human readable format
"""
def prettyPrint(jsonObj):
    print(json.dumps(jsonObj, sort_keys=True, indent=4))

"""
execute the HTTP request (POST or PUT)
@param method_type HTTP request method (POST or PUT)
@param uri URI to execute HTTP method?
@param body the information of resource
"""
def do_action(method_type, uri, body, user, passwd):
    try:
        if (method_type == "put"):
            r = requests.put(uri, headers=headers, data=json.dumps(body), auth=(user,
passwd))
        elif (method_type == "post"):
            r = requests.post(uri, headers=headers, data=json.dumps(body),
auth=(user, passwd))
        if r.status_code == http.client.OK:
            return r
        else:
            raise (Exception('ERROR HTTP Status = ' + str(r.status_code)))
            return None
    except requests.exceptions.ConnectionError as e:
        print(str(e))
        print("URI : " + uri)

```



```

        sys.exit("failed to connect to REST API server. Please check URI parameters.")
    except requests.HTTPError as e:
        print(str(e))
        sys.exit("HTTP error.")
    except Exception as e:
        print(str(e))
        sys.exit("failed to request.")

"""
Wait for task done (completed/failed)
"""
def wait_for_task_done(uri):
    print("Waiting task")
    status = ""
    while(status != "completed" and status != "failed"):
        print(".", end="")
        time.sleep(LOOP_TIME)
        r = requests.get(uri, headers=headers, auth=(USER, PASS)).json()
        status = r["status"]
    print("")
    print("Task is finished: " + status)
    return status

```

## Stop running a task by task ID

### Overview

Stop running task by the task ID.

Name	Description
Use case title	Stop the running task specified by the task ID
Description	Stop the running task specified by the task ID
Files	<p>sample_code.py, uri_creator.py</p> <p>These files are located in the following sample code download folder:</p> <p>UC_STOP_RUNNING_TASK</p>

### REST APIs to call

1. GET <https://host:port/Automation/v1/objects/Tasks/instanceID>
  - Get the task specified by the task ID, and verify that the task is running

2. GET `https://host:port/Automation/v1/objects/Tasks/instanceID/actions/stop`
  - Acquiring the property list of the task to stop
3. POST `https://host:port/Automation/v1/objects/Tasks/instanceID/actions/stop/invoke`
  - Submit a stop request with the property list
4. GET `http(s)://host:port/Automation/v1/objects/Tasks/instanceID`
  - Get task information to see if the task is stopped

### Sample code

Variables - The following variables are used in the sample code:

Name	Description
USER	Username of API user account
PASS	Password of API user account
TASK_ID	Task ID of the task to stop

1. Get the tasks with the specified task ID, and stop the task if it is running.

```

"""
Get the task by given taskID, and stop it if the task is running
"""
uri = uri_creator.create_get_task_uri(TASK_ID)
t = requests.get(uri, headers=headers, auth=(USER, PASS)).json()
if t['status']=='InProgress':
    instanceID = t['instanceID']
    print ("stopping task with instanceID:"+str(instanceID)+"...")
    """
    Prepare a stop request --> See Section #2
    """

    """
    Commit a stop request --> See Section #3
    """

    """
    Wait for task stopped --> See Section #4
    """

else:
    print("The specified task is not running.")

```

**2. Acquire the property list of the task to stop.**

```
"""
Acquiring property list of the task to stop it
"""
uri = uri_creator.create_prepare_stop_tasks_uri(instanceID)
task = requests.get(uri, headers=headers, auth=(USER, PASS)).json()
```

**3. Submit the stop request.**

```
"""
Submit stop request
"""
uri = uri_creator.create_stop_tasks_uri(instanceID)
do_action("post", uri, task, USER, PASS).json()
```

**4. Wait for the task to stop.**

```
"""
Wait for task stopped
"""
#You can get url from response of stop request, or construct uri by yourself.
#uri = ret["affectedResource"][1]
uri = uri_creator.create_get_task_uri(instanceID)
wait_for_task_done(uri)
```

**URI creation and utility functions****URI creation**

```
"""
This class creates URI for REST API
"""
class UriCreator():
    def __init__(self, host, port="22015", product="Automation", protocol="http",
version="v1"):
        self.host = host
        self.port = port
        self.product = product
        self.protocol = protocol
        self.version = version
        self.encode = "utf-8"

    def create_url_base(self):
        uri = self.protocol + "://" + self.host + ":" + self.port + "/" +
self.product + "/" + self.version + "/"
        return uri

    def create_get_task_uri(self, taskID):
        uri = self.create_url_base() + "objects/Tasks/" + str(taskID)
        return uri
```

```

def create_prepare_stop_tasks_uri(self, taskID):
    uri = self.create_url_base() + "objects/Tasks/"+str(taskID)+"/actions/stop"
    return uri

def create_stop_tasks_uri(self, taskID):
    uri = self.create_url_base() + "objects/Tasks/"+str(taskID)+"/actions/stop/
invoke"
    return uri

```

### Utility functions in sample code

```

"""
Print json object information in human readable format
"""
def prettyPrint(jsonObj):
    print(json.dumps(jsonObj, sort_keys=True, indent=4))

"""
execute the HTTP request (POST or PUT)
@param method_type HTTP request method (POST or PUT)
@param uri URI to execute HTTP method?
@param body the information of resource
"""
def do_action(method_type, uri, body, user, passwd):
    try:
        if method_type == "put":
            r = requests.put(uri, headers=headers, data=json.dumps(body), auth=(user,
passwd))
        elif method_type == "post":
            r = requests.post(uri, headers=headers, data=json.dumps(body),
auth=(user, passwd))
        if r.status_code == http.client.OK:
            return r
        else:
            raise(Exception('ERROR HTTP Status = ' + str(r.status_code)))
            return None
    except requests.exceptions.ConnectionError as e:
        print(str(e))
        print("URI : " + uri)
        sys.exit("failed to connect to REST API server. Please check URI parameters.")
    except requests.HTTPError as e:
        print(str(e))
        sys.exit("HTTP error.")
    except Exception as e:
        print(str(e))
        sys.exit("failed to request.")

"""
Wait for task done (completed/failed)
"""

```

```

def wait_for_task_done(uri):
    print("Waiting task")
    status = ""
    while(status != "completed" and status != "failed"):
        print(".", end="")
        time.sleep(LOOP_TIME)
        r = requests.get(uri, headers=headers, auth=(USER, PASS)).json()
        status = r["status"]
    print("")
    print("Task is finished: " + status)
    return status

```

## Archive completed tasks

### Overview

Archive old tasks that have completed 24 hours or more from the current time and are not marked as a TODO task.

Name	Description
Use case title	Archive completed tasks
Description	Archive tasks that completed 24 hours or more from the current time and are not marked as a TODO task.
Files	<p>sample_code.py, uri_creator.py</p> <p>These files are located in the following sample code download folder: UC_ARCHIVE_TASKS</p>

### REST APIs to call

- GET `https://host:port/Automation/v1/objects/Tasks?HQL::filter=status='completed'%20and%20todo=false%20and%20completionTime<'{24 hours before current time}'`
  - Get tasks that completed 24 hours or more from the current time and are not marked as a TODO task.
  - Filter criteria `status='completed'` is to filter tasks with a status of 'completed'
  - Filter criteria `todo=false` is to filter tasks that are marked as TODO
  - Filter criteria `completionTime<'{24 hours before current time}'` is to filter tasks that completed 24 hours or more before the current time. The actual date/time must be specified for `{24 hours before current time}` in ISO86010 format.
  - For details about the query string and resource attribute such as `status`, see the API command set topics.

2. GET `https://host:port/Automation/v1/objects/Tasks/instanceID/actions/archive`
  - Acquire the task property list to archive
3. POST `https://host:port/Automation/v1/objects/Tasks/instanceID/actions/archive/invoke`
  - Submit a stop request with the property list
4. GET `https://host:port/Automation/v1/objects/TaskHistories/instanceID`
  - Get archived task information (TaskHistories)
  - Obtain the URL from the response of the API call for the archiving task in Step 3.

### Sample code

Variables - The following variables are used in the sample code:

Name	Description
USER	User name of API user account
PASS	Password of API user account
TASK_ID	Task ID of the tasks you want to stop

1. Get tasks that completed before 24 hours or more from now, and not marked as TODO task.

```

"""
"""

currentTime = datetime.datetime.now().replace(microsecond=0)
before24Hour = currentTime -datetime.timedelta(hours=24)
criteria = "HQL::filter=status='completed'%20and%20toDo=false%20and
%20completionTime<"
+ before24Hour.isoformat() + ""

uri = uri_creator.create_get_tasks_with_criteria_uri(criteria)
r = requests.get(uri, headers=headers,auth=(USER, PASS))

data = r.json()['data']
if len(data) == 0:

    print("There are no long running tasks")
    sys.exit(1)

for task in data:
    print("Trying to archive task: " + task['name'])

"""
Acquiring property list of the task to archive it --> See Section #2

```

```

"""

"""
Archive tasks --> See Section #3
"""

sys.exit(0)

```

## 2. Obtain task property list of the task to archive.

```

"""
Acquiring property list of the task to archive it
"""
uri = uri_creator.create_prepare_archive_task_uri(task["instanceID"])
form = requests.get(uri, headers=headers, auth=(USER, PASS)).json()

```

## 3. Submit the archive request.

```

"""
Submit archive request
"""
uri = uri_creator.create_archive_task_uri(task["instanceID"])
ret = do_action("post", uri, form, USER, PASS).json()

```

## 4. Get archived task information.

```

"""
Check archived history
"""
def findTaskHistoriesURI(elem):
    return "TaskHistories" in elem

uri = findElem(ret["affectedResource"], findTaskHistoriesURI)
ret = requests.get(uri, headers=headers, auth=(USER, PASS)).json()
prettyPrint(ret)

```

## URI creation and utility functions

### URI creation

```

"""
This class creates URI for REST API
"""
class UriCreator():
    def __init__(self, host, port="22015", product="Automation", protocol="http",
version="v1"):
        self.host = host
        self.port = port

```

```

self.product = product
self.protocol = protocol
self.version = version
self.encode = "utf-8"

def create_url_base(self):
    uri = self.protocol + "://" + self.host + ":" + self.port + "/" +
self.product + "/" + self.version + "/"
    return uri

def create_get_tasks_with_criteria_uri(self, criteria):
    uri = self.create_url_base() + "/objects/Tasks?" + criteria
    return uri

def create_prepare_archive_task_uri(self, instanceID):
    uri = self.create_url_base() + "/objects/Tasks/" + str(instanceID) + "/"
actions/archive"
    return uri

def create_archive_task_uri(self, instanceID):
    uri = self.create_url_base() + "/objects/Tasks/" + str(instanceID) + "/"
actions/archive/invoke"
    return uri

```

### Utility functions in sample code

```

"""
Print json object information in human readable format
"""
def prettyPrint(jsonObj):
    print(json.dumps(jsonObj, sort_keys=True, indent=4))

"""
Find elem satisfying specified condition from array
"""
def findElem(array, func):
    for elem in array:
        if func(elem):
            return elem
    return None

"""
execute the HTTP request (POST or PUT)
@param method_type HTTP request method (POST or PUT)
@param uri URI to execute HTTP method?
@param body the information of resource
"""
def do_action(method_type, uri, body, user, passwd):
    try:
        if (method_type == "put"):

```



```

        r = requests.put(uri, headers=headers, data=json.dumps(body), auth=(user,
passwd))
    elif(method_type == "post"):
        r = requests.post(uri, headers=headers, data=json.dumps(body),
auth=(user, passwd))
        if r.status_code == http.client.OK:
            return r
        else:
            raise(Exception('ERROR HTTP Status = ' + str(r.status_code)))
            return None
except requests.exceptions.ConnectionError as e:
    print(str(e))
    print("URI : " + uri)
    sys.exit("failed to connect to REST API server. Please check URI parameters.")
except requests.HTTPError as e:
    print(str(e))
    sys.exit("HTTP error.")
except Exception as e:
    print(str(e))
    sys.exit("failed to request.")

```

## Cancel all scheduled tasks by service name

### Overview

Get all the scheduled tasks for the service through the specified service name, then cancel the scheduled tasks.

Name	Description
Use case title	Cancel all scheduled tasks for the specified service name.
Description	Get all scheduled tasks for the service with the specified service name, and then cancel the scheduled tasks.
Files	<p>sample_code.py, uri_creator.py</p> <p>These files are located in the following sample code download folder: UC_CANCEL_ALL_SCHEDULED_TASKS_BY_NAME</p>

**REST APIs to call**

1. GET `https://host:port/Automation/v1/objects/Tasks?HQL::filter=serviceName='Allocate Volumes with Smart Provisioning'%20and%20status='waiting'`
  - Get scheduled tasks for the service `Allocate Volumes with Smart Provisioning` by filtering tasks by service name and task status
  - Specify the query string `HQL::filter=serviceName='Allocate Volumes with Smart Provisioning'%20and%20status='waiting'` to get only scheduled tasks related to the services with the specified name
  - For details about the query string and resource attributes such as `serviceName`, see the API command set topics.
2. GET `https://host:port/Automation/v1/objects/Schedules/instanceID/actions/cancel`
  - Acquire the property list of the scheduled task to cancel by using the scheduled ID assigned to the task
3. POST `https://host:port/Automation/v1/objects/Schedules/instanceID/actions/cancel/invoke`
  - Submit a cancellation request with the property list
4. GET `https://host:port/Automation/v1/objects/Tasks/instanceID`
  - Get task to verify that the status is canceled

For other actions for the scheduled tasks, you can use same approach. The only difference is the name of actions such as `resume`, `suspend`.

**Sample code**

Variables - The following variables are used in the sample code:

Name	Description
USER	User name of API user account
PASS	Password of API user account
SERVICE_NAME	Service name of the tasks you want to cancel.

1. Get waiting tasks with the specified service name.

```

"""
Get waiting tasks with given service name
"""
criteria = "HQL::filter=serviceName='" + SERVICE_NAME + "'%20and
%20status='waiting'"

uri = uri_creator.create_get_tasks_with_criteria_uri(criteria)
tasks = requests.get(uri, headers=headers, auth=(USER, PASS)).json()

```

```

if len(tasks) == 0:
    print("There is no waiting tasks to be canceled")
    sys.exit(1)

for task in tasks['data']:
    scheduleID = task['scheduleID']
    print("Canceling scheduled task: " + task["name"])

    """
        Acquiring property list of the scheduled task to cancel it --> See #2
section
    """

    """
        Submit cancellation request--> See #3 section
    """

    """
        Get task to check if status is "canceled" --> See #4 section
    """

sys.exit(0)

```

## 2. Acquire property list of the scheduled task to cancel.

```

"""
Acquiring property list of the scheduled task to cancel it
"""
uri = uri_creator.create_prepare_cancel_schedule_task_uri(scheduleID)
task = requests.get(uri, headers=headers, auth=(USER, PASS)).json()

```

## 3. Submit cancellation request.

```

"""
Submit cancellation request
"""
uri = uri_creator.create_cancel_schedule_task_uri(scheduleID)
do_action("post", uri, task, USER, PASS).json()

```

## 4. Get task to verify that he status is canceled.

```

"""
Get task to check if status is "canceled"
"""
uri = uri_creator.create_get_task_uri(task["instanceID"])
updatedTask = requests.get(uri, headers=headers, auth=(USER, PASS)).json()
print(updatedTask["name"] + ": " + updatedTask["status"])

```

## URI creation and utility functions

### URI creation

```

"""
This class creates URI for REST API
"""
class UriCreator():
    def __init__(self, host, port="22015", product="Automation", protocol="http",
version="v1"):
        self.host = host
        self.port = port
        self.product = product
        self.protocol = protocol
        self.version = version
        self.encode = "utf-8"

    def create_url_base(self):
        uri = self.protocol + "://" + self.host + ":" + self.port + "/" +
self.product + "/" + self.version + "/"
        return uri

    def create_url_base(self):
        uri = self.protocol + "://" + self.host + ":" + self.port + "/" +
self.product + "/" + self.version + "/"
        return uri

    def create_get_task_uri(self, instanceID):
        uri = self.create_url_base() + "objects/Tasks/" + str(instanceID)
        return uri

    def create_get_tasks_with_criteria_uri(self, criteria):
        uri = self.create_url_base() + "objects/Tasks?" + criteria
        return uri

    def create_prepare_cancel_schedule_task_uri(self, schduleID):
        uri = self.create_url_base() + "objects/Schedules/"+str(schduleID)+"/actions/
cancel"
        return uri

    def create_cancel_schedule_task_uri(self, schduleID):
        uri = self.create_url_base() + "objects/Schedules/"+str(schduleID)+"/actions/
cancel/invoke"
        return uri

```

### Utility functions in sample code

```

"""
Print json object information in human readable format
"""
def prettyPrint(jsonObj):

```

```

print(json.dumps(jsonObj, sort_keys=True, indent=4))

"""
execute the HTTP request (POST or PUT)
@param method_type HTTP request method (POST or PUT)
@param uri URI to execute HTTP method?
@param body the information of resource
"""
def do_action(method_type, uri, body, user, passwd):
    try:

        if method_type == "put":
            r = requests.put(uri, headers=headers, data=json.dumps(body), auth=(user,
passwd))
        elif method_type == "post":
            r = requests.post(uri, headers=headers, data=json.dumps(body),
auth=(user, passwd))
            if r.status_code == http.client.OK:
                return r
            else:
                raise(Exception('ERROR HTTP Status = ' + str(r.status_code)))
                return None
    except requests.exceptions.ConnectionError as e:
        print(str(e))
        sys.exit("failed to connect to REST API server. Please check URI parameters.")
    except requests.HTTPError as e:
        print(str(e))
        sys.exit("HTTP error.")
    except Exception as e:
        print(str(e))
        sys.exit("failed to request.")

```

## Cancel scheduled task by task ID

### Overview

Cancel a scheduled task by the task ID.

Name	Description
Use case title	Cancel the scheduled task with the specified task ID.
Description	Get a task by task ID and cancel it if the task is waiting.

Name	Description
Files	<p>sample_code.py, uri_creator.py</p> <p>These files are located in the following sample code download folder:</p> <p>UC_CANCEL_SCHEDULED_TASK_BY_TASK_ID</p>

### REST APIs to call

1. GET `https://host:port/Automation/v1/objects/Tasks/instanceID`
  - Get waiting task for the specified task ID
2. GET `https://host:port/Automation/v1/objects/Schedules/instanceID/actions/cancel`
  - Acquire the property list of the scheduled task to cancel by using the task scheduled ID
3. POST `https://host:port/Automation/v1/objects/Schedules/instanceID/actions/cancel/invoke`
  - Submit a cancellation request with the property list
4. GET `https://host:port/Automation/v1/objects/Tasks/instanceID`
  - Get task to verify if the status is canceled

For other actions for the scheduled tasks, you can use same approach. The only difference is the name of actions such as `resume`, `suspend`.

### Sample code

Variables - The following variables are used in the sample code:

Name	Description
USER	User name of API user account
PASS	Password of API user account
TASK_ID	Task ID of the task you want to cancel.

1. Get the waiting task for the specified task ID.

```

"""
Get the task given taskID
"""
uri = uri_creator.create_get_task_uri(TASK_ID)
t = requests.get(uri, headers=headers, auth=(USER, PASS)).json()

if t['status']=='waiting':

```

```

scheduleID = t['scheduleID']

"""
Acquiring property list of the scheduled task to cancel it
"""
uri = uri_creator.create_prepare_cancel_schedule_task_uri(scheduleID)
task = requests.get(uri, headers=headers, auth=(USER, PASS)).json()

"""
Commit a cancellation
"""
uri = uri_creator.create_cancel_schedule_task_uri(scheduleID)
do_action("post", uri, task, USER, PASS).json()

"""
Check if task is canceled
"""
uri = uri_creator.create_get_task_uri(t["instanceID"])
updatedTask = requests.get(uri, headers=headers, auth=(USER, PASS)).json()
print(updatedTask["name"] + ": " + updatedTask["status"])

else:
    print("Failed to cancel: the task is not waiting.")
    sys.exit(1)

sys.exit(0)

```

## 2. Acquire the property list of the scheduled task to cancel it.

```

"""
Acquiring property list of the scheduled task to cancel it
"""
uri = uri_creator.create_prepare_cancel_schedule_task_uri(scheduleID)
task = requests.get(uri, headers=headers, auth=(USER, PASS)).json()

```

## 3. Submit a cancellation request.

```

"""
Submit cancellation request
"""
uri = uri_creator.create_cancel_schedule_task_uri(scheduleID)
do_action("post", uri, task, USER, PASS).json()
print("The task with taskId as "+str(TASK_ID)+" was cancelled successfully.")

```

## 4. Get task to verify that the status is canceled.

```

"""
Get task to check if status is "canceled"
"""
uri = uri_creator.create_get_task_uri(task["instanceID"])

```

```
updatedTask = requests.get(uri, headers=headers, auth=(USER, PASS)).json()
print(updatedTask["name"] + ": " + updatedTask["status"])
```

## URI Creation and Utility Functions

### URI creation

```
# coding:utf-8
"""
This class creates URI for REST API
"""
class UriCreator():
    def __init__(self, host, port="22015", product="Automation", protocol="http",
version="v1"):
        self.host = host
        self.port = port
        self.product = product
        self.protocol = protocol
        self.version = version
        self.encode = "utf-8"

    def create_url_base(self):
        uri = self.protocol + "://" + self.host + ":" + self.port + "/" +
self.product + "/" + self.version + "/"
        return uri

    def create_get_task_uri(self, taskID):
        uri = self.create_url_base() + "objects/Tasks/"+str(taskID)
        return uri

    def create_prepare_cancel_schedule_task_uri(self, schduleID):
        uri = self.create_url_base() + "objects/Schedules/"+str(schduleID)+"/actions/
cancel"
        return uri

    def create_cancel_schedule_task_uri(self, schduleID):
        uri = self.create_url_base() + "objects/Schedules/"+str(schduleID)+"/actions/
cancel/invoke"
        return uri
```

### Utility functions in sample code

```
"""
execute the HTTP request (POST or PUT)
@param method_type HTTP request method (POST or PUT)
@param uri URI to execute HTTP method?
@param body the information of resource
"""
def do_action(method_type, uri, body, user, passwd):
    try:
```



```

if(method_type == "put"):
    r = requests.put(uri, headers=headers, data=json.dumps(body), auth=(user,
passwd))
elif(method_type == "post"):
    r = requests.post(uri, headers=headers, data=json.dumps(body),
auth=(user, passwd))
if r.status_code == http.client.OK:
    return r
else:
    raise(Exception('ERROR HTTP Status = ' + str(r.status_code)))
    return None
except requests.exceptions.ConnectionError as e:
    print(str(e))
    print("URI : " + uri)
    sys.exit("failed to connect to REST API server. Please check URI parameters.")
except requests.HTTPError as e:
    print(str(e))
    sys.exit("HTTP error.")
except Exception as e:
    print(str(e))
    sys.exit("failed to request.")

```

## Suspend all scheduled tasks by service name

### Overview

Get all scheduled tasks for the specified service name, then suspend the scheduled tasks.

Name	Description
Use case title	Suspend all scheduled tasks given service name
Description	Get all scheduled tasks for the service having given service name, then suspend the scheduled tasks
Files	<p>sample_code.py, uri_creator.py</p> <p>These files are located in the following sample code download folder:</p> <p>UC_ALL_SUSPEND_SCHEDULED_TASKS_BY_SERVICE_NAME</p>

**REST APIs to call**

1. GET `https://host:port/Automation/v1/objects/Tasks?HQL::filter=serviceName='Allocate Volumes with Smart Provisioning'%20and%20status='waiting'`
  - Get scheduled tasks for the service `Allocate Volumes with Smart Provisioning` by filtering tasks by service name and task status
  - Specify query string `HQL::filter=serviceName='Allocate Volumes with Smart Provisioning'%20and%20status='waiting'` to get only scheduled tasks related to the services having the name.
  - For detail of query string and resource attribute such as `serviceName`, see the API command set topics.
2. GET `https://host:port/Automation/v1/objects/Schedules/instanceID/actions/suspend`
  - Acquiring property list of the scheduled task to suspend it by using scheduled ID assigned to the task
3. POST `https://host:port/Automation/v1/objects/Schedules/instanceID/actions/suspend/invoke`
  - Submit suspend request with property list
4. GET `https://host:port/Automation/v1/objects/Tasks/instanceID`
  - Get task to verify that status is suspended

**Sample code**

Variables - The following variables are used in the sample code:

Name	Description
USER	Username of API user account
PASS	Password of API user account
SERVICE_NAME	Service name of the tasks you want to cancel

**1. Get waiting tasks with given service name**

```

"""
Get waiting tasks with given service name
"""
criteria = "HQL::filter=serviceName='" + SERVICE_NAME + "'%20and
%20status='waiting'"

uri = uri_creator.create_get_tasks_with_criteria_uri(criteria)
tasks = requests.get(uri, headers=headers, auth=(USER, PASS)).json()

```

```

if len(tasks) == 0:
    print("There is no waiting tasks to be canceled")
    sys.exit(1)

for task in tasks['data']:
    scheduleID = task['scheduleID']
    print("Suspending scheduled task: " + task["name"])

    """
    Prepare to suspend task --> See #2 section
    """

    """
    Commit suspend task --> See #3 section
    """

    """
    Check if task is suspended--> See #4 section
    """

sys.exit(0)

```

## 2. Acquiring property list of the scheduled task to suspend it by using scheduled ID assigned to the task

```

"""
Acquiring property list of the scheduled task to suspend it by using scheduled
ID assigned to the task
"""
uri = uri_creator.create_prepare_suspend_schedule_task_uri(scheduleID)
task = requests.get(uri, headers=headers, auth=(USER, PASS)).json()

```

## 3. Submit suspend request

```

"""
Submit suspend request
"""
uri = uri_creator.create_suspend_schedule_task_uri(scheduleID)
do_action("post", uri, task, USER, PASS).json()

```

## 4. Get task to verify that status is suspended

```

"""
Get task to check if status is "suspended"
"""
uri = uri_creator.create_get_task_uri(task["instanceID"])
updatedTask = requests.get(uri, headers=headers, auth=(USER, PASS)).json()
print(updatedTask["name"] + ": " + updatedTask["status"])

```

## URI creation and utility functions

### URI creation

```

"""
This class creates URI for REST API
"""
class UriCreator():
    def __init__(self, host, port="22015", product="Automation", protocol="http",
version="v1"):
        self.host = host
        self.port = port
        self.product = product
        self.protocol = protocol
        self.version = version
        self.encode = "utf-8"

    def create_url_base(self):
        uri = self.protocol + "://" + self.host + ":" + self.port + "/" +
self.product + "/" + self.version + "/"
        return uri

    def create_get_task_uri(self, instanceID):
        uri = self.create_url_base() + "objects/Tasks/" + str(instanceID)
        return uri

    def create_get_tasks_with_criteria_uri(self, criteria):
        uri = self.create_url_base() + "objects/Tasks?" + criteria
        return uri

    def create_prepare_suspend_schedule_task_uri(self, scheduleID):
        uri = self.create_url_base() + "objects/Schedules/"+str(scheduleID)+"/actions/
suspend"
        return uri

    def create_suspend_schedule_task_uri(self, scheduleID):
        uri = self.create_url_base() + "objects/Schedules/"+str(scheduleID)+"/actions/
suspend/invoke"
        return uri

```

### Utility functions in sample code

```

"""
Print json object information in human readable format
"""
def prettyPrint(jsonObj):
    print(json.dumps(jsonObj, sort_keys=True, indent=4))

"""
execute the HTTP request (POST or PUT)
@param method_type HTTP request method (POST or PUT)

```

```

@param uri URI to execute HTTP method?
@param body the information of resource
"""
def do_action(method_type,uri,body, user, passwd):
    try:

        if(method_type == "put"):
            r = requests.put(uri, headers=headers, data=json.dumps(body), auth=(user,
passwd))
        elif(method_type == "post"):
            r = requests.post(uri, headers=headers, data=json.dumps(body),
auth=(user, passwd))
        if r.status_code == http.client.OK:
            return r
        else:
            raise(Exception('ERROR HTTP Status = ' + str(r.status_code)))
            return None
    except requests.exceptions.ConnectionError as e:
        print(str(e))
        sys.exit("failed to connect to REST API server. Please check URI parameters.")
    except requests.HTTPError as e:
        print(str(e))
        sys.exit("HTTP error.")
    except Exception as e:
        print(str(e))
        sys.exit("failed to request.")

```

## Suspend a scheduled task by task ID

### Overview

Suspend a scheduled task based on a task ID.

Name	Description
Use case title	Suspend a scheduled task with the specified task ID
Description	Suspend a scheduled task with the specified task ID
Files	<p>sample_code.py, uri_creator.py</p> <p>These files are located in the following sample code download folder:</p> <p>UC_SUSPEND_SCHEDULED_TASK_BY_TASK_ID</p>

**REST APIs to call**

1. GET `https://host:port/Automation/v1/objects/Tasks/instanceID`
  - Get a task with the specified ID, and then verify that the status is waiting
2. GET `https://host:port/Automation/v1/objects/Schedules/scheduleID/actions/suspend`
  - Acquiring the property list of the scheduled task to suspend by using the scheduled ID assigned to the task
3. POST `https://host:port/Automation/v1/objects/Schedules/scheduleID/actions/suspend/invoke`
  - Submit suspend request with the information parameters filled
4. GET `https://host:port/Automation/v1/objects/Tasks/instanceID`
  - Get task to verify that the status is suspended.

**Sample code**

Variables - The following variables are used in the sample code:

Name	Description
USER	Username of API user account
PASS	Password of API user account
TASK_ID	Task ID of the task you want to suspend

1. Get task by the specified task ID ("TestB" in this example) .

```

"""
Get task by task ID
"""
uri = uri_creator.create_get_task_uri(TASK_ID)
task = requests.get(uri, headers=headers, auth=(USER, PASS)).json()

if task["status"] == "waiting":
    scheduleID = task['scheduleID']
    print("Suspending scheduled task: " + task["name"])

"""
Prepare to suspend task --> See #2 section
"""

"""
Commit suspend task --> See #3 section
"""

```

```

    """
    Check if task is suspended --> See #4 section
    """

else:
    print("The task can not be suspended")
    sys.exit(1)

sys.exit(0)

```

2. Acquire the property list of the scheduled task to suspend by using the scheduled ID assigned to the task.

```

    """
    Acquiring property list of the scheduled task to suspend it by using scheduled
    ID assigned to the task
    """

uri = uri_creator.create_prepare_suspend_schedule_task_uri(scheduleID)
task = requests.get(uri, headers=headers, auth=(USER, PASS)).json()

```

3. Submit suspend request

```

    """
    Submit suspend request
    """

uri = uri_creator.create_suspend_schedule_task_uri(scheduleID)
do_action("post", uri, task, USER, PASS).json()

```

4. Get task to verify that status is suspended

```

    """
    Get task to check if status is "suspended"
    """

uri = uri_creator.create_get_task_uri(task["instanceID"])
updatedTask = requests.get(uri, headers=headers, auth=(USER, PASS)).json()
print(updatedTask["name"] + ": " + updatedTask["status"])

```

## URI Creation and Utility Functions

### URI creation

```

# coding:utf-8
"""
This class creates URI for REST API
"""

class UriCreator():
    def __init__(self, host, port="22015", product="Automation", protocol="http",
version="v1"):
        self.host = host

```

```

self.port = port
self.product = product
self.protocol = protocol
self.version = version
self.encode = "utf-8"

def create_url_base(self):
    uri = self.protocol + "://" + self.host + ":" + self.port + "/" +
self.product + "/" + self.version + "/"
    return uri

def create_get_task_uri(self, instanceID):
    uri = self.create_url_base() + "objects/Tasks/" + str(instanceID)
    return uri

def create_prepare_suspend_schedule_task_uri(self, scheduleID):
    uri = self.create_url_base() + "objects/Schedules/"+str(scheduleID)+"/actions/
suspend"
    return uri

def create_suspend_schedule_task_uri(self, scheduleID):
    uri = self.create_url_base() + "objects/Schedules/"+str(scheduleID)+"/actions/
suspend/invoke"
    return uri

```

### Utility functions in sample code

```

"""
execute the HTTP request (POST or PUT)
@param method_type HTTP request method (POST or PUT)
@param uri URI to execute HTTP method?
@param body the information of resource
"""
def do_action(method_type, uri, body, user, passwd):
    try:

        if (method_type == "put"):
            r = requests.put(uri, headers=headers, data=json.dumps(body), auth=(user,
passwd))
        elif (method_type == "post"):
            r = requests.post(uri, headers=headers, data=json.dumps(body),
auth=(user, passwd))
        if r.status_code == http.client.OK:
            return r
        else:
            raise (Exception('ERROR HTTP Status = ' + str(r.status_code)))
            return None
    except requests.exceptions.ConnectionError as e:
        print(str(e))
        print("URI : " + uri)

```



```

sys.exit("failed to connect to REST API server. Please check URI parameters.")
except requests.HTTPError as e:
    print(str(e))
    sys.exit("HTTP error.")
except Exception as e:
    print(str(e))
    sys.exit("failed to request.")

```

## Resume all suspended tasks by service name

### Overview

Resume all suspended tasks based on the service name.

Name	Description
Use case title	Resume all suspended tasks specified by service name
Description	Resume all suspended tasks specified by service name
Files	<p>sample_code.py, uri_creator.py</p> <p>These files are located in the following sample code download folder:</p> <p>UC_RESUME_ALL_SUSPENDED_TASKS_BY_SERVICE_NAME</p>

### REST APIs to call

- GET `https://host:port/Automation/v1/objects/Tasks?HQL::filter=serviceName='Allocate Volumes with Smart Provisioning'%20and%20status='suspended'`

  - Get suspended tasks for the Allocate Volumes with Smart Provisioning service by filtering tasks by service name and task status
  - Specify the query string `HQL::filter=serviceName='Allocate Volumes with Smart Provisioning'%20and%20status='suspended'` to get only suspended tasks related to the services with the specified name
  - For details about the query string and resource attributes such as name, see the API command set topics.
- GET `https://host:port/Automation/v1/objects/Schedules/scheduleID/actions/resume`

  - Acquire the property list of the suspended task to resume by using the scheduled ID assigned to the task

3. POST `https://host:port/Automation/v1/objects/Schedules/scheduleID/actions/resume/invoke`
  - Submit resume request with property list
4. GET `https://host:port/Automation/v1/objects/Tasks/instanceID`
  - Get task to verify that the status is waiting

### Sample code

Variables - The following variables are used in the sample code:

Name	Description
USER	User name of API user account
PASS	Password of API user account
SERVICE_NAME	Service name of the tasks to cancel

1. Get suspended tasks with the specified service name.

```

"""
Get suspended tasks with given service name
"""
criteria = "HQL::filter=serviceName='" + SERVICE_NAME + "'%20and
%20status='waiting'"

uri = uri_creator.create_get_tasks_with_criteria_uri(criteria)
tasks = requests.get(uri, headers=headers, auth=(USER, PASS)).json()

if len(tasks) == 0:
    print("There is no waiting tasks to be canceled")
    sys.exit(1)

for task in tasks['data']:
    scheduleID = task['scheduleID']
    print("Suspending scheduled task: " + task["name"])

    """
    Acquiring property list of the suspended task to resume by using scheduled
    ID assigned to the task --> See #2 section
    """

    """
    Submit resume request --> See #3 section
    """

    """
    Check if task is waiting--> See #4 section

```

```
"""
sys.exit(0)
"""
```

2. Acquire a property list of the suspended task to resume by using scheduled ID assigned to the task

```
"""
Prepare resume suspended task
"""
uri = uri_creator.create_prepare_resume_schedule_task_uri(scheduleID)
task = requests.get(uri, headers=headers, auth=(USER, PASS)).json()
```

3. Submit a request to resume.

```
"""
Submit resuming request
"""
uri = uri_creator.create_resume_schedule_task_uri(scheduleID)
do_action("post", uri, task, USER, PASS).json()
```

4. Get task to verify that the status is waiting.

```
"""
Get task to check if status is "waiting"
"""
uri = uri_creator.create_get_task_uri(task["instanceID"])
updatedTask = requests.get(uri, headers=headers, auth=(USER, PASS)).json()
print(updatedTask["name"] + ": " + updatedTask["status"])
```

## URI Creation and Utility Functions

### URI creation

```
"""
This class creates URI for REST API
"""
class UriCreator():
    def __init__(self, host, port="22015", product="Automation", protocol="http",
version="v1"):
        self.host = host
        self.port = port
        self.product = product
        self.protocol = protocol
        self.version = version
        self.encode = "utf-8"

    def create_url_base(self):
        uri = self.protocol + "://" + self.host + ":" + self.port + "/" +
self.product + "/" + self.version + "/"
        return uri
```

```

def create_get_task_uri(self, instanceID):
    uri = self.create_url_base() + "objects/Tasks/" + str(instanceID)
    return uri

def create_get_tasks_with_criteria_uri(self, criteria):
    uri = self.create_url_base() + "objects/Tasks?" + criteria
    return uri

def create_prepare_resume_schedule_task_uri(self, schduleID):
    uri = self.create_url_base() + "objects/Schedules/"+str(schduleID)+"/actions/
resume"
    return uri

def create_resume_schedule_task_uri(self, schduleID):
    uri = self.create_url_base() + "objects/Schedules/"+str(schduleID)+"/actions/
resume/invoke"
    return uri

```

### Utility functions in sample code

```

"""
Print json object information in human readable format
"""
def prettyPrint(jsonObj):
    print(json.dumps(jsonObj, sort_keys=True, indent=4))

"""
execute the HTTP request (POST or PUT)
@param method_type HTTP request method (POST or PUT)
@param uri URI to execute HTTP method?
@param body the information of resource
"""
def do_action(method_type, uri, body, user, passwd):
    try:

        if(method_type == "put"):
            r = requests.put(uri, headers=headers, data=json.dumps(body), auth=(user,
passwd))
        elif(method_type == "post"):
            r = requests.post(uri, headers=headers, data=json.dumps(body),
auth=(user, passwd))
        if r.status_code == http.client.OK:
            return r
        else:
            raise(Exception('ERROR HTTP Status = ' + str(r.status_code)))
            return None
    except requests.exceptions.ConnectionError as e:
        print(str(e))
        sys.exit("failed to connect to REST API server. Please check URI parameters.")
    except requests.HTTPError as e:

```

```

print(str(e))
sys.exit("HTTP error.")
except Exception as e:
    print(str(e))
    sys.exit("failed to request.")

```

## Resume a suspended task by task ID

### Overview

Resume a suspended task for the specified task ID.

Name	Description
Use case title	Resume a suspended task for the specified task ID
Description	Resume a suspended task for the specified task ID
Files	<p>sample_code.py, uri_creator.py</p> <p>These files are located in the following sample code download folder:</p> <p>UC_RESUME_SUSPENDED_TASK_BY_TASK_ID</p>

### REST APIs to call

- GET `https://host:port/Automation/v1/objects/Tasks/instanceID`
  - Get task by as specified by the task ID
- GET `https://host:port/Automation/v1/objects/Schedules/scheduleID/actions/resume`
  - Acquire a property list of the suspended task to resume by using the scheduled ID assigned to the task
- POST `https://host:port/Automation/v1/objects/Schedules/scheduleID/actions/resume/invoke`
  - Submit a resume request with a property list
- GET `https://host:port/Automation/v1/objects/Tasks/instanceID`
  - Get task to verify that the status is waiting

### Sample code

Variables - The following variables are used in the sample code:

Name	Description
USER	User name of API user account
PASS	Password of API user account
TASK_ID	Instance ID of scheduled task to resume

### 1. Get task by specified task ID.

```

"""
Get task by task ID
"""
uri = uri_creator.create_get_task_uri(TASK_ID)
task = requests.get(uri, headers=headers, auth=(USER, PASS)).json()

if task["status"] == "suspended":
    scheduleID = task['scheduleID']
    print("Resuming scheduled task: " + task["name"])

    """
    Acquiring property list of the suspended task to resume by using scheduled
    ID assigned to the task --> See #2 section
    """

    """
    Submit resume request --> See #3 section
    """

    """
    Check if task is waiting --> See #4 section
    """

else:
    print("The task can not be resumed")
    sys.exit(1)

sys.exit(0)

```

### 2. Acquiring the property list of the suspended task to resume using the scheduled ID assigned to the task.

```

"""
Prepare resume suspended task
"""
uri = uri_creator.create_prepare_resume_schedule_task_uri(scheduleID)
task = requests.get(uri, headers=headers, auth=(USER, PASS)).json()

```

**3. Submit a request to resume.**

```

"""
Submit resuming request
"""
uri = uri_creator.create_resume_schedule_task_uri(scheduleID)
do_action("post", uri, task, USER, PASS).json()

```

**4. Get task to verify that the status is waiting.**

```

"""
Check if task is waiting
"""
uri = uri_creator.create_get_task_uri(task["instanceID"])
updatedTask = requests.get(uri, headers=headers, auth=(USER, PASS)).json()
print(updatedTask["name"] + ": " + updatedTask["status"])

```

**URI creation and utility functions****URI creation**

```

"""
This class creates URI for REST API
"""
class UriCreator():
    def __init__(self, host, port="22015", product="Automation", protocol="http",
version="v1"):
        self.host = host
        self.port = port
        self.product = product
        self.protocol = protocol
        self.version = version
        self.encode = "utf-8"

    def create_url_base(self):
        uri = self.protocol + "://" + self.host + ":" + self.port + "/" +
self.product + "/" + self.version + "/"
        return uri

    def create_get_task_uri(self, instanceID):
        uri = self.create_url_base() + "objects/Tasks/" + str(instanceID)
        return uri

    def create_prepare_resume_schedule_task_uri(self, schduleID):
        uri = self.create_url_base() + "objects/Schedules/"+str(schduleID)+"/actions/
resume"
        return uri

    def create_resume_schedule_task_uri(self, schduleID):
        uri = self.create_url_base() + "objects/Schedules/"+str(schduleID)+"/actions/

```

```
resume/invoke"
    return uri
```

### Utility functions in sample code

```
"""
Print json object information in human readable format
"""
def prettyPrint(jsonObj):
    print(json.dumps(jsonObj, sort_keys=True, indent=4))

"""
execute the HTTP request(POST or PUT)
@param method_type HTTP request method(POST or PUT)
@param uri URI to execute HTTP method?
@param body the information of resource
"""
def do_action(method_type,uri,body, user, passwd):
    try:

        if(method_type == "put"):
            r = requests.put(uri, headers=headers, data=json.dumps(body), auth=(user,
passwd))
        elif(method_type == "post"):
            r = requests.post(uri, headers=headers, data=json.dumps(body),
auth=(user, passwd))
        if r.status_code == http.client.OK:
            return r
        else:
            raise(Exception('ERROR HTTP Status = ' + str(r.status_code)))
            return None
    except requests.exceptions.ConnectionError as e:
        print(str(e))
        sys.exit("failed to connect to REST API server. Please check URI parameters.")
    except requests.HTTPError as e:
        print(str(e))
        sys.exit("HTTP error.")
    except Exception as e:
        print(str(e))
        sys.exit("failed to request.")
```

## Resubmit a task

### Overview

Resubmit a task through the specified task ID.



Name	Description
Use case title	Resubmit a task
Description	Resubmit a task
Files	sample_code.py, uri_creator.py These files are located in the following sample code download folder: UC_RESUBMIT_A_TASK

### REST APIs to call

1. GET `https://host:port/Automation/v1/objects/Tasks/taskID/actions/resubmit`
  - Acquire the service property list for which you want to resubmit the request
2. POST `https://host:port/Automation/v1/objects/Tasks/taskID/actions/resubmit/invoke`
  - Submit service request

### Sample code

Variables - The following variables are used in the sample code:

Name	Description
USER	User name of API user account
PASS	Password of API user account
TASK_ID	Task ID of the task to resubmit

1. Acquire the service property list for which you want resubmit a request.

```

"""
Acquiring property list of the service which request is submitted again
"""
uri = uri_creator.create_prepare_resubmit_service_uri(TASK_ID)
prep = requests.get(uri, headers=headers, auth=(USER, PASS)).json()
instanceID = None
for param in prep["parameters"]:
    if 'instanceID' in param:
        instanceID = param["instanceID"]
"""
Send resubmit request
"""

```

```
<!-- See #2 section -->
```

## 2. Submit service request

```
"""
Submit service request
"""
uri = uri_creator.create_resubmit_service_uri(TASK_ID)
ret = do_action("post", uri, prep, USER, PASS).json()
```

## URI creation and utility functions

### URI creation

```
# coding:utf-8
"""
This class creates URI for REST API
"""
class UriCreator():
    def __init__(self, host, port="22015", product="Automation", protocol="http",
version="v1"):
        self.host = host
        self.port = port
        self.product = product
        self.protocol = protocol
        self.version = version
        self.encode = "utf-8"

    def create_url_base(self):
        uri = self.protocol + "://" + self.host + ":" + self.port + "/" +
self.product + "/" + self.version + "/"
        return uri

    def create_prepare_resubmit_service_uri(self, id):
        uri = self.create_url_base() + "objects/Tasks/" + str(id) + "/actions/
resubmit"
        return uri

    def create_resubmit_service_uri(self, id):
        uri = self.create_url_base() + "objects/Tasks/" + str(id) + "/actions/
resubmit/invoke"
        return uri
```

### Utility functions in sample code

```
"""
execute the HTTP request (POST or PUT)
@param method_type HTTP request method (POST or PUT)
@param uri URI to execute HTTP method?
@param body the information of resource
```

```
"""
def do_action(method_type,uri,body, user, passwd):
    try:
        if(method_type == "put"):
            r = requests.put(uri, headers=headers, data=json.dumps(body), auth=(user,
passwd))
        elif(method_type == "post"):
            r = requests.post(uri, headers=headers, data=json.dumps(body),
auth=(user, passwd))
        if r.status_code == http.client.OK:
            return r.json()
        else:
            raise(Exception('ERROR HTTP Status = ' + str(r.status_code)))
            return None
    except requests.exceptions.ConnectionError as e:
        print(str(e))
        print("URI : " + uri)
        sys.exit("failed to connect to REST API server. Please check URI parameters.")
    except requests.HTTPError as e:
        print(str(e))
        sys.exit("HTTP error.")
    except Exception as e:
        print(str(e))
        sys.exit("failed to request.")
```

---

## Chapter 3: Hitachi Ops Center Automator REST API command set

This module describes the Ops Center Automator REST API resource commands, defines the structure and syntax, and also gives code examples.

### Services

A service is an instance of a service template that has been configured to work your provisioning needs through Ops Center Automator. An example is a service that automates volume provisioning for a server (through a submit service action). Several management functions are available for the Services resource.

### Getting a list of services

#### HTTP request syntax (URI)

The following URI allows you to obtain a list of services. You can obtain the `instanceID` of a service to perform a supported service function (such as "deleting a service"). This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/Services
```

#### Request

The body of the request must be empty.

Query Parameters	Filter Condition
serviceTemplateID	equal to the value
serviceGroupID	equal to the value
favorite	equal to the value
tags	include all the values or not (can be specified multiple times by comma delimited string)
propertyKey	equal to the value

Query Parameters	Filter Condition
q	<p>Search the full text of the search target schema. To include all possible values, specify multiple times using half-width space delimited strings.</p> <p><b>Note:</b> Search is case-insensitive.</p> <p>Search target schema:</p> <p>name, description, tags, serviceTemplateName, vendorName</p>

A query parameter is a type of query string.

You can express a query parameter as follows:

```
?Query_parameter=version
```

For example:

```
?serviceGroupID=16731
```

## Response

The response body structure appears as follows:

```
{
  "data": [ { ... } ],
}
```

The following table describes the objects specified as the `data` member.

Output	Resource Name	Number	Description
List of services	Service	0..n	Service resource that matches the search condition

## Return codes

The following table lists the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.

Status code	HTTP name	Description
400	Bad request	Query parameter not valid.
401	Unauthorized	No login privilege.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbxxx" -X GET
https://host:port/Automation/v1/objects/Services?serviceGroupID=5011
```

Request header:

```
GET /Automation/v1/objects/Services?serviceGroupID=5011 HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 05:55:15 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 34dfb124a5fcef089f853d1391341dfbee4cb_vm011150_v0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

## Response body:

```

{
  "data" : [ {
    "instanceID" : 5185,
    "name" : "Allocate Volumes and Add to Oracle Database for AIX",
    "description" : "The service provisions a disk at storage system and adds a disk
to a disk group for the Oracle ASM for AIX.",
    "tags" : "Add New Storage,Oracle Database",
    "serviceTemplateName" : "Allocate Volumes and Add to Oracle Database for AIX",
    "createTime" : "2014-07-31T14:49:36.000+09:00",
    "modifyTime" : "2014-07-31T14:49:36.000+09:00",
    "serviceState" : "test",
    "serviceGroupName" : "test_Automator_SG_1",
    "iconURL" : "https://host:port/Automation/icon/services/
com.hitachi.software.cts.oracle/OracleIntegration_AIX_ProvisioningVolume/01.00.00",
    "vendorName" : "hitachi",
    "version" : "01.00.00",
    "favorite" : false,
    "failedCount" : 0,
    "completedCount" : 0,
    "executedCount" : 0,
    "latest" : true,
    "imageURL" : "https://host:port/Automation/resources/images/overview/
overview.png",
    "supportedScheduleType" : "immediate,schedule,recurrence",
    "supportedActionType" : "",
    "submitCount" : 0,
    "serviceTemplateID" : 1714,
    "serviceGroupID" : 5011
  }, {
    "instanceID" : 5427,
    "name" : "Allocate Volumes and Add to Oracle Database for Solaris",
    "description" : "The service provisions a disk at storage system and adds a disk
to a disk group for the Oracle ASM for Solaris.",
    "tags" : "Add New Storage,Oracle Database",
    "serviceTemplateName" : "Allocate Volumes and Add to Oracle Database for Solaris",
    "createTime" : "2014-07-31T14:49:57.000+09:00",
    "modifyTime" : "2014-07-31T14:49:57.000+09:00",
    "serviceState" : "test",
    "serviceGroupName" : "test_Automator_SG_1",
    "iconURL" : "https://host:port/Automation/icon/services/
com.hitachi.software.cts.oracle/OracleIntegration_Solaris_ProvisioningVolume/
01.00.00",
    "vendorName" : "hitachi",
    "version" : "01.00.00",
    "favorite" : false,
    "failedCount" : 0,
    "completedCount" : 0,
    "executedCount" : 0,
    "latest" : true,

```

```

    "imageURL" : "https://host:port/Automation/resources/images/overview/
overview.png",
    "supportedScheduleType" : "immediate,schedule,recurrence",
"supportedActionType" : "",
    "submitCount" : 0,
    "serviceTemplateID" : 2529,
    "serviceGroupID" : 5011
  } ],
  "count" : 2
}

```

## Selecting a service

### HTTP request syntax (URI)

The following URI allows you to identify a service and obtain its detailed information so that you can edit an object service. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/Services/id
```

### Request

The body of the request must be empty.

### Response

The response body structure is as follows:

```

{
  "instanceID" : instance-id,
  "name" : "service-display-name",
  "description" : "description-text",
  "tags" : "tags",
  "serviceTemplateName" : "service-template-name",
  "createTime" : "created-date-and-time",
  "modifyTime" : "updated-date-and-time",
  "serviceState" : "service-state",
  "serviceGroupName" : "service-group-name",
  "iconURL" : "icon-URL",
  "vendorName" : "vendor-name",
  "version" : "version",
  "lastSubmitTime" : "last-submit-time",
  "favorite" : {true|false},
  "failedCount" : failed-count,
  "completedCount" : completed-count,
  "lastFailedTime" : "last-failed-time",
  "resetTime" : "reset-time",
  "executedCount" : executed-count,
  "latest" : {true|false},
  "imageURL" : "image-URL",
  "supportedScheduleType" : "supported-schedule-type",

```



```

"supportedActionType" : "supported-action-type",
"submitCount" : submit-count,
"serviceSpecificationVersion" : "service-specification-version",
"serviceTemplateID" : service-template-id,
"serviceGroupID" : service-group-id
}

```

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	No login privilege.
404	Not found.	Privilege is not valid, or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```

curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbGxxxx" -X GET
https://host:port/Automation/v1/objects/Services/5185

```

Request header:

```

GET /Automation/v1/objects/Services/5185 HTTP/1.1
Authorization: Bearer eyJhbGxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json

```

**Response header:**

```

HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 05:57:18 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 6dee6b613fb3ea9cec3732a1e7e6ed5513810_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json

```

**Response body:**

```

{
  "instanceID" : 5185,
  "name" : "Allocate Volumes and Add to Oracle Database for AIX",
  "description" : "The service provisions a disk at storage system and adds a disk to
a disk group for the Oracle ASM for AIX.",
  "tags" : "Add New Storage,Oracle Database",
  "serviceTemplateName" : "Allocate Volumes and Add to Oracle Database for AIX",
  "createTime" : "2014-07-31T14:49:36.000+09:00",
  "modifyTime" : "2014-07-31T14:49:36.000+09:00",
  "serviceState" : "test",
  "serviceGroupName" : "test_Automator_SG_1",
  "iconURL" : "https://host:port/Automation/icon/services/
com.hitachi.software.cts.oracle/OracleIntegration_AIX_ProvisioningVolume/01.00.00",
  "vendorName" : "hitachi",
  "version" : "01.00.00",
  "favorite" : false,
  "failedCount" : 0,
  "completedCount" : 0,
  "lastFailedTime" : "2014-08-31T14:49:36.000+09:00",
  "resetTime" : "2014-08-31T14:49:36.000+09:00",
  "executedCount" : 0,
  "latest" : true,
  "imageUrl" : "https://host:port/Automation/resources/images/overview/overview.png",
  "supportedScheduleType" : "immediate,schedule,recurrence", "supportedActionType" :
"",
  "submitCount" : 0,
  "serviceSpecificationVersion" : "2.1",
  "serviceTemplateID" : 1714,
  "serviceGroupID" : 5011
}

```

## Editing a service

### HTTP request syntax (URI)

The following URI allows you to update a service. This request needs a minimum role of Submit. However, only the `favorite` property can be updated in the Submit role. When using the Modify role or higher, all valid properties can be updated.

```
PUT https://host:port/Automation/version/objects/Services/{id}
```

### Request

The request body structure is as follows:

```
{
  "instanceID" : instance-id,
  "name" : "service-display-name",
  "description" : "description-text",
  "tags" : "tags",
  "serviceTemplateName" : "service-template-name",
  "createTime" : "created-date-and-time",
  "modifyTime" : "updated-date-and-time",
  "serviceState" : "service-state",
  "serviceGroupName" : "service-group-name",
  "iconURL" : "icon-URL",
  "vendorName" : "vendor-name",
  "version" : "version",
  "lastSubmitTime" : "last-submit-time",
  "favorite" : {true|false},
  "failedCount" : failed-count,
  "completedCount" : completed-count,
  "lastFailedTime" : "last-failed-time",
  "resetTime" : "reset-time",
  "executedCount" : executed-count,
  "latest" : {true|false},
  "imageURL" : "image-URL",
  "supportedScheduleType" : "supported-schedule-type",
  "supportedActionType" : "supported-action-type",
  "submitCount" : submit-count,
  "serviceSpecificationVersion" : "service-specification-version",
  "serviceTemplateID" : service-template-id,
  "serviceGroupID" : service-group-id
}
```

The following table describes the valid properties that can be updated, when editing a service. If you specify non-valid properties (such as properties that are not listed), these fields will be ignored.

Resource Name	Element Name	Number
Service	name	1
Service	description	1
Service	tags	1
Service	Favorite	1
Service	serviceState	1
Service	supportedScheduleType	1

## Response

The response body structure is as follows:

```
{
  "instanceID" : instance-id,
  "name" : "service-display-name",
  "description" : "description-text",
  "tags" : "tags",
  "serviceTemplateName" : "service-template-name",
  "createTime" : "created-date-and-time",
  "modifyTime" : "updated-date-and-time",
  "serviceState" : "service-state",
  "serviceGroupName" : "service-group-name",
  "iconURL" : "icon-URL",
  "vendorName" : "vendor-name",
  "version" : "version",
  "lastSubmitTime" : "last-submit-time",
  "favorite" : {true|false},
  "failedCount" : failed-count,
  "completedCount" : completed-count,
  "lastFailedTime" : "last-failed-time",
  "resetTime" : "reset-time",
  "executedCount" : executed-count,
  "latest" : {true|false},
  "imageURL" : "image-URL",
  "supportedScheduleType" : "supported-schedule-type",
  "supportedActionType" : "supported-action-type",
  "submitCount" : submit-count,
  "serviceSpecificationVersion" : "service-specification-version",
  "serviceTemplateID" : service-template-id,
  "serviceGroupID" : service-group-id
}
```

## Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	Query parameter not valid.
401	Unauthorized	No login privilege.
404	Not found	No privilege to get services or no service exists.
412	Precondition failed	The server is not available.
413	Request Entity Too Large	The request size exceeds the maximum limit.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

## Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx"
-X PUT --data-binary @./InputParameters.json https://host:port/Automation/v1
/objects/Services/5185
```

Request header:

```
PUT /Automation/v1/objects/Services/5185 HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
Content-Length: 1094
Expect: 100-continue
```

**Response header:**

```

HTTP/1.1 100 Continue
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 06:08:32 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 1ec763c99e71383925094685e6c28492ea4b42a_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json

```

**Response body:**

```

{
  "instanceID" : 5185,
  "name" : "Allocate Volumes and Add to Oracle Database for AIX (Sales)",
  "description" : "The service provisions a disk at storage system and adds a disk to
a disk group for the Oracle ASM for AIX.",
  "tags" : "Add New Storage,Oracle Database",
  "serviceTemplateName" : "Allocate Volumes and Add to Oracle Database for AIX",
  "createTime" : "2014-07-31T14:49:36.000+09:00",
  "modifyTime" : "2014-07-31T15:08:33.000+09:00",
  "serviceState" : "test",
  "serviceGroupName" : "test_Automator_SG_1",
  "iconURL" : "https://host:port/Automation/icon/services/
com.hitachi.software.cts.oracle/OracleIntegration_AIX_ProvisioningVolume/01.00.00",
  "vendorName" : "hitachi",
  "version" : "01.00.00",
  "favorite" : false,
  "failedCount" : 0,
  "completedCount" : 0,
  "lastFailedTime" : "2014-08-31T14:49:36.000+09:00",
  "resetTime" : "2014-08-31T14:49:36.000+09:00",
  "executedCount" : 0,
  "latest" : true,
  "imageUrl" : "https://host:port/Automation/resources/images/overview/overview.png",
  "supportedScheduleType" : "immediate,schedule,recurrence", "supportedActionType" :
"",
  "submitCount" : 0,
  "serviceTemplateID" : 1714,
  "serviceGroupID" : 5011
}

```

## Deleting a service

### HTTP request syntax (URI)

The following URI allows you to delete a service. This request needs a minimum role of Modify.

```
DELETE https://host:port/Automation/version/objects/Services/id
```

### Request

The body of the request must be empty.

### Response

None

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
204	No content	Request was successful, but if the response to return does not exist, return this code instead of 200.
401	Unauthorized	No login privilege.
403	Forbidden	This user is not allowed to perform this request. If there is no update privilege, delete the related resource.
409	Conflict	A task generated from the specified service exists.
412	Precondition failed	The server is not running.
500	Server-side error	Processing error returned by the server.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbGxxxx" -X DELETE
https://host:port/Automation/v1/objects/Services/6021
```

Request header:

```
DELETE /Automation/v1/objects/Services/6021 HTTP/1.1
Authorization: Bearer eyJhbGxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response header:

```
HTTP/1.1 204 OK
Date: Thu, 31 Jul 2014 06:08:32 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 1ec763c99e71383925094685e6c28492ea4b42a_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
```

## Getting a list of service actions

**HTTP request syntax (URI)**

The following URI shows a list of actions for the Service resource. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/Services/{id}/actions
```

**Request**

The body of the request must be empty.

**Response**

The response body structure is as follows:

```
{
  "data" : [ {
    "name" : "update",
    "href" : "https://host:port/Automation/version/objects/Services/{id}",
    "method" : "PUT",
    "parameters" : []
  }, {
```



```

    "name" : "submit",
    "href" : "https://host:port/Automation/version/objects/Services/{id}/actions/submit/invoke",
    "method" : "POST",
    "parameters" : []
  }, {
    "name" : "detailhelp",
    "href" : "https://host:port/Automation/version/objects/Services/{id}/actions/detailhelp",
    "method" : "GET",
    "parameters" : []
  }, {
    "name" : "delete",
    "href" : "https://host:port/Automation/version/objects/Services/{id}",
    "method" : "DELETE",
    "parameters" : []
  }, {
    "name" : "reset",
    "href" : "https://host:port/Automation/version/objects/Services/{id}/actions/reset/invoke",
    "method" : "POST",
    "parameters" : []
  }, {
    "name" : "release",
    "href" : "https://host:port/Automation/version/objects/Services/{id}/actions/release/invoke",
    "method" : "POST",
    "parameters" : []
  }, {
    "name" : "maintenance",
    "href" : "https://host:port/Automation/version/objects/Services/{id}/actions/maintenance/invoke",
    "method" : "POST",
    "parameters" : []
  }, {
    "name" : "disable",
    "href" : "https://host:port/Automation/version/objects/Services/{id}/actions/disable/invoke",
    "method" : "POST",
    "parameters" : []
  }, {
    "name" : "applyTemplate",
    "href" : "https://host:port/Automation/version/objects/Services/{id}/actions/applyTemplate/invoke",
    "method" : "POST",
    "parameters" : []
  } ],
  "count" : 9
}

```

## Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	No login privilege.
404	Not found	Privilege is not valid, or no service exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

## Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbxxx" -X GET https://host:port/Automation/v1/objects/Services/5185/actions
```

Request header:

```
GET /Automation/v1/objects/Services/5185/actions HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 06:14:25 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO a664c6399a53caae6075ac26a0ac9014d42e2081_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
```

```
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "data" : [ {
    "name" : "update",
    "href" : "https://host:port/Automation/v1/objects/Services/5185",
    "method" : "PUT",
    "parameters" : []
  }, {
    "name" : "submit",
    "href" : "https://host:port/Automation/v1/objects/Services/5185/actions/submit/
invoke"
  }, {
    "method" : "POST",
    "parameters" : []
  }, {
    "name" : "delete",
    "href" : "https://host:port/Automation/v1/objects/Services/5185",
    "method" : "DELETE",
    "parameters" : []
  }, {
    "name" : "reset",
    "href" : "https://host:port/Automation/v1/objects/Services/5185/actions/reset/
invoke",
    "method" : "POST",
    "parameters" : []
  }, {
    "name" : "delete",
    "href" : "https://host:port/Automation/v1/objects/Services/5185",
    "method" : "DELETE",
    "parameters" : []
  }, {
    "name" : "reset",
    "href" : "https://host:port/Automation/v1/objects/Services/5185/actions/reset/
invoke",
    "method" : "POST",
    "parameters" : []
  }, {
    "name" : "release",
    "href" : "https://host:port/Automation/v1/objects/Services/5185/actions/release/
invoke",
    "method" : "POST",
    "parameters" : []
  }, {
    "name" : "maintenance",
    "href" : "https://host:port/Automation/v1/objects/Services/5185/actions/
maintenance/invoke",
```

```

    "method" : "POST",
    "parameters" : []
  }, {
    "name" : "disable",
    "href" : "https://host:port/Automation/v1/objects/Services/5185/actions/disable/
invoke",
    "method" : "POST",
    "parameters" : []
  }, {
    "name" : "applyTemplate",
    "href" : "https://host:port/Automation/v1/objects/Services/5185/actions/
applyTemplate/invoke",
    "method" : "POST",
    "parameters" : []
  } ],
  "count" : 9
}

```

### Query filters that are not supported

- HQL::fields
- HQL::filter
- HQL::sortBy

## Preparing to submit a service

### HTTP request syntax (URI)

The following URI is the initial step to submitting a service. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/Services/{id}/actions/submit
```

### Request

The body of the request must be empty.

### Response

The response body structure is as follows.

```

{
  "name" : "submit",
  "url" : " https://host:port/Automation/version/objects/Services/{id}/actions/submit/
invoke",
  "method" : "POST",
  "parameters" : [ {...} ]
}

```

The following table describes the objects specified as the `parameters` member.

Output	Resource Name	Number	Description
Schedule	Schedule	1	The run schedule of the service.
List of property values	PropertyValue	0..n	The input property of the service.

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	No login privilege.
404	Not found	No privilege to get services or no service exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbGxxxx" -X GET
https://host:port/Automation/v1/objects/Services/3569/actions/submit
```

Request header:

```
GET /Automation/v1/objects/Services/3569/actions/submit HTTP/1.1
Authorization: Bearer eyJhbGxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

**Response header:**

```

HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 06:23:15 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 57c04c224090c645f8abc0721e96c96594692ced_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json

```

**Response body:**

```

{
  "name" : "submit",
  "href" : "https://host:port/Automation/v1/objects/Services/3569/actions/submit/
invoke",
  "method" : "POST",
  "parameters" : [ {
    "name" : "Execute remote command_20140731152315",
    "submitter" : "System",
    "scheduleType" : "immediate",
    "description" : "",
    "scheduledStartTime" : "2014-07-31T15:23:15.382+09:00",
    "recurrenceInterval" : "daily",
    "recurrenceDayOfWeek" : "",
    "recurrenceDayOfMonth" : "",
    "recurrenceLastDayOfMonth" : false,
    "recurrenceStartDate" : "2014-07-31",
    "recurrenceTime" : "00:00:00",
    "serviceID" : 3569
  }, {
    "instanceID" : 3564,
    "type" : "string",
    "keyName" : "common.targetHost",
    "value" : "172.17.9.36",
    "readOnly" : false,
    "hidden" : false,
    "serviceID" : 3569
  }, {
    "instanceID" : 3565,
    "type" : "string",
    "keyName" : "common.remoteCommand",
    "value" : "date",
    "readOnly" : false,
    "hidden" : false,
    "serviceID" : 3569
  }, {

```

```

    "instanceID" : 3568,
    "type" : "string",
    "keyName" : "common.remoteCommandParameter",
    "value" : "/t",
    "readOnly" : false,
    "hidden" : false,
    "serviceID" : 3569
  } ]
}

```

## Submitting a service

### HTTP request syntax (URI)

The following URI allows you to submit a service for scheduling and immediate running. This request needs a minimum role of Submit.

```
POST https://host:port/Automation/version/objects/Services/{id}/actions/submit/invoke
```

### Request

The request body structure is as follows:

```

{
  "name" : "submit",
  "url" : "https://host:port/Automation/version/objects/Services/id/actions/submit/invoke",
  "method" : "POST",
  "parameters" : [ {...} ]
}

```

The following table describes the objects specified as the `parameters` member.

Output	Resource Name	Number	Description
Schedule	Schedule	1	The run schedule of the service.
List of property values	PropertyValue	0..n	The input property of the service.

The following tables provide the valid properties.

- For common settings:

Resource Name	Element Name	Number
Schedule	name	1
Schedule	description	1
PropertyValue	keyName	0..n
PropertyValue	value	0..n
Schedule	scheduleType	1

- For running immediately: None
- For scheduled run:

Resource Name	Element Name	Number
Schedule	scheduledStartTime	1

- For recurring run:

Resource Name	Element Name	Number
Schedule	recurrenceInterval	1
Schedule	recurrenceMinutes	1
Schedule	recurrenceDayOfWeek	1
Schedule	recurrenceDayOfMonth	1
Schedule	recurrenceLastDayOfMonth	1
Schedule	recurrenceStartDate	1
Schedule	recurrenceTime	1

## Response

The response body structure is as follows:

```
{
  "instanceID" : instance-id,
  "created" : "created-date-and-time",
  "updated" : "updated-date-and-time",
  "completed" : "completed-date-and-time",
  "state" : "state",
```



```
"affectedResources" : [ {...} ]
}
```

The following table describes the objects returned as the `affectedResources` member.

Output	Resource Name	Number	Description
Link to created Schedule	String	1	The link to the created Schedule resource
Link to created Task	String	1	The link to the created Task resource

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	Argument is not valid, or the number of tasks has reached the upper limit.
401	Unauthorized	No login privilege.
403	Forbidden	No privilege to run services.
404	Not found	No privilege to get services or no service exists.
412	Precondition failed	The server is not available or the number of tasks has reached the upper bound.
413	Request entity too large	The request size exceeds the maximum limit.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

**Example code****Request with cURL command:**

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx"
-X POST --data-binary @./InputParameters.json https://host:port/Automation/v1
/objects/Services/3569/actions/submit/invoke
```

**Request header:**

```
POST /Automation/v1/objects/Services/3569/actions/submit/invoke HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
Content-Length: 1224
Expect: 100-continue
```

**Response header:**

```
HTTP/1.1 100 Continue
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 06:32:06 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO bcdf3f7285cb238fb7d0dcfc6e74ff67cf95388_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "instanceID" : "51308b3c-6d32-4fd4-91fe-e6ecf9afe9b7",
  "created" : "2014-07-31T15:32:07.057+09:00",
  "updated" : "2014-07-31T15:32:07.057+09:00",
  "completed" : "2014-07-31T15:32:07.057+09:00",
  "state" : "success",
  "affectedResource" : [ "https://host:port/Automation/v1/objects/Schedules/6163",
"https://host:port/Automation/v1/objects/Tasks/6166" ],
  "result" : []
}
```

## Preparing to reset a service

### HTTP request syntax (URI)

The following URI is the initial step to acquire the template of required arguments of a service for resetting. This request needs a minimum role of Modify.

```
GET https://host:port/Automation/version/objects/Services/id/actions/reset
```

### Request

The body of the request must be empty.

### Response

The response body structure is as follows:

```
{
  "name" : "reset",
  "href" : "https://host:port/Automation/version/objects/Services/{id}/actions/reset/
invoke",
  "method" : "POST",
  "parameters" : []
}
```

To complete this action, reset the counter of the service.

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	No login privilege.
404	Not found	No privilege to get services or no service exists.
412	Precondition failed	The server is not running.
500	Server-side error	Server processing error.

Status code	HTTP name	Description
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbxxxx" -X GET
https://host:port/Automation/v1/objects/Services/2004/actions/reset
```

Request header:

```
GET /Automation/v1/objects/Services/2004/actions/reset HTTP/1.1
Authorization: Bearer eyJhbxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2015 06:23:15 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 57c04c224090c645f8abc0721e96c96594692ced_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

Response body:

```
{
  "name" : "reset",
  "href" : "https://host:port/Automation/v1/objects/Services/2004/actions/reset/
invoke",
  "method" : "POST",
  "parameters" : []
}
```

## Resetting the counter of a service

### HTTP request syntax (URI)

The following URI enables you to reset the counter of a service. This request needs a minimum role of Modify.

```
POST https://host:port/Automation/version/objects/Services/id/actions/reset/invoke
```

### Request

The request body structure is as follows:

```
{
  "name" : "reset",
  "href" : "https://host:port/Automation/version/objects/Services/{id}/actions/reset/invoke",
  "method" : "POST",
  "parameters" : []
}
```

### Response

The response body structure is as follows:

```
{
  "instanceID" : "instance-id",
  "created" : "created-date-and-time",
  "updated" : "updated-date-and-time",
  "completed" : "completed-date-and-time",
  "state" : "state",
  "affectedResources" : [ {...} ],
  "result" : [ {...} ],
  "resultType" : "result-type"
}
```

The following table describes the objects returned as the `affectedResources` member.

Output	Resource Name	Number	Description
link to affected Service	String	1	The link to the Service resource with specified ID.

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	Argument is not valid.
401	Unauthorized	No login privilege.
403	Forbidden	No privilege to reset counter.
404	Not found	No privilege to get services or no service exists.
412	Precondition failed	The server is not running.
413	Request entity too large	The request size exceeds the maximum limit.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx" -H -X POST --data-binary @./InputParameters.json
https://host:port/Automation/v1/objects/Services/2004/actions/reset/invoke
```

Request header:

```
POST /Automation/v1/objects/Services/2004/actions/reset/invoke HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
Content-Length: 171
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2015 06:23:15 GMT
```

```

Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 57c04c224090c645f8abc0721e96c96594692ced_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json

```

#### Response body:

```

{
  "instanceID" : "9d1ccf4f-247d-4f2a-89fa-7b3683e05e3c",
  "created" : "2015-07-30T13:52:25.949+09:00",
  "updated" : "2015-07-30T13:52:25.949+09:00",
  "completed" : "2015-07-30T13:52:25.949+09:00",
  "state" : "success",
  "affectedResource" : [ "https://host:port/Automation/v1/objects/Services/2004" ],
  "result" : []
}

```

## Preparing to release a service

### HTTP request syntax (URI)

The following URI is the initial step obtain the template of the URL arguments required to release and then run the target service. This request needs a minimum role of Modify.

```
GET https://host:port/Automation/version/objects/Services/id/actions/release
```

### Request

The body of the request must be empty.

### Response

The response body structure is as follows:

```

{
  "name" : "release",
  "href" : "https://host:port/Automation/version/objects/Services/{id}/actions/
release/invoke",
  "method" : "POST",
  "parameters" : []
}

```

To complete this action, release the service.

## Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	No login privilege.
404	Not found	No privilege to get services or no service exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

## Example

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbxxx" -X GET
https://host:port/Automation/v1/objects/Services/2004/actions/release
```

Request header:

```
GET /Automation/v1/objects/Services/2004/actions/release HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2015 06:23:15 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 57c04c224090c645f8abc0721e96c96594692ced_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
```



```
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "name" : "release",
  "href" : "https://host:port/Automation/v1/objects/Services/2004/actions/release/
invoke",
  "method" : "POST",
  "parameters" : []
}
```

## Releasing a service

**HTTP request syntax (URI)**

The following URI allows you to change the configuration type of the service to `release`. This request needs a minimum role of `Modify`.

```
POST https://host:port/Automation/version/objects/Services/id/actions/release/invoke
```

**Request**

The request body structure is as follows:

```
{
  "name" : "release",
  "href" : "https://host:port/Automation/version/objects/Services/{id}/actions/
release/invoke",
  "method" : "POST",
  "parameters" : []
}
```

**Response**

The response body structure is as follows:

```
{
  "instanceID" : "instance-id",
  "created" : "created-date-and-time",
  "updated" : "updated-date-and-time",
  "completed" : "completed-date-and-time",
  "state" : "state",
  "affectedResources" : [ {...} ],
  "result" : [ {...} ],
  "resultType" : "result-type"
}
```

The following table describes the objects returned as the `affectedResources` member.

Output	Resource Name	Number	Description
Link to affected Service	String	1	The link to the created Service resource

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	Argument is not valid.
401	Unauthorized	No login privilege.
404	Not found	No privilege to get services or no service exists.
409	Conflict	Service is cannot be released due to status.
412	Precondition failed	The server is not running.
413	Request entity too large	The request size exceeds the maximum limit.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

**Example code****Request with cURL command:**

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx"
-X POST --data-binary @./InputParameters.json https://host:port/Automation/v1
/objects/Services/2004/actions/release/invoke
```

**Request header:**

```
POST /Automation/v1/objects/Services/3569/actions/release/invoke HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
Content-Length: 175
```

**Response header:**

```
HTTP/1.1 100 Continue
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2015 06:32:06 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO bcdf3f7285cb238fb7d0dcfc6e74ff67cf95388_vm011150_v0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "instanceID" : "4c63e655-1ec2-4c70-912f-c1d80be59066",
  "created" : "2015-07-30T13:55:39.457+09:00",
  "updated" : "2015-07-30T13:55:39.457+09:00",
  "completed" : "2015-07-30T13:55:39.457+09:00",
  "state" : "success",
  "affectedResource" : [ "https://host:port/Automation/v1/objects/Services/2004" ],
  "result" : []
}
```

## Preparing to change the configuration type of a service to maintenance

### HTTP request syntax (URI)

The following URI is the initial step to changing the configuration type of a service to maintenance. This request needs a minimum role of Modify.

```
GET https://host:port/Automation/version/objects/Services/id/actions/maintenance
```

### Request

The body of the request must be empty.

### Response

The response body structure is as follows:

```
{
  "name" : "maintenance",
  "href" : " http://host:port/Automation/version/objects/Services/id/actions/
maintenance/invoke",
  "method" : "POST",
  "parameters" : []
}
```

To complete this action, change the configuration type of the service to `maintenance`.

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Statu s code	HTTP name	Description
200	OK	Success.
401	Unautho rized	No login privilege.
404	Not found	No privilege to get services or no service exists.
412	Precond ition failed	The server is not running.

Statu s code	HTTP name	Description
500	Server- side error	Server processing error.
503	Service unavaila ble	The server currently cannot receive requests. Try your request again.

### Example

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbxxxx" -X GET
https://host:port/Automation/version/objects/Services/2004/actions/maintenance
```

Request header:

```
GET /Automation/v1/objects/Services/3569/actions/maintenance HTTP/1.1
Authorization: Bearer eyJhbxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2015 06:23:15 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 57c04c224090c645f8abc0721e96c96594692ced_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

Response body:

```
{
  "name" : "maintenance",
  "href" : "https://host:port/Automation/v1/objects/Services/2004/actions/maintenance/
invoke",
  "method" : "POST",
```

```
"parameters" : []
}
```

## Changing the configuration type of a service to maintenance

### HTTP request syntax (URI)

The following URI allows you to change the configuration type of a service to maintenance. This request needs a minimum role of Modify.

```
POST https://host:port/Automation/version/objects/Services/id/actions/maintenance/
invoke
```

### Request

The request body structure is as follows:

```
{
  "name" : "maintenance",
  "href" : "https://host:port/Automation/version/objects/Services/id/actions/
maintenance/invoke",
  "method" : "POST",
  "parameters" : []
}
```

### Response

The response body structure is as follows:

```
{
  "instanceID" : "instance-id",
  "created" : "created-date-and-time",
  "updated" : "updated-date-and-time",
  "completed" : "completed-date-and-time",
  "state" : "state",
  "affectedResources" : [ {...} ],
  "result" : [ {...} ],
  "resultType" : "result-type"
}
```

The following table describes the objects returned as the `affectedResources` member.

Output	Resource Name	Number	Description
Link to affected Service	String	1	The link to the Service resource

**Return codes**

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	Argument is not valid.
401	Unauthorized	No login privilege.
404	Not found	No privilege to get services or no resource exists.
409	Conflict	Service is not able to change to maintenance mode due to status.
412	Precondition failed	The server is not running.
413	Request entity too large	The request size exceeds the maximum limit.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx"
-X POST --data-binary @./InputParameters.json https://host:port/Automation/v1
/objects/Services/2004/actions/maintenance/invoke
```

Request header:

```
POST /Automation/v1/objects/Services/3569/actions/maintenance/invoke HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
Content-Length: 183
```

**Response header:**

```

HTTP/1.1 100 Continue
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2015 06:32:06 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO bcdf3f7285cb238fb7d0dcfc6e74ff67cf95388_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json

```

**Response body:**

```

{
  "instanceID" : "36a53982-ac92-45aa-acea-21ede67b7df2",
  "created" : "2015-07-30T14:04:41.028+09:00",
  "updated" : "2015-07-30T14:04:41.028+09:00",
  "completed" : "2015-07-30T14:04:41.028+09:00",
  "state" : "success",
  "affectedResource" : ["https://host:port/Automation/v1/objects/Services/2004" ],
  "result" : []
}

```

## Preparing to disable a service

**HTTP request syntax (URI)**

The following URI is the initial step to disable a target service. This request needs a minimum role of Modify.

```
GET https://host:port/Automation/version/objects/Services/id/actions/disable
```

**Request**

The body of the request must be empty.

**Response**

The response body structure is as follows:

```

{
  "name" : "disable",
  "href" : "https://host:port/Automation/version/objects/Services/{id}/actions/
disable/invoke",
  "method" : "POST",

```



```
"parameters" : []
}
```

To complete this action, disable the service.

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Statu s code	HTTP name	Description
200	OK	Success.
401	Unauth orized	No login privilege.
404	Not found	No privilege to get services or no service exists.
412	Precon dition failed	The server is not running.
500	Server- side error	Server processing error.
503	Service unavail able	The server currently cannot receive requests. Try your request again.

### Example

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbGxxxx" -X GET
https://host:port/Automation/v1/objects/Services/2004/actions/disable
```

Request header:

```
GET /Automation/v1/objects/Services/2004/actions/disable HTTP/1.1
Authorization: Bearer eyJhbGxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

**Response header:**

```

HTTP/1.1 200 OK
Date: Thu, 31 Jul 2015 06:23:15 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 57c04c224090c645f8abc0721e96c96594692ced_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json

```

**Response body:**

```

{
  "name" : "release",
  "href" : "https://host:port/Automation/v1/objects/Services/2004/actions/disable/
invoke",
  "method" : "POST",
  "parameters" : []
}

```

## Disabling a service

**HTTP request syntax (URI)**

The following URI allows you to disable a service. This request needs a minimum role of Modify.

```
POST https://host:port/Automation/version/objects/Services/id/actions/disable/invoke
```

**Request**

The body of the request must be empty.

```

{
  "name" : "disable",
  "href" : "https://host:port/Automation/version/objects/Services/{id}/actions/
disable/invoke",
  "method" : "POST",
  "parameters" : []
}

```

**Response**

```

{
  "instanceID" : "instance-id",
  "created" : "created-date-and-time",

```

```

"updated" : "updated-date-and-time",
"completed" : "completed-date-and-time",
"state" : "state",
"affectedResources" : [ {...} ],
"result" : [ {...} ],
"resultType" : "result-type"
}

```

The following table describes the objects returned as the `affectedResources` member.

Output	Resource Name	Number	Description
Link to affected Service	String	1	The link to the Service resource

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	Argument is not valid.
401	Unauthorized	No login privilege.
404	Not found	No privilege to get services or no service exists.
409	Conflict	Cannot change service to disable mode due to current status.
412	Precondition failed	The server is not running.
413	Request entity too large	The request size exceeds the maximum limit.
500	Server-side error	Processing error returned by the server.

Status code	HTTP name	Description
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbxxx" -H -X POST -
-data-binary @./InputParameters.json https://host:port/Automation/v1/objects/Services/
2004/actions/disable/invoke
```

Request header:

```
POST /Automation/v1/objects/Services/2004/actions/disable/invoke HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Length: 175
```

Response header:

```
HTTP/1.1 204 OK
Date: Thu, 31 Jul 2015 06:08:32 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 1ec763c99e71383925094685e6c28492ea4b42a_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

Response body:

```
{
  "instanceID" : "ff785246-c3c9-425c-87a5-109336e8b387",
  "created" : "2015-07-30T14:07:58.053+09:00",
  "updated" : "2015-07-30T14:07:58.053+09:00",
  "completed" : "2015-07-30T14:07:58.053+09:00",
  "state" : "success",
  "affectedResource" : [ "https://host:port/Automation/v1/objects/Services/2004" ],
```

```
"result" : []
}
```

## Getting service help

### HTTP request syntax (URI)

The following URI returns the web address to obtain detailed help of a specified service template. You can then display the help information of the target service template through a browser. This request needs the minimum role of Submit.

```
GET https://host:port/Automation/version/objects/Services/id/actions/detailhelp
```

### Request

The body of the request must be empty.

### Response

The response body structure is as follows:

```
{
  "name" : "export",
  "href" : "Link-to-the-detail-help",
  "method" : "POST",
  "parameters" : []
}
```

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Stat us code	HTTP name	Description
200	OK	Success.
401	Unauth orized	No login privilege.
404	Not found	No privilege to get services or no service exists.
412	Precon dition failed	The server is not running.

Status code	HTTP name	Description
500	Server-side error	Processing error returned by the server.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbGxxxx" -H -X GET https://host:port/Automation/v1/objects/ServiceTemplates/1116/actions/detailhelp
```

Request header:

```
GET /Automation/v1/objects/ServiceTemplates/1116/actions/detailhelp HTTP/1.1
Authorization: Bearer eyJhbGxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response body:

```
{
  "name" : "detailhelp",
  "href" : "https://host:port/Automation/services/custom/00000000000560/remoteCommandExe.html",
  "method" : "GET",
  "parameters" : []
}
```

## Preparing to apply a service template

### HTTP request syntax (URI)

The following URI is the initial step to get the template of required arguments to apply a template. The returned parameters shows the template that is currently bound to the service. This request needs a minimum role of Modify.

```
GET https://host:port/Automation/version/objects/Services/id/actions/applyTemplate
```

**Request**

The body of the request must be empty.

**Response**

The response body structure is as follows.

```
{
  "name" : "applyTemplate",
  "href" : "https://host:port/Automation/version/objects/Services/{id}/actions/
applyTemplate/invoke",
  "method" : "POST",
  "parameters" : [ {...} ]
}
```

The following table describes the objects specified as the `parameters` member.

Output	Resource Name	Number	Description
Current ServiceTemplate	ServiceTemplate	1	Current ServiceTemplate.

To complete this action, apply the service template.

**Return codes**

The following table describes the HTTP status codes that can be returned in response to a request.

Stat us cod e	HTTP name	Description
200	OK	Success.
401	Unaut horize d	No login privilege.
403	Forbid den	No privilege to get service templates.
404	Not found	No privilege to get services or no service exists.
412	Preco ndition failed	The server is not running.

Status code	HTTP name	Description
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbGxxxx" -X GET https://host:port/Automation/v1/objects/Services/2188/actions/applyTemplate
```

Request header:

```
GET /Automation/v1/objects/Services/2188/actions/applyTemplate HTTP/1.1
Authorization: Bearer eyJhbGxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2015 06:23:15 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 57c04c224090c645f8abc0721e96c96594692ced_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

Response body:

```
{
  "name" : "applyTemplate",
  "href" : "https://host:port/Automation/v1/objects/Services/2188/actions/applyTemplate/invoke",
```



```

"method" : "POST",
"parameters" : [ {
  "instanceID" : 2111,
  "keyName" : "SP_CM",
  "displayName" : "Allocate Volumes with Smart Provisioning",
  "iconURL" : "https://host:port/Automation/icon/services/
com.hitachi.software.dna.cts/SP_CM/01.14.00",
  "vendorID" : "com.hitachi.software.dna.cts",
  "version" : "01.14.00",
  "vendorName" : "Hitachi Vantara LLC",
  "tags" : "Add New Storage,Configuration Manager",
  "createTime" : "2015-07-30T14:14:29.000+09:00",
  "modifyTime" : "2015-07-30T14:14:29.000+09:00",
  "description" : "Intelligent allocation service that uses sets of volumes from
the associated infrastructure group through Configuration Manager to be consumed by
server(s) running a generic application.",
  "releaseState" : "release",
  "latest" : false,
  "imageURL" : "https://host:port/Automation/services/custom/000000000002111/
Allocate_Volumes_with_Smart_Provisioning_overview.png",
  "supportedScheduleType" : "immediate,schedule", "supportedActionType" : "",
  "needVUP" : false,
  "componentOutdated" : true,
  "usedServices" : 1,
  "usedTemplates" : 0
} ]
}

```

## Applying a service template

### HTTP request syntax (URI)

The following URI allows you to apply a service template. This request needs a minimum role of Submit.

```
POST https://host:port/Automation/version/objects/Services/id/actions/applyTemplate/
invoke
```

### Request

The request body structure is as follows:

```

{
  "name" : "applyTemplate",
  "href" : "https://host:port/Automation/version/objects/Services/{id}/actions/
applyTemplate/invoke",
  "method" : "POST",
  "parameters" : [ {...} ]
}

```

The following table describes the objects returned as the `parameters` member.

Output	Resource Name	Number	Description
ServiceTemplate	ServiceTemplate	1	The template to apply

The following table describes the valid properties.

Resource Name	Element Name	Number
ServiceTemplate	instanceID	1

## Response

The response body structure is as follows:

```
{
  "instanceID" : "instance-id",
  "created" : "created-date-and-time",
  "updated" : "updated-date-and-time",
  "completed" : "completed-date-and-time",
  "state" : "state",
  "affectedResources" : [ {...} ],
  "result" : [ {...} ],
  "resultType" : "result-type"
}
```

The following table describes the objects returned as the `affectedResources` member.

Output	Resource Name	Number	Description
Link to affected Service	String	1	The link to the Service resource

## Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	Argument is not valid.
401	Unauthorized	No login privilege.
404	Not found	No privilege to get services or no resource exists.
409	Conflict	Status of the changed destination of the template is not valid.
412	Precondition failed	The server is not running.
413	Request entity too large	The request size exceeds the maximum limit.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx"
-X POST --data-binary @./InputParameters.json https://host:port/Automation/v1
/objects/Services/2188/actions/applyTemplate/invoke
```

**Request header:**

```
POST /Automation/v1/objects/Services/2188/actions/applyTemplate/invoke HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
Content-Length: 1199
Expect: 100-continue
```

**Response header:**

```
HTTP/1.1 100 Continue
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2015 06:32:06 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO bcdf3f7285cb238fb7d0dcfc6e74ff67cf95388_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "instanceID" : "10920fed-ad4f-4be1-9015-bd2066e5312c",
  "created" : "2015-07-30T14:23:38.683+09:00",
  "updated" : "2015-07-30T14:23:38.683+09:00",
  "completed" : "2015-07-30T14:23:38.683+09:00",
  "state" : "success",
  "affectedResource" : [ "https://host:port/Automation/v1/objects/Services/2188" ],
  "result" : []
}
```

## Schedules

Ops Center Automator enables you to schedule tasks and services. Several management functions are available for the Schedule resource.

## Getting a list of scheduled services

### HTTP request syntax (URI)

The following URI shows a list of scheduled services. This list also includes services that are marked as `immediate`. You can also obtain the `instanceID` of the target scheduled service along with information, such as `submitter` or the associated `serviceID`. This request needs a minimum role of `Submit`.

```
GET https://host:port/Automation/version/objects/Schedules
```

### Request

The body of the request must be empty.

Query Parameters	Filter Condition
<code>serviceID</code>	equal to the value
<code>serviceGroupID</code>	equal to the value
<code>serviceTemplateID</code>	equal to the value
<code>scheduleStatus</code>	equal to the value

A query parameter is a type of query string.

You can express a query parameter as follows:

```
?Query_parameter=value
```

For example:

```
?serviceID=16731
```



**Note:** By specifying `?scheduleStatus=running` as a query, you can exclude the finished schedule information. This includes any tasks (immediate or scheduled) that already running or any canceled tasks. In addition, only `=running` is supported in this query.

### Response

The response body structure is as follows:

```
{
  "data": [ { ... } ],
  "count " : count
}
```

The following table describes the objects specified as the `data` member.

Output	Resource Name	Number	Description
List of schedules	Schedule	0..n	Schedule resource that matches the search condition

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
400	Bad Request	Query parameter is not valid.
401	Unauthorized	No login privilege.
412	Precondition Failed	The server is not available.
500	Server-side Error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbGxxxx"
-X GET https://host:port/Automation/v1/objects/Schedules
```

Request header:

```
GET /Automation/v1/objects/Schedules HTTP/1.1
Authorization: Bearer eyJhbGxxxx
User-Agent: curl/7.36.0
```

```
Host: host:port
Accept: application/json
Content-Type: application/json
```

**Response header:**

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 06:54:39 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO d2ac6f15f69065c555dbf25b6a6e13c32764fccd_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "data" : [ {
    "instanceID" : 6163,
    "name" : "Execute remote command_20140731152315",
    "submitter" : "System",
    "scheduleType" : "immediate",
    "createTime" : "2014-07-31T15:32:06.000+09:00",
    "modifyTime" : "2014-07-31T15:32:06.000+09:00",
    "description" : "",
    "serviceState" : "test",
    "serviceID" : 3569
  }, {
    "instanceID" : 6188,
    "name" : "Execute remote command_20140731155139",
    "submitter" : "System",
    "scheduleType" : "schedule",
    "createTime" : "2014-07-31T15:52:11.000+09:00",
    "modifyTime" : "2014-07-31T15:52:11.000+09:00",
    "description" : "",
    "scheduledStartTime" : "2014-07-31T17:00:00.000+09:00",
    "serviceState" : "test",
    "serviceID" : 3569
  }, {
    "instanceID" : 6171,
    "name" : "Execute remote command_20140731152120_Resubmit",
    "submitter" : "System",
    "scheduleType" : "immediate",
    "createTime" : "2014-07-31T15:44:26.000+09:00",
    "modifyTime" : "2014-07-31T15:44:26.000+09:00",
    "description" : "",
```

```

    "serviceState" : "test",
    "serviceID" : 3569
  } ],
  "count" : 3
}

```

## Selecting a targeted service schedule

### HTTP request syntax (URI)

The following URI allows you to select a schedule and obtain its detailed information. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/Schedules/id
```



**Note:** Obtain the ID of the targeted service schedule from the list of scheduled services.

### Request

The body of the request must be empty.

### Response

The response body structure is as follows:

```

{
  "instanceID" : instance-id,
  "name" : "registered-service-name",
  "submitter" : "submit-user-name",
  "status" : "status-of-schedule",
  "scheduleType" : "type-of-schedule",
  "createTime" : "created-date-and-time",
  "modifyTime" : "updated-date-and-time",
  "description" : "description-text",
  "scheduledStartTime" : "scheduled-start-time",
  "recurrenceInterval" : "interval-type",
  "recurrenceMinutes" : "recurrence-minutes",
  "recurrenceDayOfWeek" : "interval-of-weekly-job",
  "recurrenceDayOfMonth" : "interval-of-monthly-job",
  "recurrenceLastDayOfMonth" : {true|false},
  "recurrenceStartDate" : "recurrence-start-date",
  "recurrenceTime" : "exec-time-of-day",
  "serviceState" : "service-state",
  "serviceID" : service-id
}

```



**Return codes**

The following table describes the HTTP status codes that can be returned in response to a request.

Statu s code	HTTP name	Description
200	OK	Success.
401	Unauth orized	No login privilege.
404	Not found	Privilege is not valid or no resource exists.
412	Precon dition failed	The server is not available.
500	Server- side error	Server processing error.
503	Service unavail able	The server currently cannot receive requests. Try your request again.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxxx"
-X GET https://host:port/Automation/v1/objects/Schedules/6188
```

Request header:

```
GET /Automation/v1/objects/Schedules/6188 HTTP/1.1
Authorization: Bearer eyJhbxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 06:55:27 GMT
Server: Cosminexus HTTP Server
```

```

Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO e1f1c1e2b0e7e0b08f43d71309244dcd0f3d2d_vm011150_v0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json

```

**Response body:**

```

{
  "instanceID" : 6188,
  "name" : "Execute remote command_20140731155139",
  "submitter" : "System",
  "scheduleType" : "schedule",
  "createTime" : "2014-07-31T15:52:11.000+09:00",
  "modifyTime" : "2014-07-31T15:52:11.000+09:00",
  "description" : "",
  "scheduledStartTime" : "2014-07-31T17:00:00.000+09:00",
  "serviceState" : "test",
  "serviceID" : 3569
}

```

## Getting a list of scheduled actions

**HTTP request syntax (URI)**

The following URI shows a list of actions for the Schedule resource. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/Schedules/id/actions
```

**Request**

The body of the request must be empty.

**Response**

The response body structure is as follows:

```

{
  "data" : [ {
    "name" : "cancel",
    "url" : "https://host:port/Automation/version/objects/Schedules/{id}/actions/cancel/invoke",
    "method" : "POST",
    "parameters" : []
  }, {
    "name" : "suspend",

```

```

    "url" : " https://host:port/Automation/version/objects/Schedules/{id}/actions/
suspend/invoke",
    "method" : "POST",
    "parameters" : []
  }, {
    "name" : "resume",
    "url" : " https://host:port/Automation/version/objects/Schedules/{id}/actions/
resume/invoke",
    "method" : "POST",
    "parameters" : []
  } ],
  "count" : 3
}

```

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
401	Unauth orized	No login privilege.
404	Not found	Privilege is not valid, or no resource exists
412	Precon dition Failed	The server is not available.
500	Server -side Error	Server processing error.
503	Servic e unavail able	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```

curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx"
-X GET https://host:port/Automation/v1/objects/Schedules/6188/actions

```

**Request header:**

```
GET /Automation/v1/objects/Schedules/6188/actions HTTP/1.1
Authorization: Bearer eyJhbxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
```

**Response header:**

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 06:55:55 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 45866acc2a89370d3ed8b6e9aa26b38aec3953_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "data" : [ {
    "name" : "cancel",
    "href" : "https://host:port/Automation/v1/objects/Schedules/6188/actions/cancel/
invoke",
    "method" : "POST",
    "parameters" : []
  }, {
    "name" : "suspend",
    "href" : "https://host:port/Automation/v1/objects/Schedules/6188/actions/suspend/
invoke",
    "method" : "POST",
    "parameters" : []
  }, {
    "name" : "resume",
    "href" : "https://host:port/Automation/v1/objects/Schedules/6188/actions/resume/
invoke",
    "method" : "POST",
    "parameters" : []
  } ],
  "count" : 3
}
```

## Preparing to cancel a scheduled service

### HTTP request syntax (URI)

The following URI is the initial step for canceling a scheduled service. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/Schedules/id/actions/cancel
```



**Note:** After you cancel a scheduled service, it cannot be resumed. To temporarily suspend a scheduled service, you must prepare to suspend the service and then suspend the scheduled service.

### Request

The body of the request must be empty.

### Response

The response body structure is as follows:

```
{
  "name" : "cancel",
  "url" : "https://host:port/Automation/version/objects/Schedules/{id}/actions/cancel/invoke",
  "method" : "POST",
  "parameters" : []
}
```

To complete this action, you must then cancel the service.

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	No login privilege.
404	Not found	Privilege is not valid or no resource exists.

Status code	HTTP name	Description
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx"
-X GET https://host:port/Automation/v1/objects/Schedules/6188/actions/cancel
```

Request header:

```
GET /Automation/v1/objects/Schedules/6188/actions/cancel HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 06:56:33 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO f9d5ade2d913312d7b656e9c89e62334c89561_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

Response body:

```
{
  "name" : "cancel",
  "href" : "https://host:port/Automation/v1/objects/Schedules/6188/actions/cancel/
invoke",
  "method" : "POST",
  "parameters" : []
}
```

## Canceling a scheduled service

### HTTP request syntax (URI)

The following URI allows you to complete the action of canceling a scheduled service. This request needs a minimum role of Submit.

```
POST https://host:port/Automation/version/objects/Schedules/id/actions/cancel/invoke
```



**Note:** After you cancel a scheduled service, it cannot be resumed. You can temporarily suspend a scheduled service by preparing to suspend the service and then suspending the scheduled service.

### Request

The request body structure is as follows:

```
{
  "name" : "cancel",
  "url" : "https://host:port/Automation/version/objects/Schedules/{id}/actions/
cancel/invoke",
  "method" : "POST",
  "parameters" : []
}
```

### Response

The response body structure is as follows:

```
{
  "instanceID" : "instance-id",
  "created" : "created-date-and-time",
  "updated" : "updated-date-and-time",
  "completed" : "completed-date-and-time",
  "state" : "state",
  "status" : "status",
  "affectedResources" : [ {...} ],
  "result" : [ {...} ],
}
```

```
"result-type" : "result-type"
}
```

The following table describes the objects specified as the `affectedResources` member.

Output	Resource Name	Number	Description
Link to affected schedule	String	1	The link to the affected Schedule resource.

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success
400	Bad request	Argument is not valid.
401	Unauthorized	No login privilege.
404	Not found	Privilege is not valid or no resource exists.
409	Conflict	The task is not in waiting or holding status.
412	Precondition failed	The server is not available.
413	Request entity too large	The request size exceeds the maximum limit.
500	Server-side error	Server processing error.



Statu s code	HTTP name	Description
503	Service unavaila ble	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxxx"
-X POST --data-binary @./InputParameters.json https://host:port/Automation/v1/objects
/Schedules/6188/actions/cancel/invoke
```

Request header:

```
POST /Automation/v1/objects/Schedules/6188/actions/cancel/invoke HTTP/1.1
Authorization: Bearer eyJhbxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
Content-Length: 170
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 07:15:37 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO eb4ac447cb55895949ad5e704d1f7151b5fe6f75_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

Response body:

```
{
  "instanceID" : "6fb00e56-8749-45c5-a727-ee7b048f318c",
  "created" : "2014-07-31T16:15:38.258+09:00",
  "updated" : "2014-07-31T16:15:38.258+09:00",
  "completed" : "2014-07-31T16:15:38.258+09:00",
  "state" : "success",
```

```
"affectedResource" : [ "https://host:port/Automation/v1/objects/Schedules/6188" ],
"result" : []
}
```

## Preparing to suspend a scheduled service

### HTTP request syntax (URI)

The following URI is the initial step for suspending a scheduled service. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/Schedules/id/actions/suspend
```



**Note:** Suspending allows you to temporarily stop a scheduled service and to resume it later. To cancel a scheduled service completely, you must prepare to cancel the service and then cancel the scheduled service.

### Request

The body of the request must be empty.

### Response

The response body structure is as follows:

To complete this action, you must then suspend the service.

```
{
  "name" : "suspend",
  "url" : "https://host:port/Automation/version/objects/Schedules/{id}/actions/
suspend/invoke",
  "method" : "POST",
  "parameters" : []
}
```

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Statu s code	HTTP name	Description
200	OK	Success.
401	Unauth orized	No login privilege.

Status code	HTTP name	Description
404	Not found	Privilege is not valid or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx"
-X GET https://host:port/Automation/v1/objects/Schedules/6188/actions/suspend
```

Request header:

```
GET /Automation/v1/objects/Schedules/6188/actions/suspend HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 06:57:02 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 344067ec4b45cae5115ad7246538e207a5953_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
```

```
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "name" : "suspend",
  "href" : "https://host:port/Automation/v1/objects/Schedules/6188/actions/suspend/
invoke",
  "method" : "POST",
  "parameters" : []
}
```

## Suspending a scheduled service

**HTTP request syntax (URI)**

The following URI allows you to suspend a scheduled service. This request needs a minimum role of Submit.

```
POST https://host:port/Automation/version/objects/Schedules/id/actions/suspend/invoke
```



**Note:** Suspending allows you to temporarily stop a scheduled service and to resume it later. To cancel a scheduled service completely, you prepare to cancel the service and then cancel the scheduled service.

**Request**

The request body structure is as follows:

```
{
  "name" : "suspend",
  "url" : "https://host:port/Automation/version/objects/Schedules/{id}/actions/
suspend/invoke",
  "method" : "POST",
  "parameters" : []
}
```

**Response**

The response body structure is as follows:

```
{
  "instanceID" : "instance-id",
  "created" : "created-date-and-time",
  "updated" : "updated-date-and-time",
  "completed" : "completed-date-and-time",
  "state" : "state",
  "status" : "status",
  "affectedResources" : [ {...} ],
```

```

"result" : [ {...} ],
"resultType" : "result-type"
}

```

The following table describes the objects specified as the `affectedResources` member.

Output	Resource Name	Number	Description
Link to affected schedule	String	1	The link to the affected Schedule resource.

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Used for
200	OK	Success.
400	Bad request	Argument is not valid.
401	Unauthorized	No login privilege.
404	Not found	Privilege is not valid or no resource exists.
409	Conflict	The task is not in waiting status
412	Precondition failed	The server is not available.
413	Request entity too large	The request size exceeds the maximum limit.
500	Server-side error	Server processing error.

Statu s code	HTTP name	Used for
503	Service unavail able	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxxx"
-X POST --data-binary @./InputParameters.json https://host:port/Automation/v1
/objects/Schedules/6188/actions/suspend/invoke
```

Request header:

```
POST /Automation/v1/objects/Schedules/5931/actions/suspend/invoke HTTP/1.1
Authorization: Bearer eyJhbxxxx
User-Agent: curl/7.28.1
Host: host:port
Accept: application/json
Content-Type: application/json
Content-Length: 173
```

Response header:

```
HTTP/1.1 201 Created
Date: Wed, 12 Feb 2014 12:00:12 GMT
Server: Cosminexus HTTP Server
WWW-Authenticate: HSSO e935984d7c4cb04f268cb458e7ccf9ffedebf9e_V0300
Location: https://host:port/Automation/v1/objects/jobs/5e4874d9-0398-4b7d-919c-
2cfe9235f98e
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

Response body:

```
{
  "instanceID" : "5e4874d9-0398-4b7d-919c-2cfe9235f98e",
  "created" : "2014-02-12T21:00:12.432+09:00",
  "updated" : "2014-02-12T21:00:12.432+09:00",
  "completed" : "2014-02-12T21:00:12.432+09:00",
  "state" : "terminated",
  "status" : "completed",
```

```
"affectedResource" : [ "https://host:port/Automation/v1/objects/Schedules/5931" ]
}
```

## Preparing to resume a scheduled service

### HTTP request syntax (URI)

The following URI is the first step to resume a suspended scheduled service. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/Schedules/id/actions/resume
```

### Request

The body of the request must be empty.

### Response

The response body structure is as follows:

```
{
  "name" : "resume",
  "url" : "https://host:port/Automation/version/objects/Schedules/{id}/actions/
resume/invoke",
  "method" : "POST",
  "parameters" : []
}
```



**Note:** To complete this action, you must resume the scheduled service.

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Statu s code	HTTP name	Used for
200	OK	Resource retrieved or deleted successfully.
401	Unauth orized	No login privilege.
404	Bad request	Privilege is not valid or no resource exists.

Statu s code	HTTP name	Used for
412	Precon dition failed	The server is not available.
500	Server- side error	Server processing error.
503	Service unavail able	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx"
-X GET https://host:port/Automation/v1/objects/Schedules/6188/actions/resume
```

Request header:

```
GET /Automation/v1/objects/Schedules/6188/actions/resume HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 07:00:17 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 4623c51a6d0e21b84d1e933b27db36b2256ff47_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```



Response body:

```
{
  "name" : "resume",
  "href" : "https://host:port/Automation/v1/objects/Schedules/6188/actions/resume/
invoke",
  "method" : "POST",
  "parameters" : []
}
```

## Resuming a scheduled service

### HTTP request syntax (URI)

The following URI allows you to resume a scheduled service that has been suspended. This request needs a minimum role of Submit.

```
POST https://host:port/Automation/version/objects/Schedules/id/actions/resume/invoke
```

### Request

The request body structure is as follows:

```
{
  "name" : "resume",
  "url" : "https://host:port/Automation/version/objects/Schedules/{id}/actions/
resume/invoke",
  "method" : "POST",
  "parameters" : []
}
```

### Response

The response body structure is as follows:

```
{
  "instanceID" : "instance-id",
  "created" : "created-date-and-time",
  "updated" : "updated-date-and-time",
  "completed" : "completed-date-and-time",
  "state" : "state",
  "affectedResources" : [ {...} ],
  "result" : [ {...} ],
  "resultType" : "result-type"
}
```

The following table describes the objects specified as the `affectedResources` member.

Output	Resource Name	Number	Description
Link to affected schedule	String	1	The link to the affected Schedule resource.

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	Argument is not valid.
401	Unauthorized	No login privilege.
404	Not found	Privilege is not valid or no resource exists.
409	Conflict	The task is not in holding status.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H "Authorization: Bearer eyJhbxxx"
```

```
-X POST --data-binary @./InputParameters.json https://host:port/Automation/v1/objects/Schedules/6188/actions/resume/invoke
```

#### Request header:

```
POST /Automation/v1/objects/Schedules/6188/actions/resume/invoke HTTP/1.1
Authorization: Bearer eyJhbxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
Content-Length: 172
```

#### Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 07:01:47 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO ff1f666164d3a53918cb3cac3925fd76b4df4d_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

#### Response body:

```
{
  "instanceID" : "a0392d27-94ae-485d-af61-d573cff57a5b",
  "created" : "2014-07-31T16:01:47.873+09:00",
  "updated" : "2014-07-31T16:01:47.873+09:00",
  "completed" : "2014-07-31T16:01:47.873+09:00",
  "state" : "success",
  "affectedResource" : [ "https://host:port/Automation/v1/objects/Schedules/6188" ],
  "result" : []
}
```

## Tasks

A task is the running instance of a service and is generated when you run a service. As a result, whenever you submit a service, Hitachi Ops Center Automator creates a corresponding task (ID) that you can monitor, start and stop, and archive.

This module covers the management functions available for the Tasks resource.

## Getting a list of tasks

### HTTP request syntax (URI)

The following URI shows a list of tasks. You can identify the `instanceID` of the target task when operating a task. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/Tasks
```

### Request

The body of the request must be empty.

Query Parameters	Filter Condition
serviceID	equal to the value
scheduleID	equal to the value
serviceGroupID	equal to the value
serviceTemplateID	equal to the value
tags	include all the values or not (can be specified multiple times by comma delimited string)
q	Search the full text of the search target schema. All values can be specified multiple times by using half-width space delimited string. Text is case-insensitive.  Search target schema: name, submitter, description, serviceName, tags, notes

A query parameter is a type of query string.

You can express a query parameter as follows:

```
?query_parameter=value
```

For example:

```
?serviceID=16731
```

### Response

The response body structure is as follows:

```
{
  "data ":[ { ... } ],
  "count " : count
}
```

The following table describes the objects specified as the `data` member.

Output	Resource Name	Number	Description
List of tasks	Task	0..n	Task resource that matches the search condition

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	Query parameter is not valid.
401	Unauthorized	No login privilege.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbGxxxx" -X GET
https://host:port
/Automation/v1/objects/Tasks?serviceID=3569
```

Request header:

```
GET /Automation/v1/objects/Tasks?serviceID=3569 HTTP/1.1
Authorization: Bearer eyJhbGxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 06:34:43 GMT
Server: Cosminexus HTTP Server
```

```

Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 5b9bde37a79093e512f91b9c72c816d9c2407aca_vm011150_v0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json

```

**Response body:**

```

{
  "data" : [ {
    "instanceID" : 3042,
    "name" : "Execute Remote Command_20150731105831",
    "status" : "completed",
    "startTime" : "2015-07-31T11:30:00.000+09:00",
    "completionTime" : "2015-07-31T11:30:33.000+09:00",
    "scheduledStartTime" : "2015-07-31T11:30:00.000+09:00",
    "submitter" : "System",
    "submitTime" : "2015-07-31T11:00:06.000+09:00",
    "modifyTime" : "2015-07-31T12:37:03.000+09:00",
    "serviceState" : "maintenance",
    "scheduleType" : "schedule",
    "description" : "",
    "serviceName" : "Execute Remote Command",
    "tags" : "Windows,Execute Script",
    "recurrenceInterval" : "weekly",
    "recurrenceTime" : "11:30:00.000+09:00",
    "recurrenceStartDate" : "2015-07-31",
    "serviceGroupName" : "service_group_1",
    "todo" : true,
    "notes" : "Notes Test",
    "supportedActionType" : "",
    "serviceTemplateID" : 560,
    "scheduleID" : 3020,
    "serviceGroupID" : 3,
    "serviceID" : 2004
  }
}

```

## Selecting a task

### HTTP request syntax (URI)

The following URI allows you to view details of a specific task by using the `instanceID` for that task. You first obtain a list of task `instanceIDs`. This request needs a minimum role of `Submit`.

```
GET https://host:port/Automation/version/objects/Tasks/id
```

### Request

The body of the request must be empty.

### Response

The response body structure is as follows:

```
{
  "instanceID" : instance-id,
  "name" : "task-name",
  "status" : "task-status",
  "startTime" : "start-date-and-time",
  "completionTime" : "completion-time",
  "scheduledStartTime" : "schedule-start-date-and-time",
  "submitter" : "submit-user-name",
  "submitTime" : "created-date-and-time",
  "modifyTime" : "updated-date-and-time",
  "serviceState" : "service-state",
  "scheduleType" : "schedule-type",
  "description" : "description",
  "serviceName" : "service-name",
  "tags" : "tags",
  "recurrenceInterval" : "recurrenceInterval",
  "recurrenceTime" : "recurrenceTime",
  "recurrenceStartDate" : "recurrenceStartDate",
  "serviceGroupName" : "serviceGroupName",
  "toDo" : {true|false},
  "blackout" : {true|false},
  "notes" : "notes",
  "supportedActionType" : "supported-action-type",
  "stepStartTime" : "step-start-time",
  "serviceTemplateID" : service-template-id,
  "scheduleID" : schedule-id,
  "serviceGroupID" : service-group-id,
  "serviceID" : service-id
}
```

## Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	No login privilege.
404	Not found.	Privilege is not valid or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

## Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbGxxxx" -X GET
https://host:port
/Automation/v1/objects/Tasks/6148
```

Request header:

```
GET /Automation/v1/objects/Tasks/6148 HTTP/1.1
Authorization: Bearer eyJhbGxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 06:36:02 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO f4dc6c664b7dfcd5bc35cc24e28a9a6d888675ba_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```



Response body:

```
{
  "instanceID" : 6148,
  "name" : "Execute remote command_20140731152120",
  "status" : "completed",
  "startTime" : "2014-07-31T15:21:27.000+09:00",
  "completionTime" : "2014-07-31T15:21:39.000+09:00",
  "submitter" : "System",
  "submitTime" : "2014-07-31T15:21:25.000+09:00",
  "modifyTime" : "2014-07-31T15:22:08.000+09:00",
  "serviceState" : "test",
  "scheduleType" : "immediate",
  "description" : "",
  "serviceName" : "Execute remote command",
  "tags" : "Basic,OS_Operations",
  "serviceGroupName" : "Default Service Group",
  "toDo" : false,
  "notes" : "",
  "supportedActionType" : "",
  "serviceTemplateID" : 3557,
  "scheduleID" : 6146,
  "serviceGroupID" : 3,
  "serviceID" : 3569
}
```

## Getting a list of task actions

### HTTP request syntax (URI)

The following URI shows a list of actions for the Task resource. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/Tasks/id/actions
```

### Request

The body of the request must be empty.

### Response

The response structure is as follows:

```
{
  "data" : [ {
    "name" : "update",
    "href" : "https://host:port/Automation/version/objects/Tasks/{id}",
    "method" : "PUT",
    "parameters" : []
  }, {
    "name" : "delete",
```

```

    "url" : "https://host:port/Automation/version/objects/Tasks/{id}",
    "method" : "DELETE",
    "parameters" : []
  }, {
    "name" : "stop",
    "url" : "https://host:port/Automation/version/objects/Tasks/{id}/actions/stop/
invoke",
    "method" : "POST",
    "parameters" : []
  }, {
    "name" : "forceStop",
    "href" : "http://<host>:<port>/Automation/<version>/objects/Tasks/{id}/actions/
forceStop/invoke",
    "method" : "POST",
    "parameters" : []
  }, {
    "name" : "resubmit",
    "url" : "https://host:port/Automation/version/objects/Tasks/{id}/actions/resubmit/
invoke",
    "method" : "POST",
    "parameters" : []
  }, {
    "name" : "archive",
    "url" : "https://host:port/Automation/version/objects/Tasks/{id}/actions/archive/
invoke",
    "method" : "POST",
    "parameters" : []
  }, {
    "name" : "response",
    "href" : "https://host:port/Automation/version/objects/Tasks/{id}/actions/
response/invoke",
    "method" : "POST",
    "parameters" : []
  }, {
    "name" : "rerunStart",
    "href" : "http://<host>:<port>/Automation/<version>/objects/Tasks/{id}/actions/
rerunStart/invoke",
    "method" : "POST",
    "parameters" : []
  }, {
    "name" : " rerunStepStart",
    "href" : "http://<host>:<port>/Automation/<version>/objects/Tasks/{id}/actions/
rerunStepStart/invoke",
    "method" : "POST",
    "parameters" : []
  } ],
  "count" : 9
}

```

## Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	No login privilege.
404	Bad request	No privilege to delete tasks.
412	Precondition failed	Server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

## Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbxxx" -X GET
https://host:port
/Automation/v1/objects/Tasks/6148/actions
```

Request header:

```
GET /Automation/v1/objects/Tasks/6148/actions HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 06:37:16 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO c8dfe397998957d7f0f76ea350746ec765b892fd_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "data" : [ {
    "name" : "delete",
    "href" : "https://host:port/Automation/v1/objects/Tasks/6148",
    "method" : "DELETE",
    "parameters" : []
  }, {
    "name" : "stop",
    "href" : "https://host:port/Automation/v1/objects/Tasks/6148/actions/stop/invoke",
    "method" : "POST",
    "parameters" : []
  }, {
    "name" : "resubmit",
    "href" : "https://host:port/Automation/v1/objects/Tasks/6148/actions/resubmit/
invoke",
    "method" : "POST",
    "parameters" : []
  }, {
    "name" : "archive",
    "href" : "https://host:port/Automation/v1/objects/Tasks/6148/actions/archive/
invoke",
    "method" : "POST",
    "parameters" : []
  } ],
  "count" : 4
}
```

## Preparing to stop a task

### HTTP request syntax (URI)

The following URI is the initial step to stopping a task. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/Tasks/id/actions/stop
```

### Request

The body of the request must be empty.

### Response

The response body structure is as follows:

```
{
  "name" : "stop",
  "url" : "https://host:port/Automation/version/objects/Tasks/{id}/actions/stop/
invoke",
  "method" : "POST",
```

```
"parameters" : []
}
```

To complete this action, you stop the task.

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Used for
200	OK	Resource retrieved or deleted successfully.
401	Unauthorized	No login privilege.
404	Not found	Privilege is not valid or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbxxx" -X GET
https://host:port
/Automation/v1/objects/Tasks/6148/actions/stop
```

Request header:

```
GET /Automation/v1/objects/Tasks/6148/actions/stop HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 06:38:43 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 341afd74ecd83195876caef80c65b7d5499772_vm011150_v0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
```

```
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "name" : "stop",
  "href" : "https://host:port/Automation/v1/objects/Tasks/6148/actions/stop/invoke",
  "method" : "POST",
  "parameters" : []
}
```

## Stopping a task

**HTTP request syntax (URI)**

The following URI allows you to confirm the stoppage of a task. This request needs a minimum role of Submit.

```
POST https://host:port/Automation/version/objects/Tasks/id/actions/stop/invoke
```

**Request**

The body of the request must be empty.

For the content of the request body, use this format:

```
{
  "name" : "stop",
  "url" : "https://host:port/Automation/version/objects/Tasks/id/actions/stop/invoke",
  "method" : "POST",
  "parameters" : []
}
```

**Response**

The response body structure is as follows:

```
{
  "instanceID" : "instance-id",
  "created" : "created-date-and-time",
  "updated" : "updated-date-and-time",
  "completed" : "completed-date-and-time",
  "state" : "state",
  "affectedResources" : [ {...} ],
  "result" : [ {...} ],
  "resultType" : "result-type"
}
```

The following table describes the objects specified as the `affectedResources` member.

Output	Resource Name	Number	Description
Link to affected task	String	1	The link to the updated Task resource.

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success
400	Bad request	Argument is not valid.
401	Unauthorized	Authentication/authorization credentials are not valid. Notify user that authentication is required to access a resource through the WWW-authenticate header. If the request which already contains the authorization header is being performed, show that the authentication credentials were refused.
404	Not found	Privilege not valid, or no resource exists.
409	Conflict	The task is not in: In Progress, Waiting for Response, or Abnormal Detection status.
412	Precondition failed	The server is not available.
413	Request entity too large	The request size exceeds the maximum limit.
500	Server-side error	Processing error returned by the server.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H "Authorization: Bearer eyJhbxxx"
```

```
-X POST --data-binary @./InputParameters.json https://host:port/Automation/v1/objects/Tasks/6215/actions/stop/invoke
```

**Request header:**

```
POST /Automation/v1/objects/Tasks/6215/actions/stop/invoke HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
Content-Length: 164
```

**Response header:**

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 07:12:06 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO e9139aa2c73544a6fb312ff27aff35b5f491e0_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "instanceID" : "d84e4c57-000e-4249-9347-70c80db0ee49",
  "created" : "2014-07-31T16:12:06.476+09:00",
  "updated" : "2014-07-31T16:12:06.476+09:00",
  "completed" : "2014-07-31T16:12:06.476+09:00",
  "state" : "success",
  "affectedResource" : [ "https://host:port/Automation/v1/objects/Tasks/6215" ],
  "result" : []
}
```

## Preparing to force stop a task

**HTTP request syntax (URI)**

The following URI is the initial step to forcibly stop a task that cannot be stopped by the normal stop action. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/Tasks/id/actions/forceStop
```



**Request**

The body of the request must be empty.

**Response**

The response body structure is as follows:

```
{
  "name" : "forceStop",
  "url" : "https://host:port/Automation/version/objects/Tasks/{id}/actions/forceStop/
invoke",
  "method" : "POST",
  "parameters" : []
}
```

To complete this action, you must forcibly stop the task.

**Return codes**

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Used for
200	OK	Resource retrieved or deleted successfully.
401	Unauthorized	No login privilege.
404	Not found	Privilege is not valid or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbxxx" -X GET
https://host:port
/Automation/v1/objects/Tasks/6148/actions/forceStop
```

Request header:

```
GET /Automation/v1/objects/Tasks/6148/actions/forceStop HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
```

```
Host: host:port
Accept: application/json
```

**Response header:**

```
HTTP/1.1 200 OK
Date: Thu, 14 Jul 2016 08:59:07 GMT
Server: Cosminexus HTTP Server
Cache-Control: no-cache
WWW-Authenticate: HSSO
98c6c637d0601db13c7251d173c62b6d5b02837_V1o8Y30JdDBUB31jJSVPaRtjBSA=_V0810
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "name" : "forceStop",
  "href" : "http://host:port/Automation/v1/objects/Tasks/6148/actions/forceStop/
invoke",
  "method" : "POST",
  "parameters" : [ ]
}
```

## Forcibly stopping a task

**HTTP request syntax (URI)**

The following URI allows you to confirm the forced stoppage of a task. This request needs a minimum role of Submit.

```
POST https://host:port/Automation/version/objects/Tasks/id/actions/forceStop/invoke
```

**Request**

The body of the request must be empty.

For the content of the request body, use this format:

```
{
  "name" : "forceStop",
  "url" : "https://host:port/Automation/version/objects/Tasks/id/actions/forceStop/
invoke",
  "method" : "POST",
  "parameters" : []
}
```

## Response

The response body structure is as follows:

```
{
  "instanceID" : "instance-id",
  "created" : "created-date-and-time",
  "updated" : "updated-date-and-time",
  "completed" : "completed-date-and-time",
  "state" : "state",
  "affectedResources" : [ {...} ],
  "result" : [ {...} ],
  "resultType" : "result-type"
}
```

The following table describes the objects specified as the `affectedResources` member.

Output	Resource Name	Number	Description
Link to affected task	String	1	The link to the updated Task resource.

## Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success
401	Unauthorized	No login privilege
404	Not found	Privilege is not valid or no resource exists.
412	Precondition failed	The server is not running.
413	Request entity too large	The request size exceeds the maximum limit.
500	Server-side error	Processing error returned by the server.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxxx"
-X POST --data-binary @./InputParameters.json https://host:port/Automation/v1
/objects/Tasks/6215/actions/forceStop/invoke
```

Request header:

```
POST /Automation/v1/objects/Tasks/6215/actions/forceStop/invoke HTTP/1.1
Authorization: Bearer eyJhbxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
Content-Length: 164
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 14 Jul 2016 09:05:19 GMT
Server: Cosminexus HTTP Server
Cache-Control: no-cache
WWW-Authenticate: HSSO
3a7437eeb21dc9f9c3a052483b722cb661b16258_v1o8Y30JdDBUB31jJSVPaRtjBSA=_V0810
Transfer-Encoding: chunked
Content-Type: application/json
```

Response body:

```
{
  "instanceID" : "cd4554f2-209d-4148-8706-9a0e639e99da",
  "created" : "2016-07-14T17:05:19.198+09:00",
  "updated" : "2016-07-14T17:05:19.198+09:00",
  "completed" : "2016-07-14T17:05:19.198+09:00",
  "state" : "success",
  "affectedResource" : [ "https://host:port/Automation/v1/objects/Tasks/6215" ],
  "result" : []
}
```

## Preparing to resubmit a task

**HTTP request syntax (URI)**

The following URI is the initial step in resubmitting a task. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/Tasks/id/actions/resubmit
```

**Request**

The body of the request must be empty.

**Response**

The response body structure is as follows:

```
{
  "name" : "resubmit",
  "url" : "https://host:port/Automation/version/objects/Tasks/id/actions/resubmit/
invoke",
  "method" : "POST",
  "parameters" : [ {...} ]
}
```

To complete this action, you resubmit the task.

The following table describes the objects specified as the `parameters` member.

Output	Resource Name	Number	Description
Schedule	Schedule	1	The run schedule of service.
List of propertyValues	propertyValue	0..n	The input property of service.

**Return codes**

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Used for
200	OK	Resource retrieved or deleted successfully.
401	Unauthorized	No login privilege.
404	Not found	Privilege is not valid or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

**Example code****Request with cURL command:**

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxxx"
-X GET https://host:port/Automation/v1/objects/Tasks/6148/actions/resubmit
```

**Request header:**

```
GET /Automation/v1/objects/Tasks/6148/actions/resubmit HTTP/1.1
Authorization: Bearer eyJhbxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
```

**Response header:**

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 06:42:23 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO bae7b5b811e2ac13bc63cc7975da7ae272bf4fff_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "name" : "resubmit",
  "href" : "https://host:port/Automation/v1/objects/Tasks/6148/actions/resubmit/
invoke",
  "method" : "POST",
  "parameters" : [ {
    "name" : "Execute remote command_20140731152120_Resubmit",
    "submitter" : "System",
    "scheduleType" : "immediate",
    "description" : "",
    "scheduledStartTime" : "2014-07-31T15:42:23.447+09:00",
    "recurrenceInterval" : "daily",
    "recurrenceDayOfWeek" : "",
    "recurrenceDayOfMonth" : "",
    "recurrenceLastDayOfMonth" : false,
    "recurrenceStartDate" : "2014-07-31",
    "recurrenceTime" : "00:00:00",
    "serviceID" : 3569
```

```

}, {
  "instanceID" : 3564,
  "type" : "string",
  "keyName" : "common.targetHost",
  "value" : "172.17.9.36",
  "readOnly" : false,
  "hidden" : false,
  "serviceID" : 3569
}, {
  "instanceID" : 3565,
  "type" : "string",
  "keyName" : "common.remoteCommand",
  "value" : "date",
  "readOnly" : false,
  "hidden" : false,
  "serviceID" : 3569
}, {
  "instanceID" : 3568,
  "type" : "string",
  "keyName" : "common.remoteCommandParameter",
  "value" : "/t",
  "readOnly" : false,
  "hidden" : false,
  "serviceID" : 3569
} ]
}

```

## Resubmitting a task

### HTTP request syntax (URI)

The following URI allows you to resubmit a task. This request needs a minimum role of Submit.

```
POST https://host:port/Automation/version/objects/Tasks/id/actions/resubmit/invoke
```

### Request

For the content of the request body, use this format:

```

{
  "name" : "resubmit",
  "url" : "https://host:port/Automation/version/objects/Tasks/{id}/actions/resubmit/invoke",
  "method" : "POST",
  "parameters" : [ {...} ]
}

```

The following table describes the objects specified as the `parameters` member.

Output	Resource Name	Number	Description
Schedule	Schedule	1	The run schedule of the service.
List of propertyValues	propertyValue	0..n	The input property of the service.

The following tables show the valid properties.

- For common settings:

Resource Name	Element Name	Number
Schedule	name	1
Schedule	description	1
PropertyValue	keyName	0..n
PropertyValue	value	0..n
Schedule	scheduleType	1

- To run immediately: None
- For scheduled run:

Resource Name	Element Name	Number
Schedule	scheduledStartTime	1



- For recurring run:

Resource Name	Element Name	Number
Schedule	recurrenceInterval	1
Schedule	recurrenceMinutes	1
Schedule	recurrenceDayOfWeek	1
Schedule	recurrenceDayOfMonth	1
Schedule	recurrenceLastDayOfMonth	1
Schedule	recurrenceStartDate	1
Schedule	recurrenceTime	1

## Response

The response body structure is as follows:

```
{
  "instanceID" : "instance-id",
  "created" : "created-date-and-time",
  "updated" : "updated-date-and-time",
  "completed" : "completed-date-and-time",
  "state" : "state",
  "affectedResources" : [ {...} ],
  "result" : [ {...} ],
  "resultType" : "result-type"
}
```

The following table describes the objects returned as the `affectedResources` member.

Output	Resource Name	Number	Description
Link to created Schedule	String	1	The link to the created Schedule resource
Link to created Task	String	1	The link to the created Task resource

## Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	Argument is not valid.
401	Unauthorized	No login privilege.
404	Not found	Privilege is not valid or no resource exists.
409	Conflict	The task has not yet Completed, has Failed, or is in Canceled status.
412	Precondition failed	The server is not available.
413	Request entity too large	The request size exceeds the maximum limit.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

## Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx"
-X POST --data-binary @./InputParameters.json https://host:port/Automation/v1
/objects/Tasks/6148/actions/resubmit/invoke
```

Request header:

```
POST /Automation/v1/objects/Tasks/6148/actions/resubmit/invoke HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
Content-Length: 1234
Expect: 100-continue
```

**Response header:**

```

HTTP/1.1 100 Continue
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 06:44:25 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 71fe3e669923a2825b73d96141bacf9daa2b956_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json

```

**Response body:**

```

{
  "instanceID" : "fafelf21-f078-4d05-adde-7a16fd4b97ae",
  "created" : "2014-07-31T15:44:26.334+09:00",
  "updated" : "2014-07-31T15:44:26.334+09:00",
  "completed" : "2014-07-31T15:44:26.334+09:00",
  "state" : "success",
  "affectedResource" : [ "https://host:port/Automation/v1/objects/Schedules/6171",
"https://host:port/Automation/v1/objects/Tasks/6170" ],
  "result" : []
}

```

## Preparing to archive a task

**HTTP request syntax (URI)**

The following URI is the initial step to archiving a task to returning the URL of the targeted task. This request needs a minimum role of Modify.

```
DELETE https://host:port/Automation/version/objects/Tasks/id
```



**Note:** You might need to manually archive old tasks that are no longer needed for reuse. No new tasks can be created when the total number of tasks in the **Tasks** tab of the Ops Center Automator application exceeds 5,000.

**Request**

The body of the request must be empty.

**Response**

The Location header includes a URL to the archive action. For example:

```
https://host:port/Automation/version/Tasks/id/actions/archive
```

To complete this action, you retrieve information to archive the task.

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
204	No content	Success.
303	See other	Success.
401	Unauthorized	No login privilege.
403	Forbidden	No privilege to delete tasks.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbxxx" -X DELETE
https://host:port
/Automation/v1/objects/Tasks/6148
```

Request header:

```
DELETE /Automation/v1/objects/Tasks/6148 HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response header:

```
HTTP/1.1 303 See Other
Date: Thu, 31 Jul 2014 06:36:43 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 6b132bc612d8fc8f4816745f23b3da6c4df42880_vm011150_V0810
Access-Control-Allow-Origin: *
Location: https://10.197.193.245:22016/Automation/v1/objects/Tasks/6148/actions/archive
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
```

```
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: text/html;charset=utf-8
```

## Retrieving information to archive a task

### HTTP request syntax (URI)

The following URI is the initial step to archiving a task to returning the URL of the targeted task. This request needs a minimum role of Modify.

```
GET https://host:port/Automation/version/objects/Tasks/id/actions/archive
```



**Note:** You might need to manually archive old tasks that are no longer needed for reuse. No new tasks can be created when the total number of tasks in the **Tasks** tab of the Ops Center Automator application exceeds 5,000.

### Request

The body of the request must be empty.

### Response

The response body structure is as follows:

```
{
  "name" : "archive",
  "url" : "https://host:port/Automation/version/objects/Tasks/id/actions/archive/
invoke",
  "method" : "POST",
  "parameters" : []
}
```

## Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Used for
200	OK	Resource retrieved or deleted successfully.
401	Unauthorized	No login privilege.
404	Not found	Privilege is not valid or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

## Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx"
-X GET https://host:port/Automation/v1/objects/Tasks/6148/actions/archive
```

Request header:

```
GET /Automation/v1/objects/Tasks/6148/actions/archive HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 06:45:26 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 49202ee23d4d9551153a1d6e7cb410687624424d_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
```

```
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "name" : "archive",
  "href" : "https://host:port/Automation/v1/objects/Tasks/6148/actions/archive/
invoke",
  "method" : "POST",
  "parameters" : []
}
```

## Archiving a task

**HTTP request syntax (URI)**

The following URI allows you to confirm archiving a task that is no longer needed for reuse. This request needs a minimum role of Modify.

```
POST https://host:port/Automation/version/objects/Tasks/id/actions/archive/invoke
```

**Request**

```
{
  "name" : "archive",
  "url" : "https://host:port/Automation/version/objects/Tasks/{id}/actions/archive/
invoke",
  "method" : "POST",
  "parameters" : []
}
```

**Response**

The response body structure is as follows:

```
{
  "instanceID" : "instance-id",
  "created" : "created-date-and-time",
  "updated" : "updated-date-and-time",
  "completed" : "completed-date-and-time",
  "state" : "state",
  "affectedResources" : [ {...} ],
  "result" : [ {...} ],
  "resultType" : "result-type"
}
```

The following table describes the objects specified as the `affectedResources` member.

Output	Resource Name	Number	Description
Link to affected task	String	1	The link to the affected Task resource.

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Used for
200	Created	Success
400	Bad request	Argument is not valid.
401	Unauthorized	No login privilege.
404	Not found	Privilege is not valid or no resource exists.
409	Conflict	The task is not in Completed, Failed, or Terminated status.
412	Precondition failed	The server is not available.
413	Request entity too large	The request size exceeds the maximum limit.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx"
-X POST --data-binary @./InputParameters.json https://host:port/Automation/v1
/objects/Tasks/6148/actions/archive/invoke
```

Request header:

```
POST /Automation/v1/objects/Tasks/6148/actions/archive/invoke HTTP/1.1
Authorization: Bearer eyJhbxxx
```



```
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
Content-Length: 170
```

#### Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 06:48:09 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 98de66d0ac8183b2c1e2e79b520fb85c5cce49c_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

#### Response body:

```
{
  "instanceID" : "cd4554f2-209d-4148-8706-9a0e639e99da",
  "created" : "2014-07-31T15:48:10.198+09:00",
  "updated" : "2014-07-31T15:48:10.198+09:00",
  "completed" : "2014-07-31T15:48:10.198+09:00",
  "state" : "success",
  "affectedResource" : [ "https://host:port/Automation/v1/objects/TaskHistories/6182" ],
  "result" : []
}
```

## Preparing to rerun a task from the failed step

### HTTP request syntax (URI)

The following URI is the initial step in rerunning a task (including the failed step). This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/Tasks/id/actions/rerunStart
```

### Request

The body of the request must be empty.

## Response

The response body structure is as follows:

```
{
  "name" : "rerunStart/invoke",
  "href" : "http://<host>:<port>/Automation/<version>/objects/Tasks/{id}/actions/
rerunStart",
  "method" : "POST",
  "parameters" : []
}
```

To complete this action, you rerun the task from the failed step.

## Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Used for
200	OK	Success
401	Unauthorized	No login privilege.
404	Not found	Privilege is not valid or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

## Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx"
-X GET https://host:port/Automation/v1/objects/Tasks/6148/actions/rerunStart
```

Request header:

```
GET /Automation/v1/objects/Tasks/6148/actions/rerunStart
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

**Response header:**

```

HTTP/1.1 200 OK
Date: Thu, 14 Jul 2016 09:06:26 GMT
Server: Cosminexus HTTP Server
Cache-Control: no-cache
WWW-Authenticate: HSSO
689e8cb78d4da2ca16866864bdf6906988688169_v1o8Y30JdDBUB31jJSVPaRtjBSA=_V0810
Transfer-Encoding: chunked
Content-Type: application/json

```

**Response body:**

```

{
  "name" : "rerunStart",
  "href" : "http://host:port/Automation/v1/objects/Tasks/6148/actions/rerunStart/
invoke",
  "method" : "POST",
  "parameters" : [ ]
}

```

## Rerunning a task from the failed step

**HTTP request syntax (URI)**

The following URI allows you to rerun a task (including the failed step). This request needs a minimum role of Submit.

```
POST https://host:port/Automation/version/objects/Tasks/id/actions/rerunStart/invoke
```

**Request**

For the content of the request body, use this format:

```

{ "name" : "rerunStart",
  "href" : "http://<host>:<port>/Automation/<version>/objects/Tasks/
{id}/actions/rerunStart/rerunStart",
  "method" : "POST",
  "parameters" : [ ] }

```

**Response**

The response body structure is as follows:

```

{
  "instanceID" : "instance-id",
  "created" : "created-date-and-time",
  "updated" : "updated-date-and-time",
  "completed" : "completed-date-and-time",
  "state" : "state",

```

```

"affectedResources" : [ {...} ],
"result" : [ {...} ],
"resultType" : "result-type"
}

```

The following table describes the objects specified as the `affectedResources` member.

Output	Resource Name	Number	Description
Link to affected task	String	1	The link to the updated Task resource.

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	Argument is not valid.
401	Unauthorized	No login privilege.
404	Not found	Privilege is not valid or no resource exists.
409	Conflict	The task has not yet Completed, has Failed, or is in Canceled status.
412	Precondition failed	The server is not available.
413	Request entity too large	The request size exceeds the maximum limit.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```

curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx"

```

```
-X POST --data-binary @./InputParameters.json https://host:port/Automation/v1/objects/Tasks/6148/actions/rerunStart/invoke
```

**Request header:**

```
POST /Automation/v1/objects/Tasks/30180/actions/rerunStart/invoke HTTP/1.1
Authorization: Bearer eyJhbxxxx
User-Agent: curl/7.36.0
host:port
Accept: application/json
```

**Response header:**

```
HTTP/1.1 200 OK
Date: Thu, 14 Jul 2016 09:15:15 GMT
Server: Cosminexus HTTP Server
Cache-Control: no-cache
WWW-Authenticate: HSSO
fe8ad3b95ae23c985d9dfe6616166d80757fcd_Vlo8Y30JdDBUB3ljJSVPaRtjBSA=_V0810
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "instanceID" : "cd4554f2-209d-4148-8706-9a0e639e99da",
  "created" : "2016-07-14T17:15:15.198+09:00",
  "updated" : "2016-07-14T17:15:15.198+09:00",
  "completed" : "2016-07-14T17:15:15.198+09:00",
  "state" : "success",
  "affectedResource" : [ "https://host:port/Automation/v1/objects/Tasks/30180" ],
  "result" : []
}
```

## Preparing to rerun a task after the failed step

**HTTP request syntax (URI)**

The following URI is the initial step in rerunning a task (after the failed step). This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/Tasks/id/actions/rerunStepStart
```

**Request**

The body of the request must be empty.

## Response

The response body structure is as follows:

```
{
  "name" : "rerunStart",
  "href" : "http://<host>:<port>/Automation/<version>/objects/Tasks/{id}/actions/
rerunStepStart/invoke",
  "method" : "POST",
  "parameters" : []
}
```

To complete this action, you rerun the task after the failed step.

## Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Used for
200	OK	Success
401	Unauthorized	No login privilege.
404	Not found	Privilege not valid or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

## Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx"
-X GET https://host:port/Automation/v1/objects/Tasks/30180/actions/rerunStepStart
```

Request header:

```
GET /Automation/v1/objects/Tasks/30180/actions/rerunStepStart HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
```

**Response header:**

```

HTTP/1.1 200 OK
Date: Thu, 14 Jul 2016 09:10:04 GMT
Server: Cosminexus HTTP Server
Cache-Control: no-cache
WWW-Authenticate: HSSO
dcb17ccd072bca7688114e63ae72f388eab847_V1o8Y30JdDBUB31jJSVPartjBSA=_V0810
Transfer-Encoding: chunked
Content-Type: application/json

```

**Response body:**

```

{
  "name" : "rerunStepStart",
  "href" : "http://host:port/Automation/v1/objects/Tasks/30180/actions/rerunStepStart/
invoke",
  "method" : "POST",
  "parameters" : [ ]
}

```

## Rerunning a task after the failed step

**HTTP request syntax (URI)**

The following URI allows you to rerun a task (after the failed step). This request needs a minimum role of Submit.

```

POST https://host:port/Automation/version/objects/Tasks/id/actions/rerunStepStart/
invoke

```

**Request**

For the content of the request body, use this format:

```

{
  "name" : "rerunStepStart",
  "href" : "http://<host>:<port>/Automation/<version>/objects/Tasks/{id}/actions/
rerunStart/invoke",
  "method" : "POST",
  "parameters" : []
}

```

**Response**

The response body structure is as follows:

```

{
  "instanceID" : "instance-id",
  "created" : "created-date-and-time",

```

```

"updated" : "updated-date-and-time",
"completed" : "completed-date-and-time",
"state" : "state",
"affectedResources" : [ {...} ],
"result" : [ {...} ],
"resultType" : "result-type"
}

```

The following table describes the objects specified as the `affectedResources` member.

Output	Resource Name	Number	Description
Link to affected task	String	1	The link to the updated Task resource.

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	Argument not valid.
401	Unauthorized	No login privilege.
404	Not found	Privilege not valid or no resource exists.
409	Conflict	The task has not yet Completed, has Failed, or is in Canceled status.
412	Precondition failed	The server is not available.
413	Request entity too large	The request size exceeds the maximum limit.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.



**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxxx"
-X POST --data-binary @./InputParameters.json https://host:port/Automation/v1
/objects/Tasks/30180/actions/rerunStepStart/invoke
```

Request header:

```
POST /Automation/v1/objects/Tasks/30180/actions/rerunStepStart/invoke HTTP/1.1
Authorization: Bearer eyJhbxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 14 Jul 2016 09:11:00 GMT
Server: Cosminexus HTTP Server
Cache-Control: no-cache
WWW-Authenticate: HSSO
cd134d41893282eb4dba7583ac9443ff8cdec9_V1o8Y30JdDBUB31jJSVPaRtjBSA=_V0810
Transfer-Encoding: chunked
Content-Type: application/json
```

Response body:

```
{
  "instanceID" : "cd4554f2-209d-4148-8706-9a0e639e99da",
  "created" : "2016-07-14T17:11:00.198+09:00",
  "updated" : "2016-07-14T17:11:00.198+09:00",
  "completed" : "2016-07-14T17:11:00.198+09:00",
  "state" : "success",
  "affectedResource" : [ "https://host:port/Automation/v1/objects/Tasks/30180" ],
  "result" : []
}
```

## Updating a task

### HTTP request syntax (URI)

The following URI allows you to update a specific task using the `instanceID` of the task. To obtain a list of task `instanceIDs`, you first get a list of tasks. This request needs a minimum role of `Submit`.

```
PUT https://host:port/Automation/version/objects/Tasks/id
```

### Request

```
{
  "instanceID" : instance-id,
  "name" : "task-name",
  "status" : "task-status",
  "startTime" : "start-date-and-time",
  "endTime" : "end-date-and-time",
  "scheduledStartTime" : "schedule-start-date-and-time",
  "submitter" : "submit-user-name",
  "submitTime" : "created-date-and-time",
  "modifyTime" : "updated-date-and-time",
  "serviceState" : "service-state",
  "scheduleType" : "schedule-type",
  "description" : "description",
  "serviceName" : "service-name",
  "tags" : "tags",
  "recurrenceInterval" : "recurrenceInterval",
  "recurrenceTime" : "recurrenceTime",
  "recurrenceStartDate" : "recurrenceStartDate",
  "serviceGroupName" : "serviceGroupName",
  "toDo" : {true|false},
  "notes" : "notes",
  "stepTime" : "step-time",
  "supportedActionType" : "supported-action-type",
  "serviceTemplateID" : service-template-id,
  "scheduleID" : schedule-id,
  "serviceGroupID" : service-group-id,
  "serviceID" : service-id
}
```

The following table describes the valid properties.

Resource Name	Element Name	Number
Task	notes	1
Task	toDo	1

## Response

The response body structure is as follows:

```
{
  "instanceID" : instance-id,
  "name" : "task-name",
  "status" : "task-status",
  "startTime" : "start-date-and-time",
  "endTime" : "end-date-and-time",
  "scheduledStartTime" : "schedule-start-date-and-time",
  "submitter" : "submit-user-name",
  "submitTime" : "created-date-and-time",
  "modifyTime" : "updated-date-and-time",
  "serviceState" : "service-state",
  "scheduleType" : "schedule-type",
  "description" : "description",
  "serviceName" : "service-name",
  "tags" : "tags",
  "recurrenceInterval" : "recurrenceInterval",
  "recurrenceTime" : "recurrenceTime",
  "recurrenceStartDate" : "recurrenceStartDate",
  "serviceGroupName" : "serviceGroupName",
  "toDo" : {true|false},
  "notes" : "notes",
  "supportedActionType" : "supported-action-type",
  "stepTime" : "step-time",
  "serviceTemplateID" : service-template-id,
  "scheduleID" : schedule-id,
  "serviceGroupID" : service-group-id,
  "serviceID" : service-id
}
```

## Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	Query parameter is not valid.
401	Unauthorized	No login privilege.
403	Forbidden	No privilege to edit task.
404	Bad request	No privilege to get tasks or specified task does not exist.
412	Precondition failed	The server is not available.
413	Request entity too large	The request size exceeds the maximum limit.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

## Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbGxxxx" PUT --data-binary @./InputParameters.json https://host:port/Automation/v1/objects/Tasks/3042
```

Request header:

```
PUT /Automation/v1/objects/Tasks/3042 HTTP/1.1
Authorization: Bearer eyJhbGxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Length: 667
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 06:34:43 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 5b9bde37a79093e512f91b9c72c816d9c2407aca_vm011150_V0810
Access-Control-Allow-Origin: *
```

```

Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json

```

**Response body:**

```

{
  "instanceID" : 3042,
  "name" : "Execute Remote Command_20150731105831",
  "status" : "completed",
  "startTime" : "2015-07-31T11:30:00.000+09:00",
  "completionTime" : "2015-07-31T11:30:33.000+09:00",
  "scheduledStartTime" : "2015-07-31T11:30:00.000+09:00",
  "submitter" : "System",
  "submitTime" : "2015-07-31T11:00:06.000+09:00",
  "modifyTime" : "2015-07-31T12:37:03.000+09:00",
  "serviceState" : "release",
  "scheduleType" : "schedule",
  "description" : "",
  "serviceName" : "Execute Remote Command",
  "tags" : "Windows,Linux,Execute Script",
  "serviceGroupName" : "Default Service Group",
  "toDo" : true,
  "notes" : "Notes Test",
  "supportedActionType" : "",
  "serviceTemplateID" : 560,
  "scheduleID" : 3020,
  "serviceGroupID" : 3,
  "serviceID" : 2004
}

```

## Preparing to respond to a task

### HTTP request syntax (URI)

The following URI is the initial step responding to a task. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/Tasks/id/actions/response
```

### Request

The body of the request must be empty.

## Response

The response body structure is as follows:

```
{
  "name" : "response",
  "url" : "https://host:port/Automation/version/objects/Tasks/{id}/actions/response/
invoke",
  "method" : "POST",
  "parameters" : [ {...} ]
}
```

To complete this action, you respond to the task.

The following table describes the objects specified as the `parameters` member.

Output	Resource Name	Number	Description
Message and Response choices	ResponseInput	1	Response input information

## Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Used for
200	OK	Resource retrieved or deleted successfully.
400	Bad request	Query parameter is not valid.
401	Unauthorized	No login privilege.
404	Not found	Privilege is not valid or no resource exists.
409	Conflict	The task is not in Waiting for Response status.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxxx"
-X GET https://host:port/Automation/v1/objects/Tasks/3179/actions/response
```

Request header:

```
GET /Automation/v1/objects/Tasks/3179/actions/response HTTP/1.1
Authorization: Bearer eyJhbxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2015 06:42:23 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO bae7b5b811e2ac13bc63cc7975da7ae272bf4fff_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

Response body:

```
{
  "name" : "response",
  "href" : "https://host:port/Automation/v1/objects/Tasks/3179/actions/response/
invoke",
  "method" : "POST",
  "parameters" : [ {
    "instanceID" : 3239,
    "dialogText" : "",
    "labelButton0" : "OK",
    "screenURL" : "services/default/index.jsp",
    "taskID" : 3179
  } ]
}
```

## Responding to a task

### HTTP request syntax (URI)

The following URI allows you to resubmit a task. This request needs a minimum role of Submit.

```
POST https://host:port/Automation/version/objects/Tasks/id/actions/response/invoke
```

### Request

For the content of the request body, use this format:

```
{
  "name" : "response",
  "url" : "https://host:port/Automation/version/objects/Tasks/{id}/actions/response/invoke",
  "method" : "POST",
  "parameters" : [ {...} ]
}
```

The following table describes the objects specified as the `parameters` member.

Input	Resource Name	Number	Description
ResponseInput	ResponseInput	1	Response input

The following tables provide the valid properties.

Resource Name	Element Name	Number
ResponseInput	instanceId	1
ResponseInput	dialogText	1
ResponseInput	labelbuttonX (X is any number)	1
ResponseInput	taskId	1

### Response

The response body structure is as follows:

```
{
  "instanceID" : "instance-id",
  "created" : "created-date-and-time",
  "updated" : "updated-date-and-time",
  "completed" : "completed-date-and-time",
  "state" : "state",
}
```



```

"affectedResources" : [ {...} ],
"result" : [ {...} ],
"resultType" : "result-type"
}

```

The following table describes the objects returned as the `affectedResources` member.

Output	Resource Name	Number	Description
Link to created Task	String	1	The link to the created Task resource

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	Argument is not valid.
401	Unauthorized	No login privilege.
404	Not found	Privilege is not valid or no resource exists.
409	Conflict	The task is not in Waiting for Response status.
412	Precondition failed	The server is not available.
413	Request entity too large	The request size exceeds the maximum limit.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```

curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx"
-X POST --data-binary @./InputParameters.json https://host:port/Automation/v1
/objects/Tasks/6148/actions/response/invoke

```

**Request header:**

```
POST /Automation/v1/objects/Tasks/3179/actions/response/invoke HTTP/1.1
Authorization: Bearer eyJhbxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
Content-Length: 329
```

**Response header:**

```
HTTP/1.1 100 Continue
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2015 06:44:25 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 71fe3e669923a2825b73d96141bacf9daa2b956_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "instanceID" : "4fb38028-81d7-4573-851a-672e7524a4fc",
  "created" : "2015-07-31T13:42:15.030+09:00",
  "updated" : "2015-07-31T13:42:15.030+09:00",
  "completed" : "2015-07-31T13:42:15.030+09:00",
  "state" : "success",
  "affectedResource" : [ "https://host:port/Automation/v1/objects/Tasks/3179" ],
  "result" : []
}
```

## Task histories

This module covers the management functions available for the Taskhistory resource:

## Getting a list of task histories

### HTTP request syntax (URI)

The following URI shows a list of task histories. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/TaskHistories
```

### Request

The body of the request must be empty.

Query Parameters	Filter Condition
start (interpreted as starting time)	greater than or equal to or the value
end (interpreted as ending time)	less than or equal to the value
serviceGroupID	equal to the value
tags	include all the values or not (can be specified multiple times by comma delimited string)
q	Search the full text of the search target schema. All values can be specified multiple times by using half-width space delimited strings. Text is case-insensitive.  Search target schema: name, submitter, serviceName, tags, description, notes

A query parameter is a type of query string.

You can express a query parameter as follows:

```
?Query_parameter=value
```

For example:

```
?serviceGroupID=16731
```

### Response

The response structure is as follows:

```
{
  "data": [ { ... } ],
  "count" : count}
```

The following table describes the objects specified as the `data` member.

Output	Resource Name	Number	Description
List of TaskHistories	TaskHistory	0..n	TaskHistory resource that matches the search condition

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	Query parameter is not valid.
401	Unauthorized	No login privilege.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbGxxxx" -X GET
https://host:port
/Automation/v1/objects/TaskHistories
```

Request header:

```
GET /Automation/v1/objects/TaskHistories HTTP/1.1
Authorization: Bearer eyJhbGxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Wed, 30 Jul 2014 09:58:52 GMT
Server: Cosminexus HTTP Server
```

```

Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 526a9166914df2e72c3fcd4c2caa56d1b5d47df_vm011150_v0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json

```

**Response body:**

```

{
  "data" : [ {
    "instanceID" : 2194,
    "name" : "Execute remote command_20140722182922",
    "submitter" : "System",
    "serviceName" : "Execute remote command",
    "tags" : "Basic,OS_Operations",
    "scheduleType" : "immediate",
    "startTime" : "2014-07-22T18:29:26.000+09:00",
    "completionTime" : "2014-07-22T18:29:33.000+09:00",
    "archiveTime" : "2014-07-30T04:00:02.000+09:00",
    "taskID" : 1279,
    "submitTime" : "2014-07-22T18:29:25.000+09:00",
    "status" : "completed",
    "description" : "",
    "serviceState" : "test",
    "todo" : false,
    "notes" : "",
    "serviceGroupName" : "Default Service Group",
    "serviceGroupID" : 3
  }, {
    "instanceID" : 2188,
    "name" : "Allocate Volumes for Exchange Server_20140722194845",
    "submitter" : "System",
    "serviceName" : "Allocate Volumes for Exchange Server",
    "tags" : "Exchange,Add New Storage",
    "scheduleType" : "immediate",
    "startTime" : "2014-07-22T19:50:07.000+09:00",
    "completionTime" : "2014-07-22T19:53:18.000+09:00",
    "archiveTime" : "2014-07-30T04:00:02.000+09:00",
    "taskID" : 2091,
    "submitTime" : "2014-07-22T19:50:06.000+09:00",
    "status" : "failed",
    "description" : "",
    "serviceState" : "test",
    "todo" : false,
    "notes" : "",
    "serviceGroupName" : "Default Service Group",
    "serviceGroupID" : 3
  }
]

```

```

} ],
  "count" : 2
}

```

## Deleting task histories

### HTTP request syntax (URI)

The following URI allows you to delete task histories using parameters. This request needs a minimum role of Modify.

```
DELETE https://host:port/Automation/version/objects/TaskHistories
```

### Request

The body of the request must be empty.

Query Parameters	Filter Condition
start	greater than or equal to or the value
end	less than or equal to the value
serviceGroupID	equal to the value

A query parameter is a type of query string.

You can express a query parameter as follows:

```
?Query_parameter=version
```

For example:

```
?serviceGroupID=16731
```

### Response

None

## Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
204	No content	Request was successful, but if the response to be returned does not exist, return this code instead of 200.
400	Unauthorized	Query parameter not valid.
401	Unauthorized	No login privilege.
403	Not found	No privilege to delete task histories.
412	Precondition failed	The server is not running.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

## Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbGxxxx" -X DELETE
https://host:port
/Automation/v1/objects/TaskHistories?serviceGroupID=3
```

Request header:

```
DELETE /Automation/v1/objects/TaskHistories?serviceGroupID=3 HTTP/1.1
Authorization: Bearer eyJhbGxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response header:

```
HTTP/1.1 204 No Content
Date: Wed, 30 Jul 2014 10:06:17 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 2df06ec2c49cb82d18c34f307cbaaab6261db87e_vm011150_V0810
Access-Control-Allow-Origin: *
```

```

Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Content-Length: 0
Content-Type: application/json

```

Response body:

None

## Selecting a task history

### HTTP request syntax (URI)

The following URI allows you to obtain the detailed information of a task history. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/TaskHistories/id
```



**Note:** Obtain the ID of the targeted task history by getting the list of task histories.

### Request

The body of the request must be empty.

### Response

The response structure is as follows:

```

{
  "instanceID" : instance-id,
  "name" : "task-name",
  "submitter" : "submit-user-name",
  "serviceName" : "service-name",
  "tags" : "tags",
  "scheduleType" : "type-of-schedule",
  "scheduledStartTime" : "schedule-start-date-and-time",
  "startTime" : "start-date-and-time",
  "completionTime" : "completion-date-and-time",
  "stepStartTime" : "step-start-time",
  "recurrenceInterval" : "interval-type",
  "recurrenceMinutes" : "recurrence-minutes",
  "recurrenceDayOfWeek" : "interval-of-weekly-job",
  "recurrenceDayOfMonth" : "interval-of-monthly-job",
  "recurrenceLastDayOfMonth" : {true|false},
  "recurrenceTime" : "exec-time-of-day",
  "archiveTime" : "removed-date-and-time",
  "taskID" : task-id,
  "submitTime" : "submit-date-and-time",
  "recurrenceStartDate" : "recurrence-start-date-and-time",

```



```

"status" : "task-status",
"description" : "description",
"serviceState" : "service-state",
"todo" : {true|false},
"notes" : "notes",
"serviceGroupName" : "service-group-name",
"serviceGroupID" : service-group-id
}

```

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	No content	Success
401	Unauthorized	No login privilege.
404	Not found	No privilege to get services or no service exists.
412	Precondition failed	A task generated from the specified service exists or the service is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```

curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx"
-X GET https://host:port/Automation/v1/objects/TaskHistories/6183

```

Request header:

```

GET /Automation/v1/objects/TaskHistories/2188 HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json

```

**Response header:**

```

HTTP/1.1 200 OK
Date: Wed, 30 Jul 2014 10:02:32 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 538436c5e7e7ab15ec5156e8408a9f1ecb11f64_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json

```

**Response body:**

```

{
  "instanceID" : 2188,
  "name" : "Allocate Volumes for Exchange Server_20140722194845",
  "submitter" : "System",
  "serviceName" : "Allocate Volumes for Exchange Server",
  "tags" : "Exchange,Add New Storage",
  "scheduleType" : "immediate",
  "startTime" : "2014-07-22T19:50:07.000+09:00",
  "completionTime" : "2014-07-22T19:53:18.000+09:00",
  "archiveTime" : "2014-07-30T04:00:02.000+09:00",
  "taskID" : 2091,
  "submitTime" : "2014-07-22T19:50:06.000+09:00",
  "status" : "failed",
  "description" : "",
  "serviceState" : "test",
  "toDo" : false,
  "notes" : "",
  "serviceGroupName" : "Default Service Group",
  "serviceGroupID" : 3
}

```

## Deleting a task history

**HTTP request syntax (URI)**

The following URI allows you to delete the task history of archived tasks that you no longer need. This request needs a minimum role of Modify.

Obtain the `instanceID` of the targeted task history by getting a list of task histories.

```
DELETE https://host:port/Automation/version/objects/TaskHistories/id
```

**Request**

The body of the request must be empty.

**Response**

None

**Return codes**

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
204	No content	Request was successful, but if the response to return does not exist, return this code instead of 200.
401	Unauthorized	No login privilege.
403	Forbidden	No privilege to delete task histories.
412	Precondition failed	A task generated from the specified service exists or the service is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbGxxxx" -X DELETE
https://host:port
/Automation/v1/objects/TaskHistories/2188
```

Request header:

```
DELETE /Automation/v1/objects/TaskHistories/2188 HTTP/1.1
Authorization: Bearer eyJhbGxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

**Response header:**

```

HTTP/1.1 204 No Content
Date: Wed, 30 Jul 2014 10:04:52 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 5e60b5f963ee1a665099c7694b34d5a19144661_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Content-Length: 0
Content-Type: application/json

```

**Response body:**

None

## Getting a list of task history actions

**HTTP request syntax (URI)**

The following URI shows a list of actions for the Taskhistory resource. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/TaskHistories/id/actions
```

**Request**

The body of the request must be empty.

**Response**

The response structure is shown as follows:

```

{
  "data" : [ {
    "name" : "delete",
    "url" : "https://host:port/Automation/version/objects/TaskHistories/{id}",
    "method" : "DELETE",
    "parameters" : []
  } ],
  "count": 1
}

```

**Return codes**

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success. A request has processed appropriately.
401	Unauthorized	Authentication/authorization credentials are not valid.  Notify user that authentication is required to access a resource through the WWW-authenticate header. If the request which already contains the authorization header is being performed, show that the authentication credentials were refused.
404	Not found	Privilege is not valid or no resource exists.
412	Precondition failed	The request was not received in a certain order and has failed a precondition.
500	Server-side error	Processing error returned by the server.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbxxx" -X GET
https://host:port
/Automation/v1/objects/TaskHistories/2188/actions
```

Request header:

```
GET /Automation/v1/objects/TaskHistories/2188/actions HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

**Response header:**

```

HTTP/1.1 200 OK
Date: Wed, 30 Jul 2014 10:03:39 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 1595fdeeadfd2cf21b546d4b23ec4257c63e53a5_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json

```

**Response body:**

```

{
  "data" : [ {
    "name" : "delete",
    "href" : "https://host:port/Automation/v1/objects/TaskHistories/2188",
    "method" : "DELETE",
    "parameters" : []
  } ],
  "count" : 1
}

```

## Property definitions

This module covers the management functions available for the PropertyDefinition resource:

### Getting a list of property definitions

**HTTP request syntax (URI)**

The following URI shows a list of property definitions for a service or task. Properties definitions can include the host name, user ID, and password and can also be shared across multiple services or tasks. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/PropertyDefinitions
```

**Request**

The body of the request must be empty.

Query Parameters	Filter Condition
serviceID	equal to the value
taskID	equal to the value
serviceTemplatelD	equal to the value

A query parameter is a type of query string.

You can express a query parameter as follows:

```
?Query_parameter=version
```

For example:

```
?serviceID=16731
```

**Response**

The response body structure is as follows:

```
{
  "data": [ {...} ],
  "count" : count
}
```

The following table describes the objects specified as the `data` member.

Output	Resource Name	Number	Description
List of property definitions	PropertyDefinition	0..n	PropertyDefinition resource that matches the search condition

**Return codes**

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success. A request has processed appropriately.
401	Unauthorized	Authentication/authorization credentials not valid. Notify user that authentication is required to access a resource through the WWW-authenticate header. If the request which already contains the authorization header is being performed, show that the authentication credentials were refused.
412	Precondition failed	The request was not received in a certain order and has failed a precondition.
500	Server-side error	Processing error returned by the server.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx" -X
GET https://host:port/Automation/v1/objects/PropertyDefinitions?serviceID=5151 >
Output.json
```



**Note:** In this example, the output from the query, `PropertyDefinitions?serviceID=5151` is sent to a text file called `Output.json` in your current folder. You can view or modify this file as needed to update a property definition.

Request header:

```
GET /Automation/v1/objects/PropertyDefinitions?serviceID=5151 HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.28.1
Host: host:port
Accept: application/json
Content-Type: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Wed, 12 Feb 2014 12:53:03 GMT
Server: Cosminexus HTTP Server
```



```

WWW-Authenticate: HSSO 4aac2080983c3b3c3061b6acff946aa3726537db_v0300
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json

```

Response body:

```

{
  "data": [ { ... } ],
}

```

## Getting a property definition

### HTTP request syntax (URI)

The following URI shows a list of property definitions. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/PropertyDefinitions/id
```

### Request

The body of the request must be empty.

### Response

The response body structure is as follows:

```

{
  "instanceID" : instance-id,
  "keyName" : "key-name",
  "displayName" : "display-name",
  "defaultValue" : "default-value",
  "type" : "type",
  "visibility" : "visibility",
  "scope" : "scope",
  "description" : "description",
  "mode" : "mode",
  "required" : {true|false},
  "maxLength" : max-length,
  "minLength" : min-length,
  "minValue" : min-value,
  "maxValue" : max-value,
  "pattern" : "pattern",
  "valueList" : "value-list",
  "propertyGroupName" : "property-group-name",
  "validationScript" : "validation-script",
  "readOnly" : {true|false},
  "hidden" : {true|false},
  "reference" : {true|false},
}

```

```
"serviceTemplateID" : service-template-id
}
```

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	No login privilege.
404	Not found.	Privilege is not valid or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxxx" -X
GET https://host:port/Automation/v1/objects/PropertyDefinitions/1459
```

Request header:

```
GET /Automation/v1/objects/PropertyDefinitions/1459 HTTP/1.1
Authorization: Bearer eyJhbxxxx
User-Agent: curl/7.28.1
Host: host:port
Accept: application/json
Content-Type: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Wed, 12 Feb 2014 13:03:38 GMT
Server: Cosminexus HTTP Server
WWW-Authenticate: HSSO 5e692433c9c62df865e7119cbd5eaa88e197de2_V0810
Cache-Control: no-cache
```

```
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "instanceID" : 1459,
  "keyName" : "Oracle.primaryServerName",
  "displayName" : "?dna_property.Oracle.primaryServerName.displayName?",
  "defaultValue" : "",
  "type" : "string",
  "visibility" : "exec",
  "scope" : "local",
  "description" : "?dna_property.Oracle.primaryServerName.description?",
  "mode" : "in",
  "required" : true,
  "maxLength" : 255,
  "minLength" : 1,
  "pattern" : "^[0-9a-zA-Z\\.\-]*$",
  "readOnly" : false,
  "hidden" : false
}
```

## Getting a list of property definitions actions

**HTTP request syntax (URI)**

The following URI shows a list of actions for the PropertyDefinition resource. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/PropertyDefinitions/id/actions
```

**Request**

The body of the request must be empty.

**Response**

The response structure is as follows:

```
{
  "data" : [],
  "count" : count
}
```

**Return codes**

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Resource retrieved or deleted successfully.
401	Unauthorized	Authentication/authorization credentials not valid.
404	Not found	Privilege not valid or no resource exists.
412	Precondition Failed	Request conflicts with another request, or conflicts with the current state of the object.
500	Server-side Error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx" -X
GET https://host:port/Automation/v1/objects/PropertyDefinitions/1459/actions
```

Request header:

```
GET /Automation/v1/objects/PropertyDefinitions/1459/actions HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.28.1
Host: host:port
Accept: application/json
Content-Type: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Wed, 12 Feb 2014 13:04:54 GMT
Server: Cosminexus HTTP Server
WWW-Authenticate: HSSO 9895715f1e64cf16ffee1630d192820b3d6ac1b_v0300
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

Response body:

```
{
  "data" : []
}
```

## Property values

This module covers the management functions available for the PropertyValue resource:

### Getting a list of property values

#### HTTP request syntax (URI)

The following URI shows a list of property values for a property definition of a service or task. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/PropertyValues
```

#### Request

The body of the request must be empty.

Query Parameters	Filter Condition
serviceID	equal to the value
scheduleID	equal to the value
taskID	equal to the value

A query parameter is a type of query string.

You can express a query parameter as follows:

```
?Query_parameter=version
```

For example:

```
?serviceID=16731
```



**Note:** To get property values for a service, a schedule, or a task (for example), you must specify the corresponding query parameters for `serviceID`, `scheduleID`, or `taskID`, respectively. Without these query parameters, only the service share properties are returned as a response.

**Response**

The response body structure is as follows:

```
{
  "data": [ {...} ],
  "count" : count
}
```

The following table describes the objects specified as the `data` member.

Output	Resource Name	Number	Description
List of property values	PropertyValue	0..n	PropertyValue resource that matches the search condition

**Return codes**

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success. A request has processed appropriately.
401	Unauthorized	Authentication/authorization credentials are not valid. Notify user that authentication is required to access a resource through the WWW-authenticate header. If the request which already contains the authorization header is being performed, show that the authentication credentials were refused.
412	Precondition failed	The request was not received in a certain order and has failed a precondition.
500	Server-side error	Processing error returned by the server.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx"
-X GET https://host:port/Automation/v1/objects/PropertyValues?serviceID=3569
```

Request header:

```
GET /Automation/v1/objects/PropertyValues?serviceID=3569 HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Wed, 12 Feb 2014 13:07:40 GMT
Server: Cosminexus HTTP Server
WWW-Authenticate: HSSO 79879316d8774b77e381de745fb21aa2e735793_V0300
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

Response body:

```
{
  "data" : [ {
    "instanceID" : 3564,
    "type" : "string",
    "keyName" : "common.targetHost",
    "value" : "172.17.9.36",
    "readOnly" : false,
    "hidden" : false,
    "serviceID" : 3569
  }, {
    "instanceID" : 3565,
    "type" : "string",
    "keyName" : "common.remoteCommand",
    "value" : "date",
    "readOnly" : false,
    "hidden" : false,
    "serviceID" : 3569
  }, {
    "instanceID" : 3568,
    "type" : "string",
    "keyName" : "common.remoteCommandParameter",
    "value" : "/t",
```

```

    "readOnly" : false,
    "hidden" : false,
    "serviceID" : 3569
  }, {
    "instanceID" : 3574,
    "type" : "string",
    "keyName" : "common.stdoutProperty",
    "value" : "",
    "readOnly" : false,
    "hidden" : false,
    "serviceID" : 3569
  } ],
  "count" : 4
}

```

## Getting a property value

### HTTP request syntax (URI)

The following URI allows you to select a property value. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/PropertyValues/id
```

### Request

The body of the request must be empty.

### Response

The response body structure is as follows:

```

{
  "instanceID" : instance-id,
  "type" : "type",
  "keyName" : "key-name",
  "value" : "value",
  "readOnly" : {true|false},
  "hidden" : {true|false},
  "serviceID" : service-id,
  "scheduleID" : schedule-id,
  "taskID" : task-id
}

```

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.



Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	No login privilege.
404	Not found.	Privilege is or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxxx"
-X GET https://host:port/Automation/v1/objects/PropertyValues/3568
```

Request header:

```
GET /Automation/v1/objects/PropertyValues/3568 HTTP/1.1
Authorization: Bearer eyJhbxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 07:33:41 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 046a97637ba2051dd7e9f76d973fb9aee25dc27_vm011150_v0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

Response body:

```
{
  "instanceID" : 3568,
```

```

"type" : "string",
"keyName" : "common.remoteCommandParameter",
"value" : "/t",
"readOnly" : false,
"hidden" : false,
"serviceID" : 3569
}

```

## Editing a specified property value

### HTTP request syntax (URI)



**Note:** After you have updated the properties through the following PUT method, you can then submit or POST the modified service (through the specified `serviceID`).

The following URI allows you to change a property value, after you have edited the property value through an output file. This request needs a minimum role of Modify.

```
PUT https://host:port/Automation/version/objects/PropertyValues/id
```

### Request

The request body structure is as follows:

```

{
  "instanceID" : instance-id,
  "type" : "type",
  "keyName" : "key-name",
  "value" : "value",
  "readOnly" : {true|false},
  "hidden" : {true|false},
  "serviceID" : service-id,
  "scheduleID" : schedule-id,
  "taskID" : task-id
}

```

The following table describes the valid properties.

Resource Name	Element Name	Number
PropertyValue	value	1



**Note:** The value will not be updated if the `readOnly` attribute is set to true.

## Response

The response body structure is shown as follows:

```
{
  "instanceID" : "instance-id",
  "type" : "type",
  "keyName" : "key-name",
  "value" : "value",
  "readOnly" : {true|false},
  "hidden" : {true|false},
  "serviceID" : service-id,
  "scheduleID" : schedule-id,
  "taskID" : task-id,
}
```

## Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	Property value is not valid, or uneditable resource.
401	Unauthorized	No login privilege.
404	Not found	No privilege to get services or no resource exists.
403	Forbidden	The property value exists, but cannot grant privilege to update the value.
412	Precondition failed	The server is not available.
413	Request entity too large	The request size exceeds the maximum limit.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

## Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx"
```

```
-X PUT --data-binary @./InputParameters.json https://host:port/Automation/v1/objects/PropertyValues/3568
```

**Request header:**

```
PUT /Automation/v1/objects/PropertyValues/3568 HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
Content-Length: 191
```

**Response header:**

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 07:36:23 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO c64612f05d5742425bf69429a03de2bd1f120bd_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "instanceID" : 3568,
  "type" : "string",
  "keyName" : "common.remoteCommandParameter",
  "value" : "2014/07/31",
  "readOnly" : false,
  "hidden" : false,
  "serviceID" : 3569
}
```

## Editing multiple instances of a property value

**HTTP request syntax (URI)**

- Shows a mass update of the property value to carry out a specific service.
- Updates multiple service share properties.

This request needs a minimum role of Modify.



**Note:** You must first edit the property value through an output file. After you have updated the properties through the following PUT method, you can then submit or POST the modified service (specified through the `serviceID`).

The following URI allows you to update multiple instances of the same property value as follows:

```
PUT https://host:port/Automation/version/objects/PropertyValues
```

### Request

The request body structure is as follows:

```
{
  "data": [ { ... } ],
  "count" : count
}
```

When specifying the `serviceID` as a query, the update about all the non-corresponding resources will be ignored.

Query Parameter	Filter Condition
<code>serviceID</code>	equal to the value

When you do not specify the `serviceID` as a query, only the shared properties can be updated. In addition, specifying the `serviceID` also allows you to update the `readOnly` and `hidden` attributes.

A query parameter is a type of query string. You can express a query parameter as follows:

```
?Query_parameter=version
```

For example:

```
?serviceID=16731
```

The following table describes the valid properties.

Resource Name	Element Name	Number
PropertyValue	<code>instanceID</code>	0..n
PropertyValue	<code>value</code>	0..n
PropertyValue	<code>readOnly</code>	0..n
PropertyValue	<code>hidden</code>	0..n

The value will not be updated if the `readOnly` attribute is set to true.

## Response

The response body structure is as follows:

```
{
  "data ":[ {...} ],
  "count" : count
}
```

## Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	Query parameter is not valid.
401	Unauthorized	No login privilege.
403	Forbidden	The property value exists, but cannot grant privilege to update the value.
404	Not found	No privilege to get services or no resource exists.
412	Precondition failed	The server is not available.
413	Request entity too large	The request size exceeds the maximum limit.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

## Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx"
-X PUT --data-binary @./InputParameters.json https://host:port/Automation/v1/objects
/PropertyValues
```

**Request header:**

```
PUT /Automation/v1/objects/PropertyValues HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
Content-Length: 636
```

**Response header:**

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 11:33:36 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 43c226156052594024df497bce55e3e88af078_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "data" : [ {
    "instanceID" : 3564,
    "type" : "string",
    "keyName" : "common.targetHost",
    "value" : "172.17.9.36",
    "readOnly" : false,
    "hidden" : false,
    "serviceID" : 3569
  }, {
    "instanceID" : 3565,
    "type" : "string",
    "keyName" : "common.remoteCommand",
    "value" : "date",
    "readOnly" : false,
    "hidden" : false,
    "serviceID" : 3569
  }, {
    "instanceID" : 3568,
    "type" : "string",
    "keyName" : "common.remoteCommandParameter",
    "value" : "2014/08/01",
    "readOnly" : false,
    "hidden" : false,
  }
]
```

```

    "serviceID" : 3569
  } ],
  "count" : 3
}

```

## Getting a list of property values actions

### HTTP request syntax (URI)

The following URI shows a list of actions for the PropertyValue resource. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/PropertyValues/id/actions
```

### Request

The body of the request must be empty.

### Response

The response body structure is as follows:

```

{
  "data" : [ {
    "name" : "update",
    "url" : "https://host:port/Automation/version/objects/PropertyValues/{id}",
    "method" : "PUT",
    "parameters" : []
  } ]
}

```

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	No login privilege.
404	Not found	Privilege is not valid or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.



**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxxx"
-X GET https://host:port/Automation/v1/objects/PropertyValues/3568/actions
```

Request header:

```
GET /Automation/v1/objects/PropertyValues/3568/actions HTTP/1.1
Authorization: Bearer eyJhbxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 07:37:19 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 7cb59ee52d520de21e6e93e9630fee1707dfca5_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

Response body:

```
{
  "data" : [ {
    "name" : "update",
    "href" : "https://host:port/Automation/v1/objects/PropertyValues/3568",
    "method" : "PUT",
    "parameters" : []
  } ],
  "count" : 1
}
```

## Service groups

The service group or resource group consists of multiple services that combine automation tasks and are also used to control access to product features. By assigning service groups to user groups, you can also allow access to functions in Hitachi Ops Center Automator. This module covers the management functions available for the ServiceGroup resource:

### Getting a list of service groups

#### HTTP request syntax (URI)

The following URI shows a list of service groups. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/ServiceGroups
```

#### Request

The body of the request must be empty.

Query Parameters	Filter Condition
userGroupID	equal to the value
role	(optional)

A query parameter is a type of query string.

You can express a query parameter as follows:

```
?Query_parameter=version
```

For example:

```
?userGroupID=16731
```

#### Response

The response body structure is as follows:

```
{
  "data": [ { ... } ],
  "count" : count
}
```

The following table describes the objects specified as the `data` member.

Output	Resource Name	Number	Description
List of service groups	ServiceGroup	0..n	ServiceGroup resource that matches the search condition

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	Query parameter is not valid.
401	Unauthorized	No login privilege.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbxxx" -X GET
https://host:port/Automation/v1/objects/ServiceGroups
```

Request header:

```
GET /Automation/v1/objects/ServiceGroups HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Wed, 30 Jul 2014 10:07:57 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO f84cf6e6e111f61c0922efb7fd29f748893b2b_vm011150_V0810
```

```

Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json

```

#### Response body:

```

{
  "data" : [ {
    "instanceID" : 3,
    "objectID" : "Automator_RG_DEFAULT",
    "name" : "Default Service Group",
    "description" : "default service group"
  }, {
    "instanceID" : 2,
    "objectID" : "Automator_RG_ALL",
    "name" : "All Service Groups",
    "description" : "default service groups which contains all services"
  }, {
    "instanceID" : 2241,
    "objectID" : "RG_14067127004018",
    "name" : "test_Automator_SG_1",
    "description" : "test_Automator_SG_1"
  } ],
  "count" : 3
}

```

## Creating a service group

### HTTP request syntax (URI)



**Note:** After you create a service group, you can assign one or more user groups to this resource group.

The following URI allows you to create a service group. This action allows you to create a name and a description for the service group. The minimum role required is Admin.

```
POST https://host:port/Automation/version/objects/ServiceGroups
```

### Request

The request body structure is as follows:

```

{
  "instanceID" : instance-id,
  "objectID" : "object-id",
  "name" : "name",

```

```
"description" : "description"
}
```

The following table describes the valid properties.

Resource Name	Element Name	Number
ServiceGroup	Name	1
ServiceGroup	Description	1

## Response

The response body structure is as follows:

```
{
  "instanceID" : instance-id,
  "objectID" : "object-id",
  "name" : "name",
  "description" : "description"
}
```

## Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
201	OK	Success.
400	Bad request	Query parameter is not valid, or the specified service group already exists.
401	Unauthorized	No login privilege.
403	Forbidden	No privilege to create service groups.
412	Precondition failed	The server is not available.
413	Request entity too large	The request size exceeds the maximum limit.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

**Example code****Request with cURL command:**

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx"
-X POST --data-binary @./InputParameters.json https://host:port/Automation/v1
/objects/ServiceGroups
```

**Request header:**

```
POST /Automation/v1/objects/ServiceGroups HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
Content-Length: 119
```

**Response header:**

```
HTTP/1.1 201 Created
Date: Wed, 30 Jul 2014 11:01:28 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 6448c27b01c9a6b256133e85a298288046e17_vm011150_V0810
Access-Control-Allow-Origin: *
Location: https://10.197.193.245:22016/Automation/v1/objects/ServiceGroups/2255
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "instanceID" : 2255,
  "objectID" : "RG_14067180885219",
  "name" : "test_Automator_SG_2",
  "description" : "test_Automator_SG_2"
}
```

## Selecting a service group

### HTTP request syntax (URI)

The following URI allows you to identify a service group and obtain its detailed information. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/ServiceGroups/id
```

### Request

The body of the request must be empty.

### Response

The response body structure is as follows:

```
{
  "instanceID" : instance-id,
  "objectID" : "object-id",
  "name" : "name",
  "description" : "description"
}
```

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	No login privilege.
404	Not found.	Privilege is not valid or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbxxx" -X GET
https://host:port/Automation/v1/objects/ServiceGroups/2255
```

**Request header:**

```
GET /Automation/v1/objects/ServiceGroups/2255 HTTP/1.1
Authorization: Bearer eyJhbxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

**Response header:**

```
HTTP/1.1 200 OK
Date: Wed, 30 Jul 2014 11:02:50 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO f4683663f0355ed551d6f262eacbb6914e419a_vm011150_v0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "instanceID" : 2255,
  "objectID" : "RG_14067180885219",
  "name" : "test_Automator_SG_2",
  "description" : "test_Automator_SG_2"
}
```

## Editing a service group

**HTTP request syntax (URI)**

The following URI allows you to modify the name and description of a service group. The minimum role required to perform this function is Admin.

```
PUT https://host:port/Automation/version/objects/ServiceGroups/id
```

**Request**

The request body structure is as follows:

```
{
  "instanceID" : instance-id,
  "objectID" : "object-id",
  "name" : "name",
```



```
"description" : "description"
}
```

The following table describes the valid properties.

Resource Name	Element Name	Number
ServiceGroup	Name	1
ServiceGroup	Description	1

## Response

The response body structure is as follows:

```
{
  "instanceID" : instance-id,
  "objectID" : "object-id",
  "name" : "name",
  "description" : "description",
  "state" : "state",
  "status" : "status",
  "affectedResources" : [ {...} ],
  "result" : [ {...} ],
  "resultType" : "result-type"
}
```

The following table describes the objects specified as the `affectedResources` member.

Output	Resource Name	Number	Description
Link to affected service group	String	1	The link to the updated ServiceGroup resource.

## Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Resource retrieved or deleted successfully.

Status code	HTTP name	Description
400	Bad request	Argument is not valid or the existing service group is specified.
401	Unauthorized	Authentication/authorization credentials are not valid.
403	Forbidden	No privilege to change service groups.
404	Not found	No privilege to get service groups or no resource exists.
412	Precondition failed	Server is not available.
413	Request entity too large	The request size exceeds the maximum limit.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx"
-X PUT --data-binary @./InputParameters.json https://host:port/Automation/v1/objects/
ServiceGroups/2255
```

Request header:

```
PUT /Automation/v1/objects/ServiceGroups/2255 HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
Content-Length: 131
```

Response header:

```
HTTP/1.1 200 OK
Date: Wed, 30 Jul 2014 11:07:12 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO d740eb816ee220d864326326d2316957e1ed68e_vm011150_V0810
```

```

Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json

```

**Response body:**

```

{
  "instanceID" : 2255,
  "objectID" : "RG_14067180885219",
  "name" : "test_Automator_SG_3",
  "description" : "test_Automator_SG_3"
}

```

## Deleting a service group

**HTTP request syntax (URI)**

The following URI allows you to delete a service group. The minimum role required to perform this function is Admin.

```
DELETE https://host:port/Automation/version/objects/ServiceGroups/id
```

**Request**

The body of the request must be empty.

**Response**

The response structure is as follows:

None

**Return codes**

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
204	No content	Request was successful, but if the response to return does not exist, return this code instead of 200.
401	Unauthorized	No login privilege.
403	Forbidden	No privilege to delete service groups.

Status code	HTTP name	Description
409	Conflict	A service, task history, or connection destination information assigned to the specified resource group exists,
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxxx"
-X DELETE https://host:port/Automation/v1/objects/ServiceGroups/2255
```

Request header:

```
DELETE /Automation/v1/objects/ServiceGroups/2255 HTTP/1.1
Authorization: Bearer eyJhbxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
```

Response header:

```
HTTP/1.1 204 No Content
Date: Wed, 30 Jul 2014 11:35:09 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 4fd57e42414fe1c4e73a85a7c05c7c8ba32bca8d_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Content-Length: 0
Content-Type: application/json
```

## Getting a list of service group actions

### HTTP request syntax (URI)

The following URI shows a list of actions for the ServiceGroup resource. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/ServiceGroups/id/actions
```

### Request

The body of the request must be empty.

### Response

The response body structure is as follows:

```
{
  "data" : [ {
    "name" : "update",
    "url" : "https://host:port/Automation/version/objects/ServiceGroups/{id}",
    "method" : "PUT",
    "parameters" : []
  }, {
    "name" : "delete",
    "url" : "https://host:port/Automation/version/objects/ServiceGroups/{id}",
    "method" : "DELETE",
    "parameters" : []
  }, {
    "name" : "assign",
    "url" : "https://host:port/Automation/version/objects/ServiceGroups/{id}/actions/assign/invoke",
    "method" : "POST",
    "parameters" : []
  }, {
    "name" : "unassign",
    "url" : "https://host:port/Automation/version/objects/ServiceGroups/{id}/actions/unassign/invoke",
    "method" : "POST",
    "parameters" : []
  } ],
  "count" : 4
}
```

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	No login privilege.
404	Not found	Privilege is not valid or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbxxx" -X GET
https://host:port/Automation/v1/objects/ServiceGroups/2255/actions
```

Request header:

```
GET /Automation/v1/objects/ServiceGroups/2255/actions HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Wed, 30 Jul 2014 11:09:09 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 756a954147ad3894c86c69c6137dd48c758ca2f_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

Response body:

```
{
  "data" : [ {
    "name" : "update",
    "href" : "https://host:port/Automation/v1/objects/ServiceGroups/2255",
```

```

    "method" : "PUT",
    "parameters" : []
  }, {
    "name" : "delete",
    "href" : "https://host:port/Automation/v1/objects/ServiceGroups/2255",
    "method" : "DELETE",
    "parameters" : []
  }, {
    "name" : "assign",
    "href" : "https://host:port/Automation/v1/objects/ServiceGroups/2255/actions/
assign/invoke",
    "method" : "POST",
    "parameters" : []
  }, {
    "name" : "unassign",
    "href" : "https://host:port/Automation/v1/objects/ServiceGroups/2255/actions/
unassign/invoke",
    "method" : "POST",
    "parameters" : []
  } ],
  "count" : 4
}

```

## Preparing to assign a service group to a user group with a role

### HTTP request syntax (URI)

The following URI is the initial step to assign a service group to a user group with a role. For example, you can assign a group of services (such as provisioning the storage for an Oracle ASM server or an Exchange 2010 server) to an entire user group and then assign a role level (such as Modify or Submit) to that group. The minimum roles required to perform this function are Admin and UserMgmt.

```
GET https://host:port/Automation/version/objects/ServiceGroups/id/actions/assign
```

### Request

The body of the request must be empty.

### Response

The response body structure is as follows:

```

{
  "name" : "assign",
  "url" : " https://host:port/Automation/version/objects/ServiceGroups/id/actions/
assign/invoke",
  "method" : "POST",
  "parameters" : [ {...} ]
}

```

The following table describes the objects specified as the "parameters" member.

Output	Resource Name	Number	Description
User group	userGroup	1	User group information



**Note:** You must assign a service group to a user group to complete this action.

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	No login privilege.
404	Not found	No privilege to assign service groups or no resource exists
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbxxx" -X GET https://host:port/Automation/v1/objects/ServiceGroups/2255/actions/assign
```

Request header:

```
GET /Automation/v1/objects/ServiceGroups/2255/actions/assign HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Wed, 30 Jul 2014 11:11:08 GMT
```



```

Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 789ea774ccaa5e78fd063464ce1b6123277a_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json

```

**Response body:**

```

{
  "name" : "assign",
  "href" : "https://host:port/Automation/v1/objects/ServiceGroups/2255/actions/assign/
invoke",
  "method" : "POST",
  "parameters" : [ {
    "name" : "",
    "distinguishedName" : "",
    "role" : {
      "name" : ""
    }
  } ]
}

```

## Assigning a service group to a user group

**HTTP request syntax (URI)**

The following URI allows you to confirm the assignment of a service group to a user group. The minimum roles required to perform this function is Admin and UserMgmt.

```

POST https://host:port/Automation/version/objects/ServiceGroups/id/actions/assign/
invoke

```

**Request**

The request body structure is as follows:

```

{
  "name" : "assign",
  "url" : " https://host:port/Automation/version/objects/ServiceGroups/{id}/actions/
assign/invoke",
  "method" : "POST",
  "parameters" : [ {...} ]
}

```

The following table describes the objects specified as the `parameters` member.

Output	Resource Name	Number	Description
parameters	userGroup	1	User group information

The following table describes the valid properties for an internal group.

Resource Name	Element Name	Number	Description
userGroup	name	1	User group name
userGroup	role name	1	Role information (Admin/Modify/Submit/Develop)

The following table describes the valid properties for an external authenticator integration.

Resource Name	Element Name	Number	Description
userGroup	distinguishedName	1	distinguishedName
userGroup	role name	1	Role information (Admin/Modify/Submit/Develop)



**Note:** Priority is given to an external authenticator integration when both are specified.

## Response

The response body structure is as follows:

```
{
  "instanceID" : instance-id,
  "created" : "created-date-and-time",
  "updated" : "updated-date-and-time",
  "completed" : "completed-date-and-time",
  "state" : "state",
  "status" : "status",
  "affectedResources" : [ {...} ],
  "result" : [ {...} ],
  "resultType" : "result-type"
}
```

The following table describes the objects specified as the `affectedResources` member.

Output	Resource Name	Number	Description
link to ServiceGroup	String	1	The link to the ServiceGroup resource

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success
400	Bad request	Argument is not valid.
401	Unauthorized	No login privilege.
404	Not found	No privilege to assign service groups or no resource exists.
412	Precondition failed	The server is not available.
413	Request entity too large	The request size exceeds the maximum limit.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbGxxxx"
-X POST --data-binary @./InputParameters.json https://host:port/Automation/v1/objects
/ServiceGroups/2255/actions/assign/invoke
```

Request header:

```
POST /Automation/v1/objects/ServiceGroups/2255/actions/assign/invoke HTTP/1.1
Authorization: Bearer eyJhbGxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
Content-Length: 245
```

**Response header:**

```

HTTP/1.1 200 OK
Date: Wed, 30 Jul 2014 11:16:06 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO f4d3d3f76ae3bfb5f27344b8c8faa25a0bac6e7_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json

```

**Response body:**

```

{
  "instanceID" : "801f4a19-e808-44bf-aa06-8ebc3797c242",
  "created" : "2014-07-30T20:16:06.645+09:00",
  "updated" : "2014-07-30T20:16:06.645+09:00",
  "completed" : "2014-07-30T20:16:06.645+09:00",
  "state" : "success",
  "affectedResource" : [ "https://host:port/Automation/v1/objects/ServiceGroups/2255" ],
  "result" : []
}

```

## Preparing to unassign a service group

**HTTP request syntax (URI)**

The following URI is the initial step to unassign a user group. The minimum roles required to perform this function is Admin and UserMgmt.

```
GET https://host:port/Automation/version/objects/ServiceGroups/id/actions/unassign
```

**Request**

The body of the request must be empty.

**Response**

The response body structure is as follows:

```

{
  "name" : "unassign",
  "url" : " https://host:port/Automation/version/objects/ServiceGroups/id/actions/unassign/invoke",
  "method" : "POST",

```

```
"parameters" : [ {...} ]
}
```

The following table describes the objects specified as the `parameters` member.

Output	Resource Name	Number	Description
userGroup	userGroup	1	User group information



**Note:** To complete this action, you must unassign the service group.

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	No login privilege.
404	Not found	No privilege to unassign service groups or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbGxxxx" -X GET
https://host:port/Automation/v1/objects/ServiceGroups/2255/actions/unassign
```

Request header:

```
GET /Automation/v1/objects/ServiceGroups/2255/actions/unassign HTTP/1.1
Authorization: Bearer eyJhbGxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

**Response header:**

```

HTTP/1.1 200 OK
Date: Wed, 30 Jul 2014 11:31:43 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 68868ce6d3177466f38d46ec365ac6edf1985d_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json

```

**Response body:**

```

{
  "name" : "unassign",
  "href" : "https://host:port/Automation/v1/objects/ServiceGroups/2255/actions/
unassign/invoke",
  "method" : "POST",
  "parameters" : [ {
    "name" : "",
    "distinguishedName" : ""
  } ]
}

```

## Unassigning a service group

**HTTP request syntax (URI)**

The following URI allows you to confirm the unassignment of a service group to a user group. The minimum roles required to perform this function is Admin and UserMgmt.

```

POST https://host:port/Automation/version/objects/ServiceGroups/id/actions/unassign/
invoke

```

**Request**

The request body structure is as follows:

```

{
  "name" : "unassign",
  "url" : " https://host:port/Automation/version/objects/ServiceGroups/{id}/actions/
unassign/invoke",
  "method" : "POST",
  "parameters" : [ {...} ]
}

```

The following table describes the objects specified as the `parameters` member.

Output	Resource Name	Number	Description
userGroup	userGroup	1	User group information

The following table describes the valid properties for an internal group.

Resource Name	Element Name	Number	Description
userGroup	name	1	User group name

The following table describes the valid properties for an external authenticator integration.

Resource Name	Element Name	Number	Description
userGroup	distinguishedName	1	distinguishedName



**Note:** Priority is given to an external authenticator integration when both are specified.

## Response

The response body structure is as follows:

```
{
  "instanceID" : instance-id,
  "created" : "created-date-and-time",
  "updated" : "updated-date-and-time",
  "completed" : "completed-date-and-time",
  "state" : "state",
  "affectedResources" : [ { ... } ],
  "result" : [ { ... } ],
  "resultType" : "result-type"
}
```

The following table describes the objects specified as the `affectedResources` member.

Output	Resource Name	Number	Description
Link to ServiceGroup	String	1	The link to the updated Service Group resource.

**Return codes**

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success
400	Bad request	Argument is not valid.
401	Unauthorized	No login privilege.
404	Not found	No privilege to unassign service groups or no resource exists.
412	Precondition failed	The server is not available.
413	Request entity too large	The request size exceeds the maximum limit.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx"
-X POST --data-binary @./InputParameters.json https://host:port/Automation/v1/objects
/ServiceGroups/2255/actions/unassign/invoke
```

Request header:

```
POST /Automation/v1/objects/ServiceGroups/2255/actions/unassign/invoke HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
Content-Length: 225
```

Response header:

```
HTTP/1.1 200 OK
Date: Wed, 30 Jul 2014 11:33:40 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 12a2921f321c8926facf3be6cf7c6e92d6ddce0_vm011150_V0810
Access-Control-Allow-Origin: *
```



```

Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json

```

#### Response body:

```

{
  "instanceID" : "b59d9976-a571-4cb5-8c52-2f84c59a06c1",
  "created" : "2014-07-30T20:33:41.305+09:00",
  "updated" : "2014-07-30T20:33:41.305+09:00",
  "completed" : "2014-07-30T20:33:41.305+09:00",
  "state" : "success",
  "affectedResource" : [ "https://1host:port/Automation/v1/objects/ServiceGroups/2255" ],
  "result" : []
}

```

## Service template

Service templates are preconfigured templates that are customized to your specific environment and processes creating services that automate complex tasks such as resource provisioning.

### Getting a list of service templates

#### HTTP request syntax (URI)

The following URI allows you to obtain a list of service templates. You can obtain the `instanceID` of a service template to perform a supported service template sequence (such as "deleting a service template"). This request needs a minimum role of Modify.

```
GET https://host:port/Automation/version/objects/ServiceTemplates
```

#### Request

The body of the request must be empty.

Query Parameters	Filter Condition
tags	include all the values or not (can be specified multiple times by comma delimited string)
usingServiceTemplateID	equal to the value

Query Parameters	Filter Condition
vendorID	equal to the value (Case-insensitive)
keyName	equal to the value (Case-insensitive)
version	equal to the value (Case-insensitive)

A query parameter is a type of query string. You can express a query parameter as follows:

```
?Query_parameter=value
```

For example:

```
?usingServiceTemplateID=16731
```

### Response

The response body structure is as follows:

```
{
  "data": [ { ... } ],
  "count" : count}
```

The following table describes the objects specified as the `data` member.

Output	Resource Name	Number	Description
List of service templates	ServiceTemplate	0..n	ServiceTemplate resource that matches the search condition

### Return codes

The following table lists the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	Query parameter is not valid.
401	Unauthorized	No login privilege.
403	Forbidden	No privilege to get service templates.

Status code	HTTP name	Description
412	Precondition failed	The server is not running.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbGxxxx" -X GET
https://host:port/Automation/v1/objects/ServiceTemplates
```

Request header:

```
GET /Automation/v1/objects/ServiceTemplates HTTP/1.1
Authorization: Bearer eyJhbGxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2015 05:55:15 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 34dfb124a5fcef089f853d1391341dfbee4cb_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

Response body:

```
{
  "data" : [ {
    "instanceID" : 560,
    "keyName" : "remoteCommandExe",
    "displayName" : "Execute Remote Command",
    "iconURL" : "https://host:port/Automation/icon/services/
com.hitachi.software.dna.cts/remoteCommandExe/01.20.00",
    "vendorID" : "com.hitachi.software.dna.cts",
    "version" : "01.20.00",
```

```

    "vendorName" : "Hitachi Vantara LLC",
    "tags" : "Execute Script,Linux,Windows",
    "createTime" : "2015-07-29T15:27:02.000+09:00",
    "modifyTime" : "2015-07-29T15:27:02.000+09:00",
    "description" : "Executes a command on the remote execution target server.",
    "releaseState" : "release",
    "latest" : true,
    "supportedScheduleType" : "immediate,schedule,recurrence",
    "supportedActionType" : "",
    "needVUP" : false,
    "componentOutdated" : false,
    "usedServices" : 0,
    "usedTemplates" : 0
  }, {
    "instanceID" : 1116,
    "keyName" : "SP_CM",
    "displayName" : "Allocate Volumes with Smart Provisioning",
    "iconURL" : "https://host:port/Automation/services/custom/00000000001116/Allocate_Volumes_with_Smart_Provisioning_overview.png",
    "supportedScheduleType" : "immediate,schedule", "supportedActionType" : "",
    "needVUP" : false,
    "componentOutdated" : false,
    "usedServices" : 0,
    "usedTemplates" : 0
  } ],
  "count" : 2
}

```

## Selecting a service template

### HTTP request syntax (URI)

The following URI allows you to identify a service template and obtain its detailed information so that you can edit an object service template. This request needs a minimum role of Modify.

```
GET https://host:port/Automation/version/objects/ServiceTemplates/id
```

### Request

None

### Response

The response body structure is as follows:

```

{
  "instanceID" : instance-id,
  "keyName" : "key-name",
  "displayName" : "display-name",
  "iconURL" : "icon-URL",
  "vendorID" : "vendor-ID",

```

```

"version" : " version ",
"vendorName" : "vendor-name",
"tags" : "tag",
"serviceSpecificationVersion" : "service-specification-version",
"createTime" : "created-date-and-time",
"modifyTime" : "updated-date-and-time",
"description" : "description",
"releaseState" : "release-state",
"latest" : {true|false},
"imageUrl" : "imageUrl",
"supportedScheduleType" : "supported-schedule-type",
"supportedActionType" : "supported-action-type",
"needVUP" : {true|false},
"componentOutdated" : {true|false},
"usedServices" : used-services,
"usedTemplates" : used-templates,
"disableFeatures" : "disable-features"
}

```

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	No login privilege.
403	Forbidden	No privilege to get service templates.
404	Not found.	Privilege is not valid or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```

curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbGxxxx" -X GET
https://host:port/Automation/v1/objects/ServiceTemplates/1116

```

**Request header:**

```
GET /Automation/v1/objects/Services/5185 HTTP/1.1
Authorization: Bearer eyJhbxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

**Response header:**

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2015 05:57:18 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 6dee6b613fb3ea9cec3732a1e7e6ed5513810_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "instanceID" : 1116,
  "keyName" : "SP_CM",
  "displayName" : "Allocate Volumes with Smart Provisioning",
  "iconURL" : "https://host:port/Automation/icon/services/
com.hitachi.software.dna.cts/SP_CM/01.20.00",
  "vendorID" : "com.hitachi.software.dna.cts",
  "version" : "01.20.00",
  "vendorName" : "Hitachi Vantara LLC",
  "tags" : "Add New Storage,ConfigurationManager",
  "serviceSpecificationVersion" : "2.1",
  "createTime" : "2015-07-29T16:48:25.000+09:00",
  "modifyTime" : "2015-07-29T16:48:25.000+09:00",
  "description" : "Intelligent allocation service that uses sets of volumes from the
associated infrastructure group through Configuration Manager to be consumed by
server(s) running a generic application.",
  "releaseState" : "release",
  "latest" : true,
  "imageURL" : "https://host:port/Automation/services/custom/000000000001116/
Allocate_Volumes_with_Smart_Provisioning_overview.png",
  "supportedScheduleType" : "immediate,schedule", "supportedActionType" : "",
  "needVUP" : false,
  "componentOutdated" : false,
  "usedServices" : 0,
  "usedTemplates" : 0
}
```

## Deleting a service template

### HTTP request syntax (URI)

The following URI allows you to delete a service template. This request needs a minimum role of Develop.

```
DELETE https://host:port/Automation/version/objects/ServiceTemplate/id
```

### Request

The body of the request must be empty.

### Response

None

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
204	No content	Request was successful, but if the response to return does not exist, return this code instead of 200.
401	Unauthorized	No login privilege.
403	Forbidden	This user is not allowed to perform this request. If there is no update privilege, delete the related resource.
409	Conflict	A service is generated from the relevant service template or a service template using the relevant service template.
412	Precondition failed	The server is not running.
500	Server-side error	Processing error returned by the server.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbGxxxx" -X DELETE https://host:port/Automation/v1/objects/ServiceTemplate/6021
```

**Request header:**

```
DELETE /Automation/v1/objects/ServiceTemplate/6021 HTTP/1.1
Authorization: Bearer eyJhbxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

**Response header:**

```
HTTP/1.1 204 OK
Date: Thu, 31 Jul 2015 06:08:32 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 1ec763c99e71383925094685e6c28492ea4b42a_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
```

**Response body:**

None

## Getting a list of service template actions

**HTTP request syntax (URI)**

The following URI shows a list of actions for the service templates resource. This request needs a minimum role of Modify.

```
GET https://host:port/Automation/version/objects/ServiceTemplates/id/actions
```

**Request**

The body of the request must be empty.

**Response**

The response body structure is as follows:

```
{
  "data" : [ {
    "name" : "delete",
    "href" : "https://host:port/Automation/version/objects/ServiceTemplates/{id}",
    "method" : "DELETE",
    "parameters" : []
  }, {
    "name" : "export",
    "href" : "https://host:port/Automation/version/objects/ServiceTemplates/{id}/actions/export/invoke",
```



```

"method" : "POST",
  "parameters" : []
}, {
  "name" : "detailhelp",
  "href" : "https://host:port/Automation/version/objects/ServiceTemplates/{id}/
actions/detailhelp",
  "method" : "GET",
  "parameters" : []
}, {
  "name" : "bind",
  "href" : "https://host:port/Automation/version/objects/ServiceTemplates/{id}/
actions/bind/invoke",
  "method" : "POST",
  "parameters" : []
} ],
"count" : 4
}

```

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	No login privilege.
404	Not found	Privilege is not valid or no resource exists.
412	Precondition failed	The server is not running.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```

curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbGxxxx" -X GET
https://host:port/Automation/v1/objects/Services/5185/actions

```

Request header:

```

GET /Automation/v1/objects/Services/5185/actions HTTP/1.1
Authorization: Bearer eyJhbGxxxx
User-Agent: curl/7.36.0

```

```
Host: host:port
Accept: application/json
```

**Response header:**

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2015 06:14:25 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO a664c6399a53caae6075ac26a0ac9014d42e2081_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "data" : [ {
    "name" : "delete",
    "href" : "https://host:port/Automation/v1/objects/ServiceTemplates/1116",
    "method" : "DELETE",
    "parameters" : []
  }, {
    "name" : "export",
    "href" : "https://host:port/Automation/v1/objects/ServiceTemplates/1116/actions/export/invoke",
    "method" : "POST",
    "parameters" : []
  }, {
    "name" : "detailhelp",
    "href" : "https://host:port/Automation/v1/objects/ServiceTemplates/1116/actions/detailhelp",
    "method" : "GET",
    "parameters" : []
  }, {
    "name" : "bind",
    "href" : "https://host:port/Automation/v1/objects/ServiceTemplates/1116/actions/bind/invoke",
    "method" : "POST",
    "parameters" : []
  } ],
  "count" : 4
}
```

## Preparing to import a service template

### HTTP request syntax (URI)

The following URI is the initial step to preparing to import (and copy) the HTML code of a service template from another Ops Center Automator server. This request needs a minimum role of Develop.

```
GET https://host:port/Automation/version/services/ServiceTemplates/actions/import
```

### Request

The body of the request must be empty.

### Response

The HTML address that contains the information required for importing the service template

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	No login privilege.
403	Forbidden	No import privilege.
406	Not acceptable	Specification of accept header is not valid.
412	Precondition failed	The server is not running.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example

Request with cURL command:

```
curl -v -H "Accept: text/html" -H "Authorization: Bearer eyJhbGxxxx" -X GET https://host:port/Automation/v1/services/ServiceTemplates/actions/import
```

Request header:

```
GET /Automation/v1/services/ServiceTemplates/actions/import HTTP/1.1
Authorization: Bearer eyJhbGxxxx
User-Agent: curl/7.36.0
```

```
Host: host:port
Accept: text/html
```

**Response header:**

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2015 06:23:15 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 57c04c224090c645f8abc0721e96c96594692ced_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: text/html
```

**Response body:**

```
<html>
<body>
<form method="POST" action="https://host:port/Automation/v1/services/ServiceTemplates/
actions/import/invoke" enctype="multipart/form-data">
  <input name="file" type="file"></input>
  <input type="submit" value="Submit">
</form>
<body>
</html>
```

## Importing a service template

**HTTP request syntax (URI)**

The following URI allows you to import a service template from another server. This allows you to run that service template through your own server. This request needs a minimum role of Develop.

```
POST https://host:port/Automation/version/services/ServiceTemplates/actions/import/
invoke
```

**Request**

This request returns the binary data of the service template file.

**Response**

The response body structure is as follows

```
{
  "instanceID" : "instance-id",
```

```

"created" : "created-date-and-time",
"updated" : "updated-date-and-time",
"completed" : "completed-date-and-time",
"state" : "state",
"affectedResources" : [ {...} ],
"result" : [ {...} ],
"resultType" : "result-type"
}
    
```

The following table describes the objects returned as the `affectedResources` member.

Output	Resource Name	Number	Description
Link to imported ServiceTemplate	String	1	The link to the created Service Template resource.

The following table describes the objects returned as the `result` member.

Output	Resource Name	Number	Description
Information	Information	1	Run message.

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	Either a file other than .st or .zip file is specified or the specified .st or .zip file is broken or not valid.
403	Forbidden	No import privilege.
404	Not found	No privilege to get services or no service exists.
412	Precondition failed	The server is not available or the number of tasks has reached the upper bound.
413	Request entity too large	The request size exceeds the maximum limit.

Status code	HTTP name	Description
415	Unsupported media type	Specification of Content-Type header not valid.
500	Server-side error	Server-side processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbGxxxx" -H "Content-Type: multipart/form-data" -X POST -F "file=@SP_GenericApplication_01.20.00.st" https://host:port/Automation/v1/services/ServiceTemplates/actions/import/invoke
```

Request header:

```
POST /Automation/v1/services/ServiceTemplates/actions/import/invoke
HTTP/1.1
Authorization: Bearer eyJhbGxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
Content-Length: 1224
Expect: 100-continue
Content-Type: multipart/form-data; boundary=-----5564f06622f7727e
```

Response header:

```
HTTP/1.1 100 Continue
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2015 06:32:06 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO bcdf3f7285cb238fb7d0dcfc6e74ff67cf95388_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

Response body:

```
{
  "instanceID" : "f4c5065a-ff42-45df-bca9-e2d79b4b5bb7",
  "created" : "2015-07-29T16:48:26.528+09:00",
  "updated" : "2015-07-29T16:48:26.528+09:00",
  "completed" : "2015-07-29T16:48:26.528+09:00",
  "state" : "success",
  "affectedResource" : [ "https://host:port/Automation/v1/objects/ServiceTemplates/1116" ],
  "result" : [ {
    "message" : "The service template was imported successfully (service template file name: SP_GenericApplication_01.20.00.st).",
    "messageID" : "KNAE03111-I"
  } ]
}
```

## Preparing to export a service template

### HTTP request syntax (URI)

The following URI is the initial step to preparing to export (and send) a service template to another Ops Center Automator server. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/services/ServiceTemplates/id/actions/export
```

### Request

The body of the request must be empty.

### Response

The HTML address that contains the information required for exporting the service template

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	No login privilege.
404	Not found	Either the resource, the process, or the Read privilege to the resource is missing.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.

Status code	HTTP name	Description
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbxxxx" -X GET
https://host:port/Automation/v1/objects/ServiceTemplates/1116/actions/export
```

Request header:

```
GET /Automation/v1/objects/ServiceTemplates/1116/actions/export HTTP/1.1
Authorization: Bearer eyJhbxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2015 06:23:15 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 57c04c224090c645f8abc0721e96c96594692ced_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

Response body:

```
{
  "name" : "export",
  "href" : "https://host:port/Automation/v1/objects/ServiceTemplates/1116/actions/
export/invoke",
  "method" : "POST",
  "parameters" : []
}
```



## Exporting a service template

### HTTP request syntax (URI)

The following URI allows you to export a service template to another server. This allows you to run that service template through another server. This request needs a minimum role of Develop.

```
POST https://host:port/Automation/version/objects/Services/id/actions/export/invoke
```

### Request

None

### Response

The response is the ServiceTemplate file.

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	No login privilege.
404	Not found	Privilege is not valid, no resource exists, or no export privilege.
406	Not acceptable	Specification of accept header is not valid.
412	Precondition failed	The server is not running.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/octet-stream" -H "Authorization: Bearer eyJhbGxxxx" -H "Content-Type: application/json" -X POST https://host:port/Automation/v1/objects/ServiceTemplates/1116/actions/export/invoke > exportdata01.st
```

Request header:

```
POST /Automation/v1/objects/ServiceTemplates/1116/actions/export/invoke HTTP/1.1
Authorization: Bearer eyJhbGxxxx
```

```
User-Agent: curl/7.36.0
Host: host:port
Accept: application/octet-stream
Content-Type: application/json
```

**Response header:**

```
HTTP/1.1 100 Continue
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2015 06:32:06 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO bcdf3f7285cb238fb7d0dcfc6e74ff67cf95388_vm011150_V0810
Access-Control-Allow-Origin: *
Content-disposition: attachment;
filename="com.hitachi.software.dna.cts_SP_GenericApplication_01.20.00.st"
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/octet-stream
```

**Response body:**

```
{ [data not shown]
100 2056k  0 2056k  0  0 6591k  0 --:--:-- --:--:-- --:--:-- 6948k
```

## Getting service template help

**HTTP request syntax (URI)**

The following URI returns the web address to obtain detailed help of a specified service template. You can then display the help information of the target service template through a browser. This request needs a minimum role of Modify.

```
GET https://host:port/Automation/version/objects/ServiceTemplates/id/actions/detailhelp
```

**Request**

The body of the request must be empty.

**Response**

The response body structure is as follows:

```
{
  "name" : "export",
  "href" : "Link-to-the-detail-help",
  "method" : "POST",
```

```
"parameters" : []
}
```

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	No login privilege.
404	Not found	No privilege to get service templates or no service template exists.
412	Precondition failed	The server is not running.
500	Server-side error	Processing error returned by the server.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbxxx" -H -X GET
https://host:port/Automation/v1/objects/ServiceTemplates/1116/actions/detailhelp
```

Request header:

```
GET /Automation/v1/objects/ServiceTemplates/1116/actions/detailhelp HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response body:

```
{
  "name" : "detailhelp",
  "href" : "https://host:port/Automation/services/custom/00000000001116/
r_all_vol_details.html",
  "method" : "GET",
  "parameters" : []
}
```

## Preparing to bind and run a service template

### HTTP request syntax (URI)

The following URI is the initial step to get the template of required arguments for bind action. Acquire the template of the arguments required to run the process (Bind) of the target service template. This request needs a minimum role of Modify.

```
GET https://host:port/Automation/version/objects/ServiceTemplates/id/actions/bind
```

### Request

The body of the request must be empty.

### Response

The response body structure is as follows.

```
{
  "name" : "bind",
  "href" : "http://host:port/Automation/version/objects/ServiceTemplates/{id}/
actions/bind/invoke",
  "method" : "POST",
  "parameters" : [ {...} ]
}
```

The following table describes the objects specified as the `parameters` member.

Output	Resource Name	Number	Description
Service	Service	1	The service added from the service template
List of PropertyValues	PropertyValue	0..n	The input property of service

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	No login privilege.

Status code	HTTP name	Description
404	Not found	No privilege to get services or no service template exists.
412	Precondition failed	The server is not running.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbxxxx" -H -X GET
host:port/Automation/v1/objects/ServiceTemplates/560/actions/bind
```

Request header:

```
GET /Automation/v1/objects/ServiceTemplates/560/actions/bind HTTP/1.1
Authorization: Bearer eyJhbxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 30 Jul 2015 02:08:29 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO
77efd47709df8b7f65468cb4778e804db1e6c_V1o8Y30JdDBUB31jJSVPaRtjBSA=_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

Response body:

```
{
  "name" : "bind",
  "href" : "http://<host>:<port>/Automation/v1/objects/ServiceTemplates/560/actions/
bind/invoke",
```

```

"method" : "POST",
"parameters" : [ {
  "name" : "Execute Remote Command",
  "description" : "Executes a command on the remote execution target server.",
  "tags" : "Execute Script, Linux, Windows",
  "serviceTemplateName" : "remoteCommandExe",
  "serviceState" : "test",
  "serviceGroupName" : "Default Service Group",
  "supportedScheduleType" : "immediate, schedule, recurrence",
"supportedActionType" : "",
  "serviceTemplateID" : 560
}, {
  "type" : "string",
  "keyName" : "common.targetHost",
  "value" : "",
  "readOnly" : false,
  "hidden" : false
}, {
  "type" : "string",
  "keyName" : "common.remoteCommand",
  "value" : "",
  "readOnly" : false,
  "hidden" : false
}, {
  "type" : "string",
  "keyName" : "common.remoteCommandParameter",
  "value" : "",
  "readOnly" : false,
  "hidden" : false
} ]

```

## Binding and running a service template

### HTTP request syntax (URI)

The following URI allows you to add a service along with the binded/selected property values and then run the service template. This request needs a minimum role of Modify.

```

POST https://host:port/Automation/version/objects/ServiceTemplates/id/actions/bind/
invoke

```

### Request

```

{
  "name" : "bind",
  "href" : "https://host:port/Automation/version/objects/ServiceTemplates/id/actions/
bind/invoke",
  "method" : "POST",

```

```
"parameters" : [ {...} ]
}
```

The following table describes the objects specified as the `parameters` member.

Input	Resource Name	Number	Description
Service	Service	1	The service to add.
List of property values	Property value	0..n	The input property of a service.

The following table describes the valid properties.

Output	Resource Name	Number
Service	name	1
Service	description	1
Service	tags	1
Service	supportedScheduleType	1
Service	serviceState	1
Service	serviceGroupName	1
PropertyValues	value	0..n

## Response

The response body structure is as follows.

```
{
  "instanceID" : "instance-id",
  "created" : "created-date-and-time",
  "updated" : "updated-date-and-time",
  "completed" : "completed-date-and-time",
  "state" : "state",
  "affectedResources" : [ {...} ],
  "result" : [ {...} ],
  "resultType" : "result-type"
}
```

The following table describes the objects specified as the `parameters` member.

Output	Resource Name	Number	Description
Link to created service.	String	1	The link to the created Service resource

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	One of the following: <ul style="list-style-type: none"> <li>▪ Argument is not valid.</li> <li>▪ The privileges assigned to the service group are not valid.</li> <li>▪ The existing service name is already specified.</li> <li>▪ The number of services and number of tags has reached the maximum limit.</li> </ul>
401	Unauthorized	No login privilege.
403	Forbidden	No privilege to get service templates.
404	Not found	No privilege add services.
412	Precondition failed	The server is not running.
413	Request entity too large	The request size exceeds the maximum limit.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx" -X POST --data-binary @./InputParameters.json
https://host:port/Automation/v1/objects/ServiceTemplates/560/actions/bind/invoke
```



**Request header:**

```

POST /Automation/v1/objects/ServiceTemplates/560/actions/bind/invoke
HTTP/1.1
Authorization: Bearer eyJhbxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
Content-Length: 1001

```

**Response header:**

```

HTTP/1.1 200 OK
Date: Thu, 30 Jul 2015 02:08:29 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO
77efd47709df8b7f65468cb4778e804db1e6c_V1o8Y30JdDBUB31jJSVPartjBSA=_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json

```

**Response body:**

```

{
  "instanceID" : "55e8c5b7-b0ab-4016-ba62-f334b67c20c4",
  "created" : "2015-07-30T11:30:39.042+09:00",
  "updated" : "2015-07-30T11:30:39.042+09:00",
  "completed" : "2015-07-30T11:30:39.042+09:00",
  "state" : "success",
  "affectedResource" : [ "https://host:port/Automation/v1/objects/Services/2004" ],
  "result" : []
}

```

## Property information

This module covers the management functions available for the PropertyInformation resource:

## Getting a list of property information

### HTTP request syntax (URI)

The following URI shows a list of property information for a service, task, service template, or schedule. Property information includes IDs and can also be shared across multiple services or tasks. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/PropertyInformations
```

### Request

The body of the request must be empty.

Query Parameters	Filter Condition
serviceID	equal to the value
taskID	equal to the value
scheduleID	equal to the value
shared	Function of whether a parameter name is valid or not. Specify by: <code>?[parameter name]</code> or <code>?[parameter name]=</code>



**Note:** If a query parameter is not specified, an error occurs.

A query parameter is a type of query string.

You can express a query parameter as follows:

```
?Query_parameter=version
```

For example:

```
?serviceID=16731
```

### Response

The response body structure is as follows:

```
{
  "data": [ {...} ],
  "count" : }
```

The following table describes the objects specified as the `data` member.

Output	Resource Name	Number	Description
List of property information	PropertyInformation	0..n	PropertyInformation resource that matches the search condition

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success. A request has processed appropriately.
401	Unauthorized	No login privilege.
412	Precondition failed	The server is not running.
500	Server-side error	Processing error returned by the server.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbGxxxx" -X
GET https://host:port/Automation/v1/objects/PropertyInformations?serviceID=2004
```

Request header:

```
GET /Automation/v1/objects/PropertyInformations?serviceID=2004 HTTP/1.1
Authorization: Bearer eyJhbGxxxx
User-Agent: curl/7.28.1
Host: host:port
Accept: application/json
Content-Type: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Wed, 12 Feb 2015 12:53:03 GMT
Server: Cosminexus HTTP Server
```

```

WWW-Authenticate: HSSO 4aac2080983c3b3c3061b6acff946aa3726537db_V0300
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json

```

**Response body:**

```

{
  "data" : [ {
    "instanceID" : 2010,
    "keyName" : "common.targetHost",
    "displayName" : "Host name of execution target server",
    "defaultValue" : "",
    "value" : "",
    "type" : "string",
    "visibility" : "exec",
    "scope" : "local",
    "description" : "Specifies the host name or IP address of the execution target
server. IPv6 addresses are not supported.",
    "mode" : "in",
    "required" : true,
    "maxLength" : 255,
    "minLength" : 1,
    "pattern" : "^[0-9a-zA-Z\\\\.\\-]*$",
    "propertyGroupName" : "reserved.defaultGroup",
    "validationScript" : "",
    "readOnly" : false,
    "hidden" : false,
    "reference" : false,
    "serviceTemplateID" : 560,
    "serviceID" : 2004
  }, {
    "instanceID" : 2013,
    "keyName" : "common.remoteCommand",
    "displayName" : "Command",
    "defaultValue" : "",
    "value" : "",
    "type" : "string",
    "visibility" : "exec",
    "scope" : "local",
    "description" : "Specify the full path of the command to be executed on the
execution target server. If the path contains a space, enclose the entire path in
double quotation marks.",
    "mode" : "in",
    "required" : true,
    "maxLength" : 256,
    "minLength" : 1,
    "propertyGroupName" : "reserved.defaultGroup",
    "validationScript" : "",
    "readOnly" : false,

```

```

    "hidden" : false,
    "reference" : false,
    "serviceTemplateID" : 560,
    "serviceID" : 2004
  }, {
    "instanceID" : 2017,
    "keyName" : "common.remoteCommandParameter",
    "displayName" : "Command parameters",
    "defaultValue" : "",
    "value" : "",
    "type" : "string",
    "visibility" : "exec",
    "scope" : "local",
    "description" : "Specify the parameters for the command to be executed on the
execution target server. If a parameter contains a space, enclose the entire
parameter in double quotation marks.",
    "mode" : "in",
    "required" : false,
    "maxLength" : 1024,
    "minLength" : 1,
    "propertyGroupName" : "reserved.defaultGroup",
    "validationScript" : "",
    "readOnly" : false,
    "hidden" : false,
    "reference" : false,
    "serviceTemplateID" : 560,
    "serviceID" : 2004
  }, {
    "instanceID" : 2016,
    "keyName" : "common.stdoutProperty",
    "displayName" : "Standard output string",
    "defaultValue" : "",
    "value" : "",
    "type" : "string",
    "visibility" : "exec",
    "scope" : "local",
    "description" : "This property contains the character string output to standard
output by the specified command. ",
    "mode" : "out",
    "required" : false,
    "propertyGroupName" : "reserved.defaultGroup",
    "validationScript" : "",
    "readOnly" : false,
    "hidden" : false,
    "reference" : false,
    "serviceTemplateID" : 560,
    "serviceID" : 2004
  } ],
  "count" : 4
}

```

## Property groups

This module covers the management functions available for the PropertyGroup resource.

### Getting a list of property groups

#### HTTP request syntax (URI)

The following URI shows a list of property groups for a service or task. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/PropertyGroups
```

#### Request

The body of the request must be empty.

A query

Query Parameters	Filter Condition
serviceTemplateID	equal to the value
serviceID	equal to the value
scheduleID	equal to the value
taskID	equal to the value

parameter is a type of query string.

You can express a query parameter as follows:

```
?Query_parameter=version
```

For example:

```
?serviceID=16731
```



**Note:** To get property groups for a service template, service, a schedule, or a task (for example), you must specify the corresponding query parameters. Otherwise, an error is returned. In addition, you can only specify one query parameter at a time. You cannot specify multiple query parameters.

**Response**

The response body structure is as follows:

```
{
  "data": [ { ... } ],
  "count" : count}
```

The following table describes the objects specified as the `data` member.

Output	Resource Name	Number	Description
List of property groups	PropertyGroup	0..n	PropertyGroup resource that matches the search condition

**Return codes**

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success. A request has processed appropriately.
400	Bad request	Query parameter is not valid.
401	Unauthorized	No login privilege.
412	Precondition failed	The server is not running.
500	Server-side error	Processing error returned by the server.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -H
"Authorization: Bearer eyJhbxxx"
-X GET https://host:port/Automation/v1/objects/PropertyGroups?serviceID=3134
```

Request header:

```
GET /Automation/v1/objects/PropertyGroups?serviceID=3134 HTTP/1.1
Authorization: Bearer eyJhbxxx
```

```
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
Content-Type: application/json
```

**Response header:**

```
HTTP/1.1 200 OK
Date: Wed, 12 Feb 2015 13:07:40 GMT
Server: Cosminexus HTTP Server
WWW-Authenticate: HSSO 79879316d8774b77e381de745fb21aa2e735793_V0300
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "data" : [ {
    "keyName" : "reserved.defaultGroup",
    "displayName" : "reserved.defaultGroup",
    "description" : "",
    "ordinal" : 0,
    "validationScript" : "",
    "display" : "config,submit,taskDetail"
  } ],
  "count" : 1
}
```

## Task logs

This module covers the management functions available for the TaskLog resource.

### Getting a task log

**HTTP request syntax (URI)**

The following URI shows task log for a specified task. You can identify the `instanceID` of the target task when operating a task. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/TaskLogs
```

**Request**

The body of the request must be empty.



Query Parameters	Filter Condition
taskID	equal to the value
readSize	less than or equal to the value
offset	equal to the value
reverse	Function of whether a parameter name is valid or not. Specify by: <code>?[parameter name]</code> or <code>?[parameter name]=)</code>

A query parameter is a type of query string.

You can express a query parameter as follows:

```
?query_parameter=value
```

For example:

```
?taskID=16731
```

## Response

The response body structure is as follows:

```
{
  "data ":[ {...} ],
  "count " : count
}
```

The following table describes the objects specified as the `data` member.

Output	Resource Name	Number	Description
Task log	TaskLog	0..n	TaskLog resource that matches the search condition

## Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.

Status code	HTTP name	Description
400	Bad request	Query parameter is not valid.
401	Unauthorized	No login privilege.
412	Precondition failed	The server is not running.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbxxx" -X GET
https://host:port
/Automation/v1/objects/TaskLogs?taskID=5028^&readSize=1000000^&offset=0
```

Request header:

```
GET /Automation/v1/objects/TaskLogs?taskID=5028&readSize=1000000&offset=0 HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2015 06:34:43 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 5b9bde37a79093e512f91b9c72c816d9c2407aca_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

Response body:

```
{
  "data" : [ {
    "instanceID" : 5028,
    "text" : "**** Windows 7
6.1
TZ=Asia/
```

```

Tokyo                2015/08/03 15:38:46.825\r\n      yyyy/mm/dd
hh:mm:ss.sss        pid      tid      message-id
message(LANG=ja)\r\n1327 2015/08/03 15:38:46.907      Automation      3AD397B4
169188DB KNAE08001-I      Started executing plug-in (task name: Execute Remote
Command_20150803153816, task ID: 5028, step ID: /remoteHostCommandExe, execution ID:
@A103).\r\n1448 2015/08/03 15:38:47.094      Automation      3AD397B4 169188DB
KNAE08129-I      The general command plug-in started (command: hostname).\r
\n1450 2015/08/03 15:38:47.095      Automation      3AD397B4 169188DB KNAE08071-
I      The setting to elevate to root privileges for SSH connections is now
disabled.\r\n1467 2015/08/03 15:38:47.406      Automation      3AD397B4 169188DB
KNAE08082-I      A connection to the destination host was established and
authenticated (connection target: 127.0.0.1, protocol: local).\r\n1485 2015/08/03
15:38:47.492      Automation      3AD397B4 169188DB KNAE08130-I      The general
command plug-in was completed successfully (command: hostname).\r\n1522 2015/08/03
15:38:47.549      Automation      3AD397B4 169188DB KNAE08002-I      Plug-in
execution completed (task name: Execute Remote Command_20150803153816, task ID: 5028,
step ID: /remoteHostCommandExe, execution ID: @A103, plug-in return code: 0).\r\n",
  "totalSize" : 1445,
  "readSize" : 1445,
  "lineCount" : 9,
  "offset" : 0,
  "reverse" : false
} ],
"count" : 1
}

```

## Tag groups

This module covers the management functions available for the TagGroup resource.

### Getting a list of tag groups

#### HTTP request syntax (URI)

The following URI performs two functions:

- Acquires the list of tag groups
- Shows the list of tags that are bound to the tag group

You can identify the `instanceID` of the target task when operating a task. This request needs a minimum role of `Submit`.

```
GET https://host:port/Automation/version/objects/TagGroups
```

#### Request

None

**Response**

The response body structure is as follows:

```
{
  "data ":[ {...} ],
  "count " : count
}
```

The following table describes the objects specified as the `data` member.

Output	Resource Name	Number	Description
List of tag groups	TagGroup	0..n	TagGroup resource that matches the search condition

**Return codes**

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	No login privilege.
412	Precondition failed	The server is not running.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbGxxxx" -X GET
https://host:port
/Automation/v1/objects/TagGroups
```

Request header:

```
GET /Automation/v1/objects/TagGroups HTTP/1.1
Authorization: Bearer eyJhbGxxxx
User-Agent: curl/7.36.0
```

```
Host: host:port
Accept: application/json
```

### Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2015 06:34:43 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 5b9bde37a79093e512f91b9c72c816d9c2407aca_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

### Response body:

```
{
  "data" : [ {
    "instanceID" : 34,
    "name" : "Applications",
    "tags" : "SQL Server,XenDesktop,Oracle Database,Cluster,Exchange"
  }, {
    "instanceID" : 42,
    "name" : "Hypervisors",
    "tags" : "VMware vSphere,Hyper-V"
  }, {
    "instanceID" : 45,
    "name" : "Storage Services",
    "tags" : "Replicate Storage,Add Like Storage,Snapshot,Add New Storage"
  }, {
    "instanceID" : 54,
    "name" : "Uncategorized",
    "tags" : "Basic,Hitachi Vantara,Windows,Linux,Execute Script,Report Volume
Information to Replication Manager"
  } ],
  "count" : 4
}
```

## Tags

This module covers the management functions available for the Tag resource.

## Getting a list of tags for a resource

The following URI shows a list of tags that correspond to one of the following resource types:

- ServiceTemplate
- Service
- Task
- TaskHistory

This request needs a minimum role of Submit.

### HTTP request syntax (URI)

```
GET https://host:port/Automation/version/objects/Tags
```

### Request

The body of the request must be empty.

Query Parameters	Filter Condition
detail	Function of whether the parameter name is valid or not. Specify by: <code>?[parameter name]</code> or <code>?[parameter name]=</code>
resourceType	equal to the value



**Note:** Observe the following:

- Values which can be specified to `resourceType` (ServiceTemplate, Service, Task, TaskHistory).
- If specifying `resourceType`, the query parameter which can use the specified resource is valid. For example, if specifying `resourceType=ServiceTemplate`, you can specify the Tags query which can be used with the ServiceTemplate API.

You can express a query parameter as follows:

```
?Query_parameter=value
```

For example:

```
?serviceID=16731
```

**Response**

The response body structure is as follows:

```
{
  "data ":[ {...} ],
  "count " : count
}
```

The following table describes the objects specified as the `data` member.

Output	Resource Name	Number	Description
List of tasks	Task	0..n	Task resource that matches the search condition

**Return codes**

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthorized	No login privilege.
412	Precondition failed	The server is not running.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbGxxxx" -X GET
https://host:port
/Automation/v1/objects/Tags
```

Request header:

```
GET /Automation/v1/objects/Tags HTTP/1.1
Authorization: Bearer eyJhbGxxxx
User-Agent: curl/7.36.0
```

```
Host: host:port
Accept: application/json
```

**Response header:**

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 06:34:43 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 5b9bde37a79093e512f91b9c72c816d9c2407aca_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "data" : [ {
    "instanceID" : 35,
    "name" : "Replicate Storage",
    "tagGroupID" : 45
  }, {
    "instanceID" : 36,
    "name" : "SQL Server",
    "tagGroupID" : 34
  }, {
    "instanceID" : 37,
    "name" : "Add Like Storage",
    "tagGroupID" : 45
  }, {
    "instanceID" : 38,
    "name" : "Snapshot",
    "tagGroupID" : 45
  }, {
    "instanceID" : 39,
    "name" : "Add New Storage",
    "tagGroupID" : 45
  }, {
    "instanceID" : 40,
    "name" : "VMware vSphere",
    "tagGroupID" : 42
  }, {
    "instanceID" : 41,
    "name" : "XenDesktop",
    "tagGroupID" : 34
  }, {
    "instanceID" : 43,
```



```

    "name" : "Hyper-V",
    "tagGroupID" : 42
  }, {
    "instanceID" : 44,
    "name" : "Oracle Database",
    "tagGroupID" : 34
  }, {
    "instanceID" : 46,
    "name" : "Cluster",
    "tagGroupID" : 34
  }, {
    "instanceID" : 47,
    "name" : "Exchange",
    "tagGroupID" : 34
  }, {
    "instanceID" : 51,
    "name" : "Basic",
    "tagGroupID" : 54
  }, {
    "instanceID" : 52,
    "name" : "Hitachi",
    "tagGroupID" : 54
  }, {
    "instanceID" : 552,
    "name" : "Windows",
    "tagGroupID" : 54
  }, {
    "instanceID" : 559,
    "name" : "Linux",
    "tagGroupID" : 54
  }, {
    "instanceID" : 564,
    "name" : "Execute Script",
    "tagGroupID" : 54
  }, {
    "instanceID" : 1004,
    "name" : "Report Volume Information to Replication Manager",
    "tagGroupID" : 54
  } ],
  "count" : 17
}

```

## External server connection

This module covers the management functions available for the ExternalServerConnection resource.

## Getting a list of external server connections

### HTTP request syntax (URI)

The following URI shows a list of service connections (such as vCenterConnection). This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/ExternalServerConnections
```

### Request

The body of the request must be empty.

### Response

The response body structure is as follows:

```
{
  "data": [ {...} ],
  "count" : count
}
```

The following table describes the objects specified as the `data` member.

Output	Resource Name	Number	Description
List of external server connections	ExternalServerConnection	0..n	ExternalServerConnection resource that matches the search condition

### Return codes

The following table lists the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	Query parameter is not valid.
401	Unauthorized	No login privilege.
403	Forbidden	No reference privilege
412	Precondition failed	The server is not running.
500	Server-side error	Server processing error.

Status code	HTTP name	Description
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbxxx" -X GET
https://host:port/Automation/v1/objects/ExternalServerConnections
```

Request header:

```
GET /Automation/v1/objects/ExternalServerConnections HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 05:55:15 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 34dfb124a5fcef8089f853d1391341dfbee4cb_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

Response body:

```
{
  "data" : [ {
    "instanceID" : 9335,
    "name" : "hdvm",
    "createTime" : "2016-03-23T14:59:02.000+09:00",
    "modifyTime" : "2016-03-23T14:59:02.000+09:00",
    "productName" : "DeviceManager",
    "protocol" : "http",
    "ipAddress" : "10.196.184.182",
    "port" : 22015,
    "userID" : "system",
    "status" : "success",
    "active" : true,
  } ]
}
```

```

    "connectedTime" : "2016-03-23T14:59:09.000+09:00"
  } ],
  "count" : 1
}

```

## Host

This module covers the management functions available for the Host resource:

### Getting a list of hosts

#### HTTP request syntax (URI)

The following URI shows a list of hosts. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/Hosts
```

#### Request

The body of the request must be empty.

Query Parameters	Filter Condition
externalServerConnectionID	Can either include this value or not. <b>Note:</b> It cannot be specified multiple times.

A query parameter is a type of query string.

You can express a query parameter as follows:

```
?Query_parameter=version
```

For example:

```
?externalServerConnectionID=16731
```

#### Response

The response body structure is as follows:

```

{
  "data ":[ {...} ],
  "count " : count
}

```

The following table describes the objects specified as the `data` member.

Output	Resource Name	Number	Description
List of hosts	Host	0..n	Host resource that matches the search condition

### Return codes

The following table describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	Query parameter is not valid.
401	Unauthorized	No login privilege.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbGxxxx" -X GET
https://host:port/Automation/v1/objects/Hosts
```

Request header:

```
GET /Automation/v1/objects/Hosts HTTP/1.1
Authorization: Bearer eyJhbGxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Tue, 15 Dec 2015 07:55:45 GMT
Server: Cosminexus HTTP Server
Cache-Control: no-cache
WWW-Authenticate: HSSO a9122fc5943c191dae623af5a5292d5a58cf793_ZA1DR1YHFw5UdyNW_V0810
```

```
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "data" : [ {
    "instanceID" : "6995_576939",
    "hostName" : "host01",
    "hostID" : 576939,
    "wwn" : "00.00.00.00.00.00.00.06, 00.00.00.00.00.00.00.08",
    "wwnNickname" : "-",
    "iscsiName" : "-",
    "ipAddress" : "-",
    "operatingSystem" : "Windows",
    "capacityInKb" : 0,
    "cluster" : "-",
    "model" : "-",
    "hostType" : "-",
    "fileServerType" : "-",
    "deviceManagerName" : "hdvm",
    "displayName" : "host01",
    "hostInfoID" : 576939,
    "externalServerConnectionID" : 6995
  }, {
    "instanceID" : "6995_576944",
    "hostName" : "host02",
    "hostID" : 576944,
    "wwn" : "00.00.00.00.00.00.00.10, 00.00.00.00.00.00.00.12",
    "wwnNickname" : "-",
    "iscsiName" : "-",
    "ipAddress" : "-",
    "operatingSystem" : "Windows",
    "capacityInKb" : 0,
    "cluster" : "-",
    "model" : "-",
    "hostType" : "-",
    "fileServerType" : "-",
    "deviceManagerName" : "hdvm",
    "displayName" : "host02",
    "hostInfoID" : 576944,
    "externalServerConnectionID" : 6995
  } ],
  "count" : 2
}
```

## Storage systems

This module covers the management functions available for the StorageSystem resource.

### Getting a list of storage systems

#### HTTP request syntax (URI)

The following URI allows you to obtain a list of storage systems. This request needs a minimum role of Submit.

```
GET https://host:port/Automation/version/objects/StorageSystems
```

#### Request

The body of the request must be empty.

#### Response

The response body structure is as follows:

```
{
  "data": [ {...} ],
  "count" : count
}
```

The following table describes the objects specified as the `data` member.

Output	Resource Name	Number	Description
List of storage systems	StorageSystem	0..n	StorageSystem resource that matches the search condition

#### Return codes

The following table lists the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
400	Bad request	Query parameter is not valid.
401	Unauthorized	No login privilege.
403	Forbidden	No reference privilege

Status code	HTTP name	Description
412	Precondition failed	The server is not running.
500	Server-side error	Server processing error.
503	Service unavailable	The server currently cannot receive requests. Try your request again.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbGxxxx" -X GET
https://host:port/Automation/v1/objects/StorageSystems
```

Request header:

```
GET /Automation/v1/objects/StorageSystems HTTP/1.1
Authorization: Bearer eyJhbGxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Thu, 31 Jul 2014 05:55:15 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 34dfb124a5fcef89f853d1391341dfbee4cb_vm011150_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

Response body:

```
{
  "data" : [ {
    "instanceID" : "6995_310",
    "storageArrayID" : 310,
    "name" : "VSP@10.197.73.234",
    "displayName" : "VSP@10.197.73.234",
    "storageSystemInfoID" : 310,
    "externalServerConnectionID" : 6995
  } ],
}
```



```
"count" : 1
}
```

## Other resources

This module covers the resources found in other domains:

### Getting user information

#### HTTP request syntax (URI)

The following URI shows information about the current user. This resource needs a minimum role of Submit.

```
GET https://host:port/Automation/version/user
```

#### Request

The body of the request must be empty.

#### Response

The response body structure is as follows:

```
{
  "userName" : "user-name",
  "accessPermission" : [ "access-permission1",... ],
  "fullName" : "full-name",
  "description" : "description",
  "email" : "e-mail"
  "resourceGroup" : [ {
    "instanceID" : "instance-id",
    "name" : "resource-group-name",
    "description" : "description",
    "accessPermission" : [ "access-permission1",... ]
  } ],
  "logonTime" : "logon-time"
}
```

#### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbxxx" -X GET
https://host:port/Automation/v1/user
```

**Request header:**

```
GET /Automation/v1/user HTTP/1.1
Authorization: Bearer eyJhbxxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

**Response header:**

```
HTTP/1.1 200 OK
Date: Wed, 30 Jul 2014 09:57:02 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 2367971783cfaelf2041f3ffdf4866da75763_vm011150_v0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-store, no-transform
Transfer-Encoding: chunked
Content-Type: application/json
```

**Response body:**

```
{
  "userName" : "System",
  "accessPermission" : [ "User Management" ],
  "fullName" : "",
  "description" : "Built-in account",
  "email" : "",
  "resourceGroup" : [ {
    "instanceID" : "Automation_RG_ALL",
    "name" : "All Service Groups",
    "description" : "default service groups which contains all services",
    "accessPermission" : [ "Develop", "Execute", "Modify", "Admin", "View" ]
  } ],
  "logonTime" : "2015-12-14T00:00:32.096-08:00"
}
```

## Getting the version information

**HTTP request syntax (URI)**

The following URI shows information about the current product and API versions. This resource needs a minimum role of Submit.

```
GET https://host:port/Automation/version/configuration/version
```

## Request

The body of the request must be empty.

## Response

The response structure is as follows:

```
{
  "productName" : "product-name",
  "product Version " : "product-version",
  "apiVersion" : "api-version"
}
```

## Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Authorization: Bearer eyJhbxxx" -X GET
https://host:port/Automation/v1/configuration/version
```

Request header:

```
GET /Automation/v1/configuration/version HTTP/1.1
Authorization: Bearer eyJhbxxx
User-Agent: curl/7.36.0
Host: host:port
Accept: application/json
```

Response header:

```
HTTP/1.1 200 OK
Date: Wed, 31 Jul 2019 07:55:28 GMT
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO 978d185de7aa4616dc6c886286c6d3ea01d23e4_WIN-JLTV0PQLK2A_V0810
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: GET, POST, DELETE, PUT, HEAD, OPTIONS
Access-Control-Allow-Credentials: true
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: application/json
```

Response body:

```
{
  "productName" : "Hitachi Ops Center Automator",
  "productVersion" : "10.0-00",
  "apiVersion" : "01.01.00"
}
```

---

## Appendix A: Reference information

This module describes the built-in service templates and plug-ins, reserved properties, and locale settings for plug-ins.

### HTTP status codes

The API uses the following standard HTTP status codes to convey the results of the REST operations:

Status code	HTTP name	Description
200	OK	Success. A request has processed appropriately.
201	Created	Return this code instead of 200 if a resource creation processing is successful.
204	No content	Request was successful, but if the response to return does not exist, return this code instead of 200.
303	See other	Request was processed successfully using another URI. Return this code instead of 200.
400	Bad request	Request contents missing or not valid.
401	Unauthorized	Authentication/authorization credentials are not valid. Notify user that authentication is required to access a resource through the WWW-authenticate header. If the request which already contains the authorization header is being performed, show that the authentication credentials were refused.
403	Forbidden	This user is not allowed to perform this request. If there is no update privilege, delete the related resource.
404	Not found	Either the resource, the operation, or the Read privilege to the resource is missing.

Status code	HTTP name	Description
405	Method not allowed	Requested HTTP verb not allowed on this resource.
406	Not acceptable	Response format is not supported.
409	Conflict	Request cannot be finished since it conflicts with the current data existing in the server.
412	Precondition failed	The request was not received in a certain order and has failed a precondition.
415	Unsupported media type	Request format is not supported.
500	Server-side error	Processing error returned by the server.
503	Service unavailable	The server currently cannot receive requests. Try your request again.



**Note:** The table gives general descriptions of each status code. Specific information and descriptions might vary depending on the URI. For specific status code descriptions, see the return codes provided for each resource URI.

## Using the log file for API troubleshooting

Reviewing the log files can be helpful when troubleshooting the Automator API.

The public log (`logs/Server*.log`) contains the error message when an error occurs.

## API resource map

The following table gives a map of the API resources according to their GUI location. The table does not represent all available resources.

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
Service	Service List	Acquire service list.	N/A	Invoke the GET method of Services and acquire service list.

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
			serviceGroup ID	<ol style="list-style-type: none"> <li>1. Invoke the GET method of ServiceGroups and acquire resource group list.</li> <li>2. Identify the target instance ID from resource group list, specify it as a query, and invoke the GET method of Services.</li> </ol>
	Edit Service	Edit the service.	N/A	Update the service <ol style="list-style-type: none"> <li>1. Invoke the GET method of Services and acquire service list.</li> <li>2. Identify the target instance ID from service list and invoke the GET method of Services/ &lt;instanceID&gt;.</li> </ol>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
				<ol style="list-style-type: none"> <li>3. Edit the Service object of the response of 2).</li> <li>4. Specify the object edited at 3) as an argument, and invoke the PUT method of Services/ <i>&lt;instanceID&gt;</i>.</li> </ol>
			N/A	<p>Updated the property</p> <ol style="list-style-type: none"> <li>1. Invoke the GET method of Services and acquire service list.</li> <li>2. Identify the target <code>serviceID</code> from service list, invoke the GET method of PropertyValues? <code>serviceID=&lt;serviceID&gt;</code>, and acquire a list of PropertyValues.</li> </ol>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
				<ol style="list-style-type: none"> <li>3. Identify and edit the target instance ID from the list of PropertyValues.</li> <li>4. Specify the object edited at 3) as an argument, and invoke the PUT method of PropertyValues/ &lt;instanceID&gt;.</li> </ol>
	Delete Service	Delete the service.	N/A	<ol style="list-style-type: none"> <li>1. Invoke the GET method of Services and acquire service list.</li> <li>2. Identify the target instance ID from service list and invoke the DELETE method of Services/ &lt;instanceID&gt;.</li> </ol>



GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
	Submit Service	Submit the service to run immediately.	N/A	<ol style="list-style-type: none"> <li>1. Invoke the GET method of Services and acquire service list.</li> <li>2. Identify the target <i>instance ID</i> from service list and invoke the GET method of Services/ <i>&lt;instance/ D&gt;/actions/ submit</i>.</li> <li>3. Change the schedule and property of a response of 2) accordingly .</li> <li>4. Specify the object edited at 3) as an argument, and invoke the POST method of Services/ <i>&lt;instance/ D&gt;/actions/ submit/ invoke</i>.</li> </ol>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
				To change the interval to immediate/ scheduled/ periodical, change the <code>scheduleType</code> or <code>taskType</code> .
Task	Task list	Acquire task list.	N/A	Invoke the GET method of Task and acquire task list.
			<code>serviceID</code>	<ol style="list-style-type: none"> <li>1. Invoke the GET method of Service and acquire service list.</li> <li>2. Identify the target <code>instanceID</code> from a service list, specify it as a query, and invoke the GET method of Task.</li> </ol>
			<code>serviceGroupID</code>	<ol style="list-style-type: none"> <li>1. Invoke the GET method of ServiceGroup and acquire resource group list.</li> </ol>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
				<ol style="list-style-type: none"> <li>Identify the target <code>instance ID</code> from resource group list, specify it as a query, and invoke the GET method of Task.</li> </ol>
			<code>scheduleID</code>	<ol style="list-style-type: none"> <li>Invoke the GET method of Schedule and acquire schedule list.</li> <li>Identify the target <code>instance ID</code> from schedule list, specify it as a query, and invoke the GET method of Task.</li> </ol>
		Display task details dialog box.	N/A	Acquire task summary <ol style="list-style-type: none"> <li>Invoke the GET method of Task and acquire task list.</li> </ol>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
				<p><b>2.</b> Identify the target <code>instanceID</code> from task list and invoke the GET method of Tasks/ <code>&lt;instanceID&gt;</code>.</p>
			N/A	<p>Acquire task property</p> <p><b>1.</b> Invoke the GET method of Task and acquire task list.</p> <p><b>2.</b> Identify the target <code>taskID</code> from task list and invoke the GET method of PropertyValue? <code>taskID=taskID</code>.</p>
		Suspend the schedule.	N/A	<p><b>1.</b> Invoke the GET method of Task and acquire task list.</p>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
				<ol style="list-style-type: none"> <li>2. Identify instance ID of the target schedule and invoke the GET method of Services/ &lt;instance/ D&gt;/actions/ suspend.</li> <li>3. Edit the return value of 2) and invoke the POST method of Services/ &lt;instance/ D&gt;/actions/ suspend/ invoke.</li> </ol>
		Cancel the schedule.	N/A	<ol style="list-style-type: none"> <li>1. Invoke the GET method of Task and acquire task list.</li> <li>2. Identify instance ID of the target schedule and invoke the GET method of Services/ &lt;instance/ D&gt;/actions/ cancel.</li> </ol>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
				) Edit the return value of 2) and invoke the POST method of Services/<instanceID>/actions/cancel/invoke.
		Resume the schedule.	N/A	<ol style="list-style-type: none"> <li>1. Invoke the GET method of Task and acquire task list.</li> <li>2. Identify instance ID of the target schedule and invoke the GET method of Services/&lt;instanceID&gt;/actions/resume.</li> <li>3. Edit the return value of 2) and invoke the POST method of Services/&lt;instanceID&gt;/actions/resume/invoke.</li> </ol>
		Resubmit the task.	N/A	<ol style="list-style-type: none"> <li>1. Invoke the GET method of Task and acquire task list.</li> </ol>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
				<ol style="list-style-type: none"> <li>Identify the target <code>instance ID</code> from task list and invoke the GET method of <code>Tasks/&lt;instanceID&gt;/actions/resubmit</code>.</li> <li>Edit the return value of 2) and invoke the POST method of <code>Tasks/&lt;instanceID&gt;/actions/resubmit/invoke</code>.</li> </ol>
		Archive the task.	N/A	<ol style="list-style-type: none"> <li>Invoke the GET method of Task and acquire task list.</li> <li>Identify the target <code>instance ID</code> from task list and invoke the GET method of <code>Tasks/&lt;instanceID&gt;/actions/archive</code>.</li> </ol>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
				<ol style="list-style-type: none"> <li>3. Edit the return value of 2) and invoke the POST method of Tasks/ <i>&lt;instance/ D&gt;/actions/ archive/ invoke.</i></li> </ol>
		Stop the task.	N/A	<ol style="list-style-type: none"> <li>1. Invoke the GET method of Task and acquire task list.</li> <li>2. Identify the target instance ID from task list and invoke the GET method of Tasks/ <i>&lt;instance/ D&gt;/actions/ stop.</i></li> <li>3. Edit the return value of 2) and invoke the POST method of Tasks/ <i>&lt;instance/ D&gt;/actions/ stop/ invoke.</i></li> </ol>



GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
	Task History List	Acquire the task history.	N/A	Invoke the GET method of TaskHistory and acquire task history list.
			start	Specify the start date and time (start) as a query, invoke the GET method of TaskHistory, and acquire a task history list.
			end	Specify the end date and time (end) as a query, invoke the GET method of TaskHistory, and acquire task history list.
			serviceGroup ID	<ol style="list-style-type: none"> <li>1. Invoke the GET method of ServiceGroup and acquire resource group list.</li> <li>2. Identify the target instance ID from resource group list, specify it as a query, and invoke the GET method of TaskHistory.</li> </ol>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
	Delete Task History	Delete the task history.	N/A	<ol style="list-style-type: none"> <li>1. Invoke the GET method of TaskHistory and acquire task history list.</li> <li>2. Identify the target instance ID from task history list, and invoke the DELETE method of Tasks/ &lt;instanceID&gt;.</li> </ol>
Administration	Create Resource Group	Create a resource group.	N/A	Invoke the GET method of ServiceGroup and acquire resource group list.
			role	Specify the arbitrary role as a query, invoke the GET method of ServiceGroup, and acquire resource group list.
			userGroupID	No method is available to identify the userGroupID.

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
	Edit Resource Group	Edit the resource group.	N/A	<ol style="list-style-type: none"> <li>1. Invoke the GET method of ServiceGroup and acquire resource group list.</li> <li>2. Identify the target instance ID from resource group list, and invoke the GET method of ServiceGroups/&lt;instanceID&gt;.</li> <li>3. Edit the ServiceGroup object of the response of 2).</li> <li>4. Specify the object edited at 3) as an argument, and invoke the PUT method of ServiceGroups/&lt;instanceID&gt;.</li> </ol>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
	Delete Resource Group	Delete the resource group.	N/A	<ol style="list-style-type: none"> <li>1. Invoke the GET method of ServiceGroup and acquire resource group list.</li> <li>2. Identify the target instance ID from resource group list, and invoke the DELETE method of ServiceGroups/ &lt;instanceID&gt;.</li> </ol>
	Edit User Group/Add Resource Group	Edit the resource group to the user group.	N/A	<ol style="list-style-type: none"> <li>1. Invoke the GET method of ServiceGroup and acquire resource group list.</li> </ol>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
				<p><b>2.</b> Identify the target instance ID from resource group list, and invoke the GET method of ServiceGroups/<i>&lt;instanceID&gt;/actions/assign</i>.</p> <p><b>3.</b> Edit the assign object of the response of 2). Specify the user group name set as UserGroupName by confirming it on GUI.</p> <p><b>4.</b> Specify the object edited at 3) as an argument, and invoke the POST method of ServiceGroups/<i>&lt;instanceID&gt;/actions/assign/</i> invoke.</p>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
	Edit User Group/Edit Role of Resource Group	Edit the resource group to the user group.	N/A	<ol style="list-style-type: none"> <li>1. Invoke the GET method of ServiceGroup and acquire resource group list.</li> <li>2. Identify the target instance ID from resource group list, and invoke the GET method of ServiceGroups/<i>&lt;instanceID&gt;/actions/assign</i>.</li> <li>3. Edit the assign object of the response of 2). Specify the user group name set as UserGroupName by confirming it on GUI.</li> </ol>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
				<p>4. Specify the object edited at 3) as an argument, and invoke the POST method of ServiceGroups/&lt;instanceID&gt;/actions/assign/invoke.</p>
	Edit User Group/Delete Resource Group	Remove the resource group from the user group.	N/A	<p>1. Invoke the GET method of ServiceGroup and acquire resource group list.</p> <p>2. Identify the target instance ID from resource group list, and invoke the GET method of ServiceGroups/&lt;instanceID&gt;/actions/unassign.</p>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
				<p><b>3.</b> Edit the unassign object of the response of 2). Specify the user group name set as UserGroup Name by confirming it on GUI.</p> <p><b>4.</b> Specify the object edited at 3) as an argument, and invoke the POST method of ServiceGroups/<i>&lt;instanceID&gt;/actions/unassign/</i>invoke.</p>



## Appendix B: Service and content properties list

This module describes the Ops Center Automator API services and properties.



### Note:

- When you edit or submit a service from the Ops Center Automator API, do not edit any properties that are not listed in this module because they are for internal use only.
- Default values for the File type properties are described without escaping special characters. If you create a request body for input to the API by editing the default values in this module, you must escape special characters such as double quotation marks (").

### Add host to cluster in vCenter service properties

Use the following properties to modify or create values for the Add Host to Cluster in vCenter Service.

#### Add host to cluster in vCenter service (edit)

keyName	Type	Description	Range	Default value
vCenterConnection	File	Specify a vCenter connection.	See Following File type property list.	-
ESXCluster	String	Specify a ESX Cluster.	-	-
ESXHosts	File	Specify ESX servers to which existing datastores need to be allocated.	See Following File type property list.	-

keyName	Type	Description	Range	Default value
ConfigurationManagerConnection	File	Shows a table in which you can choose the Configuration Manager connection.	See Following File type property list.	-
StorageSystem	File	Shows a table in which you can choose the storage system.	See Following File type property list.	-
ResourceGroup	File	Specify a resource group.	See Following File type property list.	-
PortSelection	String	Select storage port selection condition. "Smaller number of hosts": Select the port with the smallest registered WWN. (Default value) "Smaller number of volumes": Select the port with the smallest registered LUN.	"HOST" or "VOLUME"	"HOST"
ResourceCriteria	File	Specify the Storage Port Configuration Expressions (Name and Value) that meets the specified criteria (Equals, Not Equals, Starts with, and Ends with) based on the selected condition (All or Any).	See Following File type property list.	{ "storagePortCriteria": {"condition": {"expressions": [], "join": "All"} }}

keyName	Type	Description	Range	Default value
ScriptForHostGroupNaming	File	Write down a script to decide names of Host Groups.	-	See the following script example.
HostMode	String	Specify Host Mode.	See the Provisioning Guide for your storage system for details about the host mode.	VMWARE_EX
HostModeOptions	String	Specify Host Mode Options.	See the Provisioning Guide for your storage system for details about host mode options.	[]
BNAConnections	File	Specify the connection for the FOS_PrimarySwitch defined in the Web Service Connections on the Administration tab. If this value is omitted, the system uses all connections that are defined for the product name listed in the Web Service Connections.	See Following File type property list.	-
TargetFabrics	String	Specify target fabrics.	-	-
UseExistingZone	Boolean	Specify whether to use existing zone.	true / false	false

keyName	Type	Description	Range	Default value
UseActiveZoneOnly	Boolean	Specify whether to use only active zone.	true / false	true
NumOfHopsRestriction	Boolean	Specify whether to enable Num. of Hops Restriction.	true / false	false
UpdateZoneConfiguration	Boolean	Determines whether to add to an existing zone or create a new zone. If Use Existing Zone is true, this setting is ignored even if entered.	true / false	true

keyName	Type	Description	Range	Default value
UseExistingZoneAliases	Boolean	Determines whether to use existing zone aliases. Specify True to use predefined zone aliases regardless of the specified naming conventions. If you specify False, the system selects zone aliases that follow the naming conventions. In either case, if there are no existing zone aliases, the system creates new ones that follow the naming conventions. When selecting the existing Zone Alias, Zone naming is fixed as HostZoneAliasName_StorageZoneAliasName.	true / false	false
UpdateCurrentActiveZone Configuration	Boolean	Determines whether to use Zone Active configuration when adding or creating a zone.	true / false	true

keyName	Type	Description	Range	Default value
ZoneConfigurationsToUpdate	String	Lists the zone configuration names to add (separated by commas). If Update Zone Configuration is false, this setting is ignored.	-	-
IntervalForEachFabricSettings	Integer	Specify wait time between configuring each fabric (min).	-	0
ScriptForZoneNaming	File	Specify naming rule for zone as script.	-	See the following script example.
ScriptForHostZoneAliasNaming	File	Specify naming rule for Zone Alias of host WWN as script.	-	See the following script.
ScriptForStorageZoneAliasNaming	File	Specify naming rule for Zone Alias of storage port as script.	-	See the following script example.

### File type property list

Table 18 vCenterConnection

Data nesting information		Description	Range
values			
	productName	Product name of registering to Web Service Connection	"vCenter"
	name	Name	-
	ipAddress	IP address	-
	port	Port	-
	protocol	Protocol	-

Data nesting information		Description	Range
	userID	User ID	-
	status	Status of connection	-
	connectedTime	Connected time	-

Table 19 ConfigurationManagerConnection

Data nesting information		Description	Range
values			
	productName	Product name of registering to Web Service Connection	"ConfigurationManager"
	name	Name	-
	ipAddress	IP address	-
	port	Port	-
	protocol	Protocol	-
	userID	User ID	-
	status	Status of connection	-
	connectedTime	Connected time	-

Table 20 StorageSystem

Data nesting information		Description	Range
values			
	storageDeviceId	Storage Device ID	-
	model	Model	-
	serialNumber	Serial Number	-
	svplp	SVP IP Address	-

Table 21 ResourceGroup

Data nesting information		Description	Range
values			

Data nesting information		Description	Range
	resourceGroupId	Resource Group ID	-
	resourceGroupName	Resource Group Name	-
	virtualStorageId	Virtual Storage System ID	-

Table 22 ResourceCriteria

Data nesting information		Description	Range
values			
	storagePortCriteria	Storage Port Criteria	-
	condition	Condition	-
	expressions	Expression	-
	name	Name	"Name"
	op	Operation	"Equals", "Not Equals", "Starts With", "Ends With"
	value	Value	-
	join	Join condition of the Expressions	"All", "Any"

Table 23 BNAConnections

Data nesting information		Description	Range
values			
	productName	Category	-
	name	Name	-
	ipAddress	IP address / Host Name	-
	port	Port	-
	protocol	Protocol	-
	userID	User ID	-
	status	Status	-
	connectedTime	Connected time	-



Table 24 ScriptForHostGroupNaming

Specifications of the script	Description
script	Function that is written in the syntax of ECMA Script 5. The following conditions of arguments and return must be satisfied.
arguments	<p>arguments[0]: The object with the following properties is passed as an argument.</p> <p>mold: The ID of the host</p> <p>(Managed Object ID in vCenter) name: The name of the host.</p> <p>clusterName: The name of the cluster to which the host belongs.</p> <p>clusterMold: The ID of the cluster to which the host belongs.</p> <p>(Managed Object ID in vCenter) ipAddresses: The IP addresses for management of the host.</p> <p>wwns: The WWNs of the host (: separated hex value)</p>
return	<p>Script must return the string that satisfies the following conditions:</p> <ol style="list-style-type: none"> <li>1. Available characters: Only alphanumeric characters and “ - ”</li> <li>2. The first character is alphabetic</li> <li>3. Host Group name is up to 64 characters</li> </ol>
example	<pre>function(host) { /** * Following attributes are available. * * - host.moId: string * The ID of the host (Managed Object ID in vCenter) * * - host.name: string * The name of the host. * * - host.clusterName: string * The name of the cluster to which the host belongs. * * - host.clusterMoId: string * The ID of the cluster to which the host belongs. * (Managed Object ID in vCenter) * * - host.ipAddresses: string * The IP addresses for management of the host. * * - host.wwns: [string] * The WWNs of the host (: separated hex value) */ var hostGroupName = host.name; if (!hostGroupName) { hostGroupName = "HostGroupForDataStore"; } return hostGroupName; }</pre>

**Table 25 ScriptForZoneNaming / ScriptForHostZoneAliasNaming / ScriptForStorageZoneAliasNaming**

Specifications of the script	Description
script	Function that is written in the syntax of ECMA Script 5. The following conditions of arguments and return must be satisfied.
arguments	<p>arguments[0]: The object with the following properties is passed as an argument.</p> <p>hostname: Host name</p> <p>hostPortWorldWideName: WWN of HBA. Separator notation is based on BNA.</p> <p>storagePortWorldWideName: WWN of CHA. Separator notation is based on BNA.</p> <p>storageSystemFamily: Display model name of the physical storage system</p> <p>storageSystemName: Name of physical storage system on Device Manager</p> <p>storageSystemSerialNumber: Serial number of physical storage system</p> <p>storagePortName: Display port name of the storage system</p> <p>virtualStorageArrayFamily: Display model name of virtual storage (if non-virtual, "-")</p> <p>virtualStorageSystemName: Name of virtual storage on Device Manager (if non-virtual, "-")</p> <p>virtualSerialNumber: Serial number of virtual storage (if non-virtual, "-")</p> <p>serviceProperties: List of the service properties passed to the plug-in</p>
return	<p>Script must return the string that satisfies the following conditions:</p> <ol style="list-style-type: none"> <li>1. Available characters: Only alphanumeric characters and "_"</li> <li>2. The first character is alphabetic</li> <li>3. Zone is up to 60 characters, Zone Alias is up to 64 characters</li> <li>4. About Zone, the string starting from "LSAN_", "TI_", "QOSHn+_ ", "QOSMn+_ ", "QOSLn_" is not allowed (case ignored. "n" is number.)</li> </ol>
example	<pre>(function(args) { var name; if(! args.virtualSerialNumber    args.virtualSerialNumber == "-"){ name = args.hostName + "_" + args.storageSystemName + "_" +</pre>

Specifications of the script	Description
	<pre>args.storagePortName; }else{ name = args.hostName + "_" + args.virtualStorageSystemName + "_" + args.storagePortName; } if (!(name === null    typeof(name) == "string"    name instanceof String)) { throw new Error("Zone name must be a string: "+ name); } name = name.replace(/^[A-Za-z0-9_]/g, '_'); if(name.length &gt; 60){ throw new Error("Zone name must be within 60 characters: "+ name); } if (/^[A-Z]/ i.test(name) == false) { throw new Error("Zone name must start with a alphabet: "+ name); } if (/^LSAN_/ i.test(name)    /^TI_/i.test(name)    /^QOS[HML][0-9]+_/ i.test(name)) { throw new Error("Zone name has the prefix LSAN_, TI_ or QOSxx_ cannot be for normal zone: "+name); } return name; }</pre>

## Add host to cluster in vCenter service (submit)

keyName	Type	Description	Range	Default value
vCenterConnection	File	Specify a vCenter connection.	See Following File type property list.	-
ESXCluster	String	Specify a ESX Cluster.	-	-
ESXHosts	File	Specify ESX servers to which existing datastores need to be allocated.	See Following File type property list.	-
ConfigurationManagerConnection	File	Shows a table in which you can choose the Configuration Manager connection.	See Following File type property list.	-

keyName	Type	Description	Range	Default value
StorageSystem	File	Shows a table in which you can choose the storage system.	See Following File type property list.	-
ResourceGroup	File	Specify a resource group.	See Following File type property list.	-
PortSelection	String	Select storage port selection condition. "Smaller number of hosts": Select the port with the smallest registered WWN. (Default value) "Smaller number of volumes: Select the port with the smallest registered LUN.	"HOST" or "VOLUME"	"HOST"
ResourceCriteria	File	Specify the Storage Port Configuration Expressions (Name and Value) that meets the specified criteria (Equals, Not Equals, Starts with, and Ends with) based on the selected condition (All or Any).	See Following File type property list.	{"storagePortCriteria": {"condition": {"expressions": [], "join": "All"}}
ScriptForHostGroupNaming	File	Write down a script to decide names of Host Groups.	-	See the following script example.

keyName	Type	Description	Range	Default value
HostMode	String	Specify Host Mode.	See the Provisioning Guide for your storage system for details about the host mode.	VMWARE_EX
HostModeOptions	String	Specify Host Mode Options.	See the Provisioning Guide for your storage system for details about the host mode options.	[]
BNAConnections	File	Specify the connection for the FOS_PrimarySwitch defined in the Web Service Connections on the Administration tab. If this value is omitted, the system uses all connections that are defined for the product name listed in the Web Service Connections.	See Following File type property list.	-
TargetFabrics	String	Specify target fabrics.	-	-
UseExistingZone	Boolean	Specify whether to use existing zone.	true / false	false
UseActiveZoneOnly	Boolean	Specify whether to use only active zone.	true / false	true

keyName	Type	Description	Range	Default value
NumOfHopsRestriction	Boolean	Specify whether to enable Num. of Hops Restriction.	true / false	false
UpdateZoneConfiguration	Boolean	Determines whether to add to an existing zone or create a new zone. If Use Existing Zone is true, this setting is ignored even if entered.	true / false	true

keyName	Type	Description	Range	Default value
UseExistingZoneAliases	Boolean	Determines whether to use existing zone aliases. Specify True to use predefined zone aliases regardless of the specified naming conventions. If you specify False, the system selects zone aliases that follow the naming conventions. In either case, if there are no existing zone aliases, the system creates new ones that follow the naming conventions. When selecting the existing Zone Alias, Zone naming is fixed as HostZoneAliasName_StorageZoneAliasName.	true / false	false
UpdateCurrentActiveZone Configuration	Boolean	Determines whether to use Zone Active configuration when adding or creating a zone.	true / false	true

keyName	Type	Description	Range	Default value
ZoneConfigurationsToUpdate	String	Lists the zone configuration names to add (separated by commas). If Update Zone Configuration is false, this setting is ignored.	-	-
IntervalForEachFabricSettings	Integer	Specify wait time between configuring each fabric (min).	-	0
ScriptForZoneNaming	File	Specify naming rule for zone as script.	-	See the following script example.
ScriptForHostZoneAliasNaming	File	Specify naming rule for Zone Alias of host WWN as script.	-	See the following script.
ScriptForStorageZoneAliasNaming	File	Specify naming rule for Zone Alias of storage port as script.	-	See the following script example.

### File type property list

Table 26 vCenterConnection

Data nesting information		Description	Range
values			
	productName	Product name of registering to Web Service Connection	"vCenter"
	name	Name	-
	ipAddress	IP address	-
	port	Port	-
	protocol	Protocol	-



Data nesting information		Description	Range
	userID	User ID	-
	status	Status of connection	-
	connectedTime	Connected time	-

**Table 27 ConfigurationManagerConnection**

Data nesting information		Description	Range
values			
	productName	Product name of registering to Web Service Connection	"ConfigurationManager"
	name	Name	-
	ipAddress	IP address	-
	port	Port	-
	protocol	Protocol	-
	userID	User ID	-
	status	Status of connection	-
	connectedTime	Connected time	-

**Table 28 StorageSystem**

Data nesting information		Description	Range
values			
	storageDeviceId	Storage Device ID	-
	model	Model	-
	serialNumber	Serial Number	-
	svplp	SVP IP Address	-

**Table 29 ResourceGroup**

Data nesting information		Description	Range
values			

Data nesting information		Description	Range
	resourceGroupld	Resource Group ID	-
	resourceGroupName	Resource Group Name	-
	virtualStorageId	Virtual Storage System ID	-

Table 30 ResourceCriteria

Data nesting information		Description	Range
values			
	storagePortCriteria	Storage Port Criteria	-
	condition	Condition	-
	expressions	Expression	-
	name	Name	"Name"
	op	Operation	"Equals", "Not Equals", "Starts With", "Ends With"
	value	Value	-
	join	Join condition of the Expressions	"All", "Any"

Table 31 BNAConnections

Data nesting information		Description	Range
values			
	productName	Category	-
	name	Name	-
	ipAddress	IP address / Host Name	-
	port	Port	-
	protocol	Protocol	-
	userID	User ID	-
	status	Status	-
	connectedTime	Connected time	-

**Table 32 ScriptForHostGroupNaming**

Specifications of the script	Description
script	Function that is written in the syntax of ECMA Script 5. The following conditions of arguments and return must be satisfied.
arguments	<p>arguments[0]: The object with the following properties is passed as an argument.</p> <p>mold: The ID of the host</p> <p>(Managed Object ID in vCenter) name: The name of the host.</p> <p>clusterName: The name of the cluster to which the host belongs.</p> <p>clusterMold: The ID of the cluster to which the host belongs.</p> <p>(Managed Object ID in vCenter) ipAddresses: The IP addresses for management of the host.</p> <p>wwns: The WWNs of the host (: separated hex value)</p>
return	<p>Script must return the string that satisfies the following conditions:</p> <ol style="list-style-type: none"> <li>1. Available characters: Only alphanumeric characters and “ - ”</li> <li>2. The first character is alphabetic</li> <li>3. Host Group name is up to 64 characters</li> </ol>
example	<pre>function(host) { /** * Following attributes are available. * * - host.moId: string * The ID of the host (Managed Object ID in vCenter) * * - host.name: string * The name of the host. * * - host.clusterName: string * The name of the cluster to which the host belongs. * * - host.clusterMoId: string * The ID of the cluster to which the host belongs. * (Managed Object ID in vCenter) * * - host.ipAddresses: string * The IP addresses for management of the host. * * - host.wwns: [string] * The WWNs of the host (: separated hex value) */ var hostGroupName = host.name; if (!hostGroupName) { hostGroupName = "HostGroupForDataStore"; } return hostGroupName; }</pre>

**Table 33 ScriptForZoneNaming / ScriptForHostZoneAliasNaming / ScriptForStorageZoneAliasNaming**

Specifications of the script	Description
script	Function that is written in the syntax of ECMA Script 5. The following conditions of arguments and return must be satisfied.
arguments	<p>arguments[0]: The object with the following properties is passed as an argument.</p> <p>hostname: Host name</p> <p>hostPortWorldWideName: WWN of HBA. Separator notation is based on BNA.</p> <p>storagePortWorldWideName: WWN of CHA. Separator notation is based on BNA.</p> <p>storageSystemFamily: Display model name of the physical storage system</p> <p>storageSystemName: Name of physical storage system on Device Manager</p> <p>storageSystemSerialNumber: Serial number of physical storage system</p> <p>storagePortName: Display port name of the storage system</p> <p>virtualStorageArrayFamily: Display model name of virtual storage (if non-virtual, "-")</p> <p>virtualStorageSystemName: Name of virtual storage on Device Manager (if non-virtual, "-")</p> <p>virtualSerialNumber: Serial number of virtual storage (if non-virtual, "-")</p> <p>serviceProperties: List of the service properties passed to the plug-in</p>
return	<p>Script must return the string that satisfies the following conditions:</p> <ol style="list-style-type: none"> <li>1. Available characters: Only alphanumeric characters and "_"</li> <li>2. The first character is alphabetic</li> <li>3. Zone is up to 60 characters, Zone Alias is up to 64 characters</li> <li>4. About Zone, the string starting from "LSAN_", "TI_", "QOSHn+", "QOSMn+", "QOSLn_" is not allowed (case ignored. "n" is number.)</li> </ol>
example	<pre>(function(args) { var name; if(! args.virtualSerialNumber    args.virtualSerialNumber == "-"){ name = args.hostName + "_" + args.storageSystemName + "_" +</pre>

Specifications of the script	Description
	<pre>args.storagePortName; }else{ name = args.hostName + "_" + args.virtualStorageSystemName + "_" + args.storagePortName; } if (!(name === null    typeof(name) == "string"    name instanceof String)) { throw new Error("Zone name must be a string: "+ name); } name = name.replace(/^[A-Za-z0-9_]/g, '_'); if(name.length &gt; 60){ throw new Error("Zone name must be within 60 characters: "+ name); } if (/^[A-Z]/ i.test(name) == false) { throw new Error("Zone name must start with a alphabet: "+ name); } if (/^LSAN_/ i.test(name)    /^TI_/i.test(name)    /^QOS[HML][0-9]+_/ i.test(name)) { throw new Error("Zone name has the prefix LSAN_, TI_ or QOSxx_ cannot be for normal zone: "+name); } return name; })</pre>

## Add host to cluster in vCenter service (task details)

Use the following information to add Host to Cluster in vCenter Service.

keyName	Type	Description	Range
Ldevs	File	-	See the "File type property list" section following this table.
LunPaths	File	-	See the "File type property list" section following this table.
ZoneConfigurationCreationResult	File	-	See the "File type property list" section following this table.
ZoneCreationResult	File	-	See the "File type property list" section following this table.
ZoneAliasCreationResult	File	-	See the "File type property list" section following this table.
ZoneConfigurationUpdateResult	File	-	See the "File type property list" section following this table.
ZoneUpdateResult	File	-	See the "File type property list" section following this table.
ZoneAliasUpdateResult	File	-	See the "File type property list" section following this table.

## File type property list

Table 34 Ldevs

Data nesting information		Description	Range
value <sup>1</sup>			
	ldevId	LDEV ID	-
	virtualLdevId	Virtual LDEV ID	-
	label	Label	-
	byteFormatCapacity	Capacity	-
	blockCapacity	Block Capacity	-
	poolId	Pool ID	-
	resourceGroupId	Resource Group ID	-
	numOfPorts	No. of Ports	-
	numOfUsedBlock	No. of Used Blocks	-
	isFullAllocationEnabled	Full Allocation Enabled	-
	emulationType	Emulation Type	-
	clprId	CLPR ID	-
	mpBladeId	MP Blade ID	-
	dataReductionMode	Date Reduction Mode	-
	isAluaEnabled	ALUA Enabled	-
	status	Status	-
	ssid	SSID	-
	dataReductionStatus	Data Reduction Status	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 35 LunPaths

Data nesting information		Description	Range
values <sup>1</sup>			
	hostName	Host Name	-
	hostPortName	Host Port WWN	-

Data nesting information		Description	Range
	portWorldWideName	Storage Port WWN	-
	storageDeviceId	Storage Device ID	-
	portName	Storage Port Name	-
	lun	LUN	-
	portType	Port Type	-
	capacity	Capacity	-
	ldevId	LDEV ID	-
	hostGroupNameOrIscsiTarget	Host Group Name	-
	hostGroupNumber	Host Group Number	-
	hostMode	Host Mode	-
	hostModeOptions	Host Mode Options	-
	storageSystemModel	Storage System Model	-
	storageSystemSerialNumber	Storage System Serial No.	-
	ldevLabel	LDEV Label	-
	virtualStorageMachineResourceGroupName	Resource Group Name	-
	virtualLdevId	Virtual LDEV ID	-
	poolId	Pool ID	-
	asymmetricAccessStatus	Asymmetric Access State	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 36 ZoneConfigurationCreationResult

Data nesting information		Description	Range
values <sup>1</sup>			
	name	Name	-
	zoneNames	Zone Names	-
	bnaname	FOS_PrimarySwitch Name	-

Data nesting information		Description	Range
	fabricName	Fabric Name	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 37 ZoneCreationResult

Data nesting information		Description	Range
values <sup>1</sup>			
	name	Name	-
	displayNames	Type	-
	aliasNames	Alias Names	-
	memberNames	Member Names	-
	bnaname	FOS_PrimarySwitch Name	-
	fabricName	Fabric Name	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 38 ZoneAliasCreationResult

Data nesting information		Description	Range
values <sup>1</sup>			
	name	Name	-
	memberNames	Member Names	-
	bnaname	FOS_PrimarySwitch Name	-
	fabricName	Fabric Name	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 39 ZoneConfigurationUpdateResult

Data nesting information		Description	Range
values <sup>1</sup>			
	name	Name	-



Data nesting information		Description	Range
	zoneNames	Zone Names	-
	bnaname	FOS_PrimarySwitch Name	-
	fabricName	Fabric Name	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 40 ZoneUpdateResult

Data nesting information		Description	Range
values <sup>1</sup>			
	name	Name	-
	type	Type	-
	aliasNames	Alias Names	-
	memberNames	Member Names	-
	bnaname	FOS_PrimarySwitch Name	-
	fabricName	Fabric Name	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 41 ZoneAliasUpdateResult

Data nesting information		Description	Range
values <sup>1</sup>			
	name	Name	-
	memberNames	Member Names	-
	bnaname	FOS_PrimarySwitch Name	-
	fabricName	Fabric Name	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

## Allocate fabric aware volumes and create datastore for ESX cluster

Use the following properties to modify or create values for the allocate fabric aware volumes and create datastore for ESX cluster.

### Allocate fabric aware volumes and create datastore for ESX cluster (edit)

keyName	Type	Description	Range	Default value
vCenterConnection	File	Specify a vCenter connection.	See Following File type property list.	-
ESXCluster	File	Specify an ESX Cluster.	See Following File type property list.	-
performLIPReset	Boolean	Perform an LIP Reset on the ESX host. If LIP Reset is enabled, you must register agentless remote connection settings for each ESX Server.	true / false	false
esxPromptPattern	String	Specifies the command prompt pattern to use when running <code>esxccli</code> on the ESX server. You do not need to specify this if "Perform LIP Reset" is disabled.	-	^[^\]]*\]
ConfigurationManagerConnection	File	Gives a table in which you can choose the Configuration Manager connection.	See Following File type property list.	-

keyName	Type	Description	Range	Default value
StorageSystem	File	Gives a table in which you can choose the storage system.	See Following File type property list.	-
ResourceGroup	File	Specify a resource group.	See Following File type property list.	-
VirtualModel	String	Select a Virtual Model associated with VSM. This is needed when allocating volumes to VSM.	<p>"R900": If the virtual model is "VSP 5200, 5600", "VSP 5200H, 5600H", "VSP 5100, 5500", "VSP5100H, 5500H".</p> <p>"R800": If the virtual model is "VSP G1000/ G1500 and VSP F1500".</p> <p>"RH20K_M2": If the virtual model is "VSP One B28", "VSP One B26", "VSP One B24".</p> <p>"RH10K_MH4" : If the virtual model is "VSP E1090", "VSP E1090H".</p>	-

keyName	Type	Description	Range	Default value
			<p>"HM850": If the virtual model is "VSP E990", "VSP E790H", "VSP E790", "VSP E590H", "VSP E590", "VSP F900", "VSP F700", "VSP F370", "VSP F350", "VSP G900", "VSP G700", "VSP G370", "VSP G350".</p> <p>"HM800": If the virtual model is "VSP G800 and VSP F800", "VSP G400/G600 and VSP F400/F600", "VSP G100/G200"</p>	
VirtualSerialNumber	String	Specify the Virtual Serial Number if the selected resource group is VSM.	-	-
PortSelection	String	Select the storage port selection condition. "Smaller number of hosts": Select the port with the smallest registered WWN. (Default value) "Smaller number of volumes: Select the port with the smallest registered LUN.	"HOST" or "VOLUME"	"HOST"

keyName	Type	Description	Range	Default value
ResourceCriteria	File	Specify the Storage Port Configuration Expressions (Name and Value) that meets the specified criteria (Equals, Not Equals, Starts with, and Ends with) based on the selected condition (All or Any).	See Following File type property list.	{ "storagePortCriteria": { "condition": { "expressions": [], "join": "All" } } }
VolumeSettings	File	Specify the volume information to use when creating volumes.	See Following File type property list.	-
CapacitySavingFunction	String	Specify the Capacity Saving Function for target volumes.  Refer to your storage system product documentation for the optimal setting.	"None", "Compression", "Deduplication and Compression"	None
CapacitySavingMode	String	Specify the Capacity Saving Mode for target volumes.  Refer to your storage system product documentation for the optimal setting.	"Inline mode", "Post-process mode"	Post-process mode
ScriptForHostGroupNaming	File	Specify a naming rule for the Host Group name as a script.	-	See the following script example

keyName	Type	Description	Range	Default value
HostMode	String	Specify the Host Mode.	See the Provisioning Guide for your storage system for details about the host mode.	VMWARE_EX
HostModeOptions	String	Specify the Host Mode Options.	See the Provisioning Guide for your storage system for details about the host mode options.	[]
BNAConnections	File	Specify the connection for the FOS_PrimarySwitch defined in the Web Service Connections on the Administration tab. If this value is omitted, the system uses all connections that are defined for the product name listed in the Web Service Connections.	See Following File type property list.	-
TargetFabrics	String	Specify target fabrics.	-	-
UseExistingZone	Boolean	Specify whether to use an existing zone.	true / false	false
UseActiveZoneOnly	Boolean	Specify whether to use active zones only.	true / false	true
NumOfHopsRestriction	Boolean	Specify whether to enable Num. of Hops Restriction.	true / false	false

keyName	Type	Description	Range	Default value
UpdateZoneConfiguration	Boolean	Determines whether to add to an existing zone or create a new zone. If Use Existing Zone is true, this setting is ignored even if entered.	true / false	true
UseExistingZoneAliases	Boolean	Determines whether to use existing zone aliases. Specify True to use predefined zone aliases regardless of the specified naming conventions. If you specify False, the system selects zone aliases that follow the naming conventions. In either case, if there are no existing zone aliases, the system creates new ones that follow the naming conventions. When selecting the existing Zone Alias, Zone naming is fixed as HostZoneAliasName_StorageZoneAliasName.	true / false	false
UpdateCurrentActiveZone Configuration	Boolean	Determines whether to use Zone Active configuration when adding or creating a zone.	true / false	true

keyName	Type	Description	Range	Default value
ZoneConfigurationsToUpdate	String	Lists the zone configuration names to add (separated by commas). If Update Zone Configuration is false, this setting is ignored.	-	-
IntervalForEachFabricSettings	Integer	Specify the wait time between configuring each fabric (min).	-	0
ScriptForZoneNaming	File	Specify the naming for the zone as script.	-	See the following script example
ScriptForHostZoneAliasNaming	File	Specify the naming for the Zone Alias of the host WWN as script.	-	See the following script example
ScriptForStorageZoneAliasNaming	File	Specify the naming rule for the Zone Alias of the storage port as script.	-	See the following script example
DatastoreCluster	String	Specify a Datastore Cluster in which to add created DataStores.	-	-
DatastoreNamePrefix	String	Specify a prefix for the datastores.	-	-
VMFSVersion	String	Specify the VMFS version for the datastore.	5 / 6	6
BlockSize	String	Specify the block size for the datastore.	1	1
StorageIOControl	Boolean	Specify whether to enable storage I/O control for the datastore.	true / false	false



keyName	Type	Description	Range	Default value
ThresholdType	String	Specify the type of threshold; Latency Threshold or Throughput Threshold.	"Latency Threshold", "Throughput Threshold"	Latency Threshold
ThresholdValue	Integer	If you enable storage I/O control, specify the latency threshold.	5-100	30
toAddress	String	Specify the To email addresses. Use a comma to separate multiple addresses.	-	-
ccAddress	String	Specify the Cc email addresses. Use a comma to separate multiple addresses.	-	-
mailSubject	String	Specify the email subject.	-	"ESX servers need to recognize newly added volumes"

keyName	Type	Description	Range	Default value
mailBody	String	Specify the email body.	-	"ESX servers don't recognize the newly added volumes. Make sure to let ESX servers to recognize them by resetting HBA or rebooting server, then click "Proceed" button."

keyName	Type	Description	Range	Default value
dialogText	File	Specify HTML or text in the Response Entry dialog box. To change a service property value in the Response Entry dialog box, specify the property key for the 'name' attribute of an input tag (<input>) or a select tag (<select>).	-	"ESX servers don't recognize the newly added volumes. Make sure to let ESX servers to recognize them by resetting HBA or rebooting server, then click "Proceed" button."

**File type property list**

**Table 42 vCenterConnection**

Data nesting information		Description	Range
values			
	productName	Product name to register when creating a Web Service Connection.	"vCenter"
	name	Name.	-
	ipAddress	IP address.	-
	port	Port.	-
	protocol	Protocol.	-
	userID	User ID.	-
	status	Status of the connection.	-

Data nesting information		Description	Range
	connectedTime	Connected time.	-

**Table 43 ESXCluster**

Data nesting information		Description	Range
values			
	storageDeviceId	Storage Device ID.	-
	model	Model.	-
	serialNumber	Serial Number.	-
	svplp	SVP IP Address.	-

**Table 44 ConfigurationManagerConnection**

Data nesting information		Description	Range
values			
	productName	Product name to register when creating a Web Service Connection	"ConfigurationManager"
	name	Name.	-
	ipAddress	IP address.	-
	port	Port.	-
	protocol	Protocol.	-
	userID	User ID.	-
	status	Status of the connection.	-
	connectedTime	Connected time.	-

**Table 45 StorageSystem**

Data nesting information		Description	Range
values			
	storageDeviceId	Storage Device ID.	-

Data nesting information		Description	Range
	model	Model.	-
	serialNumber	Serial Number.	-
	svplp	SVP IP Address.	-

**Table 46 ResourceGroup**

Data nesting information		Description	Range
values			
	resourceGroupId	Resource Group ID.	-
	resourceGroupName	Resource Group Name.	-
	virtualStorageId	Virtual Storage System ID.	-

**Table 47 ResourceCriteria**

Data nesting information		Description	Range
values			
	storagePortCriteria	Storage Port Criteria.	-
	condition	Condition.	-
	expressions	Expression.	-
	name	Name.	"Name".
	op	Operation.	"Equals", "Not Equals", "Starts With", "Ends With".
	value	Value.	-
	join	Join condition of the Expressions.	"All", "Any".

**Table 48 VolumeSettings**

Data nesting information	Description	Range
values		

Data nesting information		Description	Range
	numberOfVolumes	Number of Volumes	
	ldevIdStartsFrom	LDEV ID starts from	0-16777215
	volumeCapacity	Volume Capacity	2048-
	pool		
	poolID	Pool ID	
	poolName	Pool Name	
	poolType	Pool Type	
	usedCapacityRate	Used Capacity Rate(%)	
	availableVolumeCapacity	Available Capacity	
	totalPoolCapacity	Total Capacity	
	numOfLdevs	Number of Volumes	
	volumeLabel	Volume Label	^[A-Za-z0-9\\.:@_][A-Za-z0-9\\-\\.\\.:@_]*\$
	lunStartsFrom	LUN starts from	0-2048
	virtualLdevIdStartsFrom	Virtual LDEV ID starts from	0-65279

**Table 49 BNAConnections**

Data nesting information		Description	Range
values			
	productName	Category.	-
	name	Name.	-
	ipAddress	IP address / Host Name.	-
	port	Port.	-
	protocol	Protocol.	-
	userID	User ID.	-
	status	Status.	-

Data nesting information		Description	Range
	connectedTime	Connected time.	-

**Table 50 ScriptForHostGroupNaming**

Specifications of the script	Description
script	Function that is written in the syntax of ECMA Script 5. The following conditions of arguments and return values must be satisfied.
arguments	arguments[0]: The object with the following properties is passed as an argument.  mold: The ID of the host  (Managed Object ID in vCenter) name: The name of the host.  clusterName: The name of the cluster to which the host belongs.  clusterMold: The ID of the cluster to which the host belongs.  (Managed Object ID in vCenter) ipAddresses: The IP addresses for management of the host.  wwns: The WWNs of the host (: separated hex value)
return	Script must return the string that satisfies the following conditions: <ol style="list-style-type: none"> <li>1. Available characters: Only alphanumeric characters and “_”</li> <li>2. The first character is alphabetic</li> <li>3. Host Group name is up to 64 characters</li> </ol>
example	<pre>function(host) { /** * Following attributes are available. * * - host.moId: string * The ID of the host (Managed Object ID in vCenter) * * - host.name: string * The name of the host. * * - host.clusterName: string * The name of the cluster to which the host belongs. * * - host.clusterMoId: string * The ID of the cluster to which the host belongs. * (Managed Object ID in vCenter) * * - host.ipAddresses: string * The IP addresses for management of the host. * * - host.wwns: [string] * The WWNs of the host (: separated hex value) * */ var hostGroupName = host.name; if (!hostGroupName) { hostGroupName = "HostGroupForDataStore"; } return hostGroupName; }</pre>

**Table 51 ScriptForZoneNaming / ScriptForHostZoneAliasNaming / ScriptForStorageZoneAliasNaming**

Specifications of the script	Description
script	Function that is written in the syntax of ECMA Script 5. The following conditions of arguments and return values must be satisfied.
arguments	<p>arguments[0]: The object with the following properties is passed as an argument.</p> <p>hostname: Host name</p> <p>hostPortWorldWideName: WWN of HBA. Separator notation is based on BNA.</p> <p>storagePortWorldWideName: WWN of CHA. Separator notation is based on BNA.</p> <p>storageSystemFamily: Display model name of the physical storage system</p> <p>storageSystemName: Name of physical storage system on Device Manager</p> <p>storageSystemSerialNumber: Serial number of physical storage system</p> <p>storagePortName: Display port name of the storage system</p> <p>virtualStorageArrayFamily: Display model name of virtual storage (if non-virtual, "-")</p> <p>virtualStorageSystemName: Name of virtual storage on Device Manager (if non-virtual, "-")</p> <p>virtualSerialNumber: Serial number of virtual storage (if non-virtual, "-")</p> <p>serviceProperties: List of the service properties passed to the plug-in</p>
return	<p>Script must return the string that satisfies the following conditions:</p> <ol style="list-style-type: none"> <li>1. Available characters: Only alphanumeric characters and "_"</li> <li>2. The first character is alphabetic</li> <li>3. Zone is up to 60 characters, Zone Alias is up to 64 characters</li> <li>4. About Zone, the string starting from "LSAN_", "TI_", "QOSHn+_ ", "QOSMn+_ ", "QOSLn_" is not allowed (case ignored. "n" is number.)</li> </ol>
example	<pre>(function(args) { var name; if(! args.virtualSerialNumber    args.virtualSerialNumber == "-"){ name = args.hostName + "_" + args.storageSystemName + "_" + args.storagePortName; }else{ name = args.hostName + "_" + args.virtualStorageSystemName + "_" + args.storagePortName; } if (!(name === null    typeof(name) == "string"    name</pre>



Specifications of the script	Description
	<pre>instanceof String)) { throw new Error("Zone name must be a string: "+ name); } name = name.replace(/^[^A-Za-z0-9_]/g, '_'); if(name.length &gt; 60){ throw new Error("Zone name must be within 60 characters: "+ name); } if (/^[A-Z]/i.test(name) == false) { throw new Error("Zone name must start with a alphabet: "+ name); } if (/^LSAN_/i.test(name)    /^TI_/ i.test(name)    /^QOS[HML][0-9]+_/i.test(name)) { throw new Error("Zone name has the prefix LSAN_, TI_ or QOSxx_ cannot be for normal zone: "+name); } return name; })</pre>

## Allocate fabric aware volumes and create datastore for ESX cluster (submit)

keyName	Type	Description	Range	Default value
vCenterConnection	File	Specify a vCenter connection.	See Following File type property list.	-
ESXCluster	File	Specify an ESX Cluster.	See Following File type property list.	-
ConfigurationManager Connection	File	Gives a table in which you can choose the Configuration Manager connection.	See Following File type property list.	-
StorageSystem	File	Gives a table in which you can choose the storage system.	See Following File type property list.	-
ResourceGroup	File	Specify a resource group.	See Following File type property list.	-

keyName	Type	Description	Range	Default value
VirtualModel	String	Select a Virtual Model associated with VSM. This is needed when allocating volumes to VSM.	<p>"R900": If the virtual model is "VSP 5200, 5600", "VSP 5200H, 5600H", "VSP 5100, 5500", "VSP5100H, 5500H".</p> <p>"R800": If the virtual model is "VSP G1000/ G1500 and VSP F1500".</p> <p>"RH20K_M2": If the virtual model is "VSP One B28", "VSP One B26", "VSP One B24".</p> <p>"RH10K_M H4": If the virtual model is "VSP E1090", "VSP E1090H".</p>	-

keyName	Type	Description	Range	Default value
			<p>"HM850": If the virtual model is "VSP E990", "VSP E790H", "VSP E790", "VSP E590H", "VSP E590", "VSP F900", "VSP F700", "VSP F370", "VSP F350", "VSP G900", "VSP G700", "VSP G370", "VSP G350".</p> <p>"HM800": If the virtual model is "VSP G800 and VSP F800", "VSP G400/G600 and VSP F400/ F600", "VSP G100/G200"</p>	
VirtualSerialNumber	String	Specify the Virtual Serial Number if the selected resource group is VSM.	-	-
PortSelection	String	Select the storage port selection condition. "Smaller number of hosts": Select the port with the smallest registered WWN. (Default value) "Smaller number of volumes: Select the port with the smallest registered LUN.	"HOST" or "VOLUME"	"HOST"

keyName	Type	Description	Range	Default value
ResourceCriteria	File	Specify the Storage Port Configuration Expressions (Name and Value) that meets the specified criteria (Equals, Not Equals, Starts with, and Ends with) based on the selected condition (All or Any).	See Following File type property list.	{"storagePort Criteria": {"condition": {"expressions": : [], "join": "All"}}
VolumeSettings	File	Specify the volume information to use when creating volumes.	See Following File type property list.	-
CapacitySavingFunction	String	Specify the Capacity Saving Function for target volumes.  Refer to your storage system product documentation for the optimal setting.	"None", "Compression", "Deduplication and Compression"	None
CapacitySavingMode	String	Specify the Capacity Saving Mode for target volumes.  Refer to your storage system product documentation for the optimal setting.	"Inline mode", "Post-process mode"	Post-process mode
ScriptForHostGroupNaming	File	Specify a naming rule for the Host Group name as a script.	-	See the following script example
HostMode	String	Specify the Host Mode.	See the Provisioning Guide for your storage system for details about the host mode.	VMWARE_EX

keyName	Type	Description	Range	Default value
HostModeOptions	String	Specify the Host Mode Options.	See the Provisioning Guide for your storage system for details about the host mode option.	[]
BNAConnections	File	Specify the connection for the FOS_PrimarySwitch defined in the Web Service Connections on the Administration tab. If this value is omitted, the system uses all connections that are defined for the product name listed in the Web Service Connections.	See Following File type property list.	-
TargetFabrics	String	Specify target fabrics.	-	-
UseExistingZone	Boolean	Specify whether to use an existing zone.	true / false	false
UseActiveZoneOnly	Boolean	Specify whether to use active zones only.	true / false	true
NumOfHopsRestriction	Boolean	Specify whether to enable Num. of Hops Restriction.	true / false	false
UpdateZoneConfiguration	Boolean	Determines whether to add to an existing zone or create a new zone. If Use Existing Zone is true, this setting is ignored even if entered.	true / false	true

keyName	Type	Description	Range	Default value
UseExistingZoneAliases	Boolean	Determines whether to use existing zone aliases. Specify True to use predefined zone aliases regardless of the specified naming conventions. If you specify False, the system selects zone aliases that follow the naming conventions. In either case, if there are no existing zone aliases, the system creates new ones that follow the naming conventions. When selecting the existing Zone Alias, Zone naming is fixed as HostZoneAliasName_StorageZoneAliasName.	true / false	false
UpdateCurrentActiveZoneConfiguration	Boolean	Determines whether to use Zone Active configuration when adding or creating a zone.	true / false	true
ZoneConfigurationsToUpdate	String	Lists the zone configuration names to add (separated by commas). If Update Zone Configuration is false, this setting is ignored.	-	-
IntervalForEachFabricSettings	Integer	Specify the wait time between configuring each fabric (min).	-	0
ScriptForZoneNaming	File	Specify the naming for the zone as script.	-	See the following script example
ScriptForHostZoneAliasNaming	File	Specify the naming for the Zone Alias of the host WWN as script.	-	See the following script example

keyName	Type	Description	Range	Default value
ScriptForStorageZoneAliasNaming	File	Specify the naming rule for the Zone Alias of the storage port as script.	-	See the following script example
DatastoreCluster	String	Specify a Datastore Cluster in which to add created DataStores.	-	-
DatastoreNamePrefix	String	Specify a prefix for the datastores.	-	-
VMFSVersion	String	Specify the VMFS version for the datastore.	5 / 6	6
BlockSize	String	Specify the block size for the datastore.	1	1
StorageIOControl	Boolean	Specify whether to enable storage I/O control for the datastore.	true / false	false
ThresholdType	String	Specify the type of threshold; Latency Threshold or Throughput Threshold.	"Latency Threshold", "Throughput Threshold"	Latency Threshold
ThresholdValue	Integer	If you enable storage I/O control, specify the latency threshold.	5-100	30
toAddress	String	Specify the To email addresses. Use a comma to separate multiple addresses.	-	-
ccAddress	String	Specify the Cc email addresses. Use a comma to separate multiple addresses.	-	-

keyName	Type	Description	Range	Default value
mailSubject	String	Specify the email subject.	-	"ESX servers need to recognize newly added volumes"
mailBody	String	Specify the email body.	-	"ESX servers don't recognize the newly added volumes. Make sure to let ESX servers to recognize them by resetting HBA or rebooting server, then click "Proceed" button."



keyName	Type	Description	Range	Default value
dialogText	File	Specify HTML or text in the Response Entry dialog box. To change a service property value in the Response Entry dialog box, specify the property key for the 'name' attribute of an input tag (<input>) or a select tag (<select>).	-	"ESX servers don't recognize the newly added volumes. Make sure to let ESX servers to recognize them by resetting HBA or rebooting server, then click "Proceed" button."

**File type property list**

**Table 52 vCenterConnection**

Data nesting information		Description	Range
values			
	productName	Product name to register when creating a Web Service Connection.	"vCenter"
	name	Name.	-
	ipAddress	IP address.	-
	port	Port.	-

Data nesting information		Description	Range
	protocol	Protocol.	-
	userID	User ID.	-
	status	Status of the connection.	-
	connectedTime	Connected time.	-

**Table 53 ESXCluster**

Data nesting information		Description	Range
values			
	storageDeviceId	Storage Device ID.	-
	model	Model.	-
	serialNumber	Serial Number.	-
	svplp	SVP IP Address.	-

**Table 54 ConfigurationManagerConnection**

Data nesting information		Description	Range
values			
	productName	Product name to register when creating a Web Service Connection	"ConfigurationManager"
	name	Name.	-
	ipAddress	IP address.	-
	port	Port.	-
	protocol	Protocol.	-
	userID	User ID.	-
	status	Status of the connection.	-
	connectedTime	Connected time.	-

**Table 55 StorageSystem**

Data nesting information		Description	Range
values			
	storageDeviceId	Storage Device ID.	-
	model	Model.	-
	serialNumber	Serial Number.	-
	svplp	SVP IP Address.	-

**Table 56 ResourceGroup**

Data nesting information		Description	Range
values			
	resourceGroupId	Resource Group ID.	-
	resourceGroupName	Resource Group Name.	-
	virtualStorageId	Virtual Storage System ID.	-

**Table 57 ResourceCriteria**

Data nesting information		Description	Range
values			
	storagePortCriteria	Storage Port Criteria.	-
	condition	Condition.	-
	expressions	Expression.	-
	name	Name.	"Name".
	op	Operation.	"Equals", "Not Equals", "Starts With", "Ends With".
	value	Value.	-
	join	Join condition of the Expressions.	"All", "Any".

**Table 58 VolumeSettings**

Data nesting information		Description	Range
values			
numberOfVolumes		Number of Volumes	
ldevIdStartsFrom		LDEV ID starts from	0-16777215
volumeCapacity		Volume Capacity	2048-
pool			
poolID		Pool ID	
poolName		Pool Name	
poolType		Pool Type	
usedCapacityRate		Used Capacity Rate(%)	
availableVolumeCapacity		Available Capacity	
totalPoolCapacity		Total Capacity	
numOfLdevs		Number of Volumes	
volumeLabel		Volume Label	^[A-Za-z0-9\.\:\@\_][A-Za-z0-9\.\:\@\_]*\$
lunStartsFrom		LUN starts from	0-2048
virtualLdevIdStartsFrom		Virtual LDEV ID starts from	0-65279

**Table 59 BNACConnections**

Data nesting information		Description	Range
values			
productName		Category.	-
name		Name.	-
ipAddress		IP address / Host Name.	-
port		Port.	-
protocol		Protocol.	-

Data nesting information		Description	Range
	userID	User ID.	-
	status	Status.	-
	connectedTime	Connected time.	-

**Table 60 ScriptForHostGroupNaming**

Specifications of the script	Description
script	Function that is written in the syntax of ECMA Script 5. The following conditions of arguments and return values must be satisfied.
arguments	arguments[0]: The object with the following properties is passed as an argument. mold: The ID of the host (Managed Object ID in vCenter) name: The name of the host. clusterName: The name of the cluster to which the host belongs. clusterMold: The ID of the cluster to which the host belongs. (Managed Object ID in vCenter) ipAddresses: The IP addresses for management of the host. wwns: The WWNs of the host (: separated hex value)
return	Script must return the string that satisfies the following conditions: <ol style="list-style-type: none"> <li>1. Available characters: Only alphanumeric characters and “_”</li> <li>2. The first character is alphabetic</li> <li>3. Host Group name is up to 64 characters</li> </ol>
example	<pre>function(host) { /** * Following attributes are available. * * - host.moId: string * The ID of the host (Managed Object ID in vCenter) * * - host.name: string * The name of the host. * * - host.clusterName: string * The name of the cluster to which the host belongs. * * - host.clusterMoId: string * The ID of the cluster to which the host belongs. * (Managed Object ID in vCenter) * * - host.ipAddresses: string * The IP addresses for management of the host. * * - host.wwns: [string] * The WWNs of the host (: separated hex value) */ var hostGroupName = host.name; if (!hostGroupName) { hostGroupName = "HostGroupForDataStore"; } return hostGroupName; }</pre>

**Table 61 ScriptForZoneNaming / ScriptForHostZoneAliasNaming / ScriptForStorageZoneAliasNaming**

Specifications of the script	Description
script	Function that is written in the syntax of ECMA Script 5. The following conditions of arguments and return values must be satisfied.
arguments	<p>arguments[0]: The object with the following properties is passed as an argument.</p> <p>hostname: Host name</p> <p>hostPortWorldWideName: WWN of HBA. Separator notation is based on BNA.</p> <p>storagePortWorldWideName: WWN of CHA. Separator notation is based on BNA.</p> <p>storageSystemFamily: Display model name of the physical storage system</p> <p>storageSystemName: Name of physical storage system on Device Manager</p> <p>storageSystemSerialNumber: Serial number of physical storage system</p> <p>storagePortName: Display port name of the storage system</p> <p>virtualStorageArrayFamily: Display model name of virtual storage (if non-virtual, "-")</p> <p>virtualStorageSystemName: Name of virtual storage on Device Manager (if non-virtual, "-")</p> <p>virtualSerialNumber: Serial number of virtual storage (if non-virtual, "-")</p> <p>serviceProperties: List of the service properties passed to the plug-in</p>
return	<p>Script must return the string that satisfies the following conditions:</p> <ol style="list-style-type: none"> <li>1. Available characters: Only alphanumeric characters and "_"</li> <li>2. The first character is alphabetic</li> <li>3. Zone is up to 60 characters, Zone Alias is up to 64 characters</li> <li>4. About Zone, the string starting from "LSAN_", "TI_", "QOSHn+_ ", "QOSMn+_ ", "QOSLn_" is not allowed (case ignored. "n" is number.)</li> </ol>
example	<pre>(function(args) { var name; if(! args.virtualSerialNumber    args.virtualSerialNumber =="-"){ name = args.hostName + "_" +</pre>

Specifications of the script	Description
	<pre> args.storageSystemName + "_" + args.storagePortName; }else{ name = args.hostName +  "_" + args.virtualStorageSystemName + "_" + args.storagePortName; } if (!(name === null    typeof(name) == "string"    name instanceof String)) { throw new Error("Zone name must be a string: "+ name); } name = name.replace(/^[A-Za-z0-9_]/g, '_'); if(name.length &gt; 60){ throw new Error("Zone name must be within 60 characters: "+ name); } if (/^[A-Z]/ i.test(name) == false) { throw new Error("Zone name must start with a alphabet: "+ name); } if (/^LSAN_/ i.test(name)    /^TI_/i.test(name)    /^QOS[HML][0- 9]+_/i.test(name)) { throw new Error("Zone name has the prefix LSAN_, TI_ or QOSxx_ cannot be for normal zone: "+name); } return name; }) </pre>

## Allocate fabric aware volumes and create datastore for ESX cluster (task details)

Use the following information to show the task details to allocate fabric aware volumes and to create datastore for ESX cluster.

keyName	Type	Description	Range
Ldevs	File		See the "File type property list" section following this table.
LunPaths	File		See the "File type property list" section following this table.
Datastores	File		See the "File type property list" section following this table.
ZoneConfigurationCreationResult	File		See the "File type property list" section following this table.
ZoneCreationResult	File		See the "File type property list" section following this table.
ZoneAliasCreationResult	File		See the "File type property list" section following this table.
ZoneConfigurationUpdateResult	File		See the "File type property list" section following this table.

keyName	Type	Description	Range
ZoneUpdateResult	File		See the "File type property list" section following this table.
ZoneAliasUpdateResult	File		See the "File type property list" section following this table.

**File type property list**

**Table 62 Ldevs**

Data nesting information	Description	Range
value <sup>1</sup>		
ldevId	LDEV ID	-
virtualLdevId	Virtual LDEV ID	-
label	Label	-
byteFormatCapacity	Capacity	-
blockCapacity	Block Capacity	-
poolId	Pool ID	-
resourceGroupId	Resource Group ID	-
numOfPorts	No. of Ports	-
numOfUsedBlock	No. of Used Blocks	-
isFullAllocationEnabled	Full Allocation Enabled	-
emulationType	Emulation Type	-
clprId	CLPR ID	-
mpBladeId	MP Blade ID	-
dataReductionMode	Date Reduction Mode	-
isAluaEnabled	ALUA Enabled	-
status	Status	-
ssid	SSID	-
dataReductionStatus	Data Reduction Status	-
<p><b>1.</b> Repeatable. Repeatable items must be repeated and must include all lower layer tags.</p>		



**Table 63 LunPaths**

Data nesting information		Description	Range
values <sup>1</sup>			
	hostName	Host Name	-
	hostPortName	Host Port WWN	-
	portWorldWideName	Storage Port WWN	-
	storageDeviceId	Storage Device ID	-
	portName	Storage Port Name	-
	lun	LUN	-
	portType	Port Type	-
	capacity	Capacity	-
	ldevId	LDEV ID	-
	hostGroupNameOrIScsiTarget	Host Group Name	-
	hostGroupNumber	Host Group Number	-
	hostMode	Host Mode	-
	hostModeOptions	Host Mode Options	-
	storageSystemModel	Storage System Model	-
	storageSystemSerialNumber	Storage System Serial No.	-
	ldevLabel	LDEV Label	-
	virtualStorageMachineResource GroupName	Resource Group Name	-
	virtualLdevId	Virtual LDEV ID	-
	poolId	Pool ID	-
	asymmetricAccessStatus	Asymmetric Access State	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

**Table 64 Datastores**

Data nesting information		Description	Range
values <sup>1</sup>			

Data nesting information		Description	Range
	datastoreName	Datastore Name	-
	canonicalName	Canonical Name	-
	datastoreAccessMode	Access Mode	-
	storageIOControlEnabled	I/O Control Enabled	-
	vmfsVersion	VMFS Version	-
	latencyThreshold	Latency Threshold	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

**Table 65 ZoneConfigurationCreationResult**

Data nesting information		Description	Range
values <sup>1</sup>			
	name	Name	-
	zoneNames	Zone Names	-
	bnaname	FOS_PrimarySwitch Name	-
	fabricName	Fabric Name	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

**Table 66 ZoneCreationResult**

Data nesting information		Description	Range
values <sup>1</sup>			
	name	Name	-
	displayNames	Type	-
	aliasNames	Alias Names	-
	memberNames	Member Names	-
	bnaname	FOS_PrimarySwitch Name	-
	fabricName	Fabric Name	-

Data nesting information	Description	Range
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.		

**Table 67 ZoneAliasCreationResult**

Data nesting information	Description	Range
values <sup>1</sup>		
name	Name	-
memberNames	Member Names	-
bnaname	FOS_PrimarySwitch Name	-
fabricName	Fabric Name	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.		

**Table 68 ZoneConfigurationUpdateResult**

Data nesting information	Description	Range
values <sup>1</sup>		
name	Name	-
zoneNames	Zone Names	-
bnaname	FOS_PrimarySwitch Name	-
fabricName	Fabric Name	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.		

**Table 69 ZoneUpdateResult**

Data nesting information	Description	Range
values <sup>1</sup>		
name	Name	-
type	Type	-
aliasNames	Alias Names	-
memberNames	Member Names	-

Data nesting information		Description	Range
	bnaname	FOS_PrimarySwitch Name	-
	fabricName	Fabric Name	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

**Table 70 ZoneAliasUpdateResult**

Data nesting information		Description	Range
values <sup>1</sup>			
	name	Name	-
	memberNames	Member Names	-
	bnaname	FOS_PrimarySwitch Name	-
	fabricName	Fabric Name	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

## Allocate fabric aware volumes with Configuration Manager service properties

Use the following properties to modify or create values for the Allocate fabric aware volumes with Configuration Manager service.

### Allocate fabric aware volumes with Configuration Manager (edit)

keyName	Type	Description	Range	Default value
ConfigurationManagerCon nection	File	Specify the Configuration Manager Connection.	See the following File type property list.	-
StorageSystem	File	Specify the Storage System.	See the following File type property list.	-

keyName	Type	Description	Range	Default value
ResourceGroup	File	Specify the Resource Group.	See the following File type property list.	-
Pool	File	Specify the pool.	See the following File type property list.	-
CapacityFormat	String	Specify the volume capacity format as Byte or Block	"Byte" or "Block"	"Byte"

keyName	Type	Description	Range	Default value
VolumeSettings	File	Specify the parameters required to create new volumes.	See the following File type property list.	<pre>[{"volumeUsage":"OS","numberOfVolumes":1,"ldevIdStartsFrom":0,"volumeCapacityInMiB":153600,"blockCapacity":"314572800","volumeLabel":"","lunStartsFrom":0,"virtualLdevIdStartsFrom":0}, {"volumeUsage":"App","numberOfVolumes":1,"ldevIdStartsFrom":0,"volumeCapacityInMiB":204800,"blockCapacity":"419430400","volumeLabel":"","lunStartsFrom":0,"virtualLdevIdStartsFrom":0}, {"volumeUsage":"Data","numberOfVolumes":1,"ldevIdStartsFrom":0,"volumeCapacityInMiB":460800,"blockCapacity":"943718400","volumeLabel":"","lunStartsFrom":0,"virtualLdevId</pre>

keyName	Type	Description	Range	Default value
				StartsFrom": 0}]
CapacitySavingFunction	String	Specify the Capacity Saving Function for target volumes.  Refer to your storage system product documentation for the optimal setting.	"None", "Compression", "Deduplication and Compression"	None
CapacitySavingMode	String	Specify the Capacity Saving Mode for target volumes.  Refer to your storage system product documentation for the optimal setting.	"Inline mode", "Post-process mode"	Post-process mode
ResourceCriteria	File	Specify the resource criteria.	See the following File type property list.	-
PortType	String	Specify the port type as Fibre or iSCSI.	"Fibre" or "iSCSI"	"Fibre"
HostGroupSettings	File	Specify the parameters that are needed to create a new Host Group/ iSCIS Target.	See the following File type property list.	-
provisioning.fabricSetting.enabled	Boolean	Specifying True enables fabric information collection functionality.	-	true

keyName	Type	Description	Range	Default value
fabricConnectionType	string	Specify the fabric type, either FOS_PrimarySwitch or DCNM to filter the Category in Connections.	FOS_PrimarySwitch, DCNM	FOS_PrimarySwitch
provisioning.fabricSettings.connections	file	Specify the connection defined in the Web Service Connections on the Administration Tab. If this value is omitted, the system uses all connections that are defined for the product name listed in the Web Service Connections.	See the following File type property list.	-
provisioning.fabricSetting.fabrics	String	Specify the fabric name. Separate multiple values by commas. If omitted, all fabrics defined as FOS_PrimarySwitch or DCNM in Connections will be used.	-	-



keyName	Type	Description	Range	Default value
provisioning.fabricSetting.usingExistingZone	Boolean	Specifies whether to select a predefined zone or any connectable path. If you specify True, the system selects paths within the range of the existing Zone setting. If you specify False, the system selects connectable paths regardless of the existing Zone setting.	-	true
provisioning.fabricSetting.hosts.restriction	Boolean	Determines whether the service will fail if there is no path that matches the specified collection range.	-	false
provisioning.fabricSetting.hosts.range	Integer	When using the Host Restriction option, specify the collection range by the number of hops.	0	0
provisioning.zoneSetting.enabled	Boolean	Specify True to enable the modify zone settings functionality.	-	true

keyName	Type	Description	Range	Default value
provisioning.zoneSetting.useExistingZoneAliases	Boolean	Specify True to use predefined Zone Aliases regardless of the naming conventions the user specifies. If you specify False, the system selects Zone Aliases that follow the naming conventions. In either case, if there are no existing Zone Aliases, the system creates new Zone Aliases that follow the naming conventions.	-	false
provisioning.zoneSetting.updateActiveZoneConfiguration	Boolean	Specify True to add a Zone to the active Zone Configuration.	-	true
provisioning.zoneSetting.zoneConfigurationName	String	To add a zone to a Zone Configuration other than the active configuration, specify the name of the Zone Configuration in which to add the zone.	-	-

keyName	Type	Description	Range	Default value
provisioning.zoneSetting.namingScript.zone	File	Specify the naming convention script that determines the Zone name for the path.	-	See the following script example.
provisioning.zoneSetting.namingScript.hostZoneAlias	File	Specify the naming convention script that determines the Zone Alias name for the host port.	-	See the following script example.
provisioning.zoneSetting.namingScript.storageZoneAlias	File	Specify the naming convention script that determines the Zone Alias name for the storage port.	-	See the following script example.

**Table 71 provisioning.zoneSetting.namingScript.zone/  
provisioning.zoneSetting.namingScript.hostZoneAlias/  
provisioning.zoneSetting.namingScript.storageZoneAlias**

Specifications of the script	Explanation
script	Function that is written in the syntax of ECMAScript 5. The following conditions of arguments and return must be satisfied.
arguments	arguments[0]: The object with the following properties is passed as an argument. hostname: Host name hostPortWorldWideName: WWN of HBA. Separator notation is based on BNA. storagePortWorldWideName: WWN of CHA. Separator notation is based on BNA. storageSystemFamily: Display model name of the physical storage system

Specifications of the script	Explanation
	<p>storageSystemName: Name of physical storage system on Device Manager</p> <p>storageSystemSerialNumber: Serial number of physical storage system</p> <p>storagePortName: Display port name of the storage system</p> <p>virtualStorageArrayFamily: Display model name of virtual storage (if non-virtual, "-")</p> <p>virtualStorageSystemName: Name of virtual storage on Device Manager (if non-virtual, "-")</p> <p>virtualSerialNumber: Serial number of virtual storage (if non-virtual, "-")</p> <p>serviceProperties: List of the service properties passed to the plug-in</p>
return	<p>Script must return the string that satisfies the following conditions.</p> <ol style="list-style-type: none"> <li>1. Only alphanumeric characters and "_" are allowed.</li> <li>2. The first character must be alphabetic.</li> <li>3. Zone can be up to 60 characters. Zone Alias can be up to 64 characters</li> <li>4. A string starting with LSAN_, "TI_", "QOSHn+_ ", "QOSMn+_ ", "QOSLn_" is not allowed for the Zone (where <i>n</i> is a number).</li> </ol>
example	<pre>(function(args) { var name; if(! args.virtualSerialNumber    args.virtualSerialNumber == "-"){ name = args.hostName + "_" + args.storageSystemName + "_" + args.storagePortName; }else{ name = args.hostName + "_" + args.virtualStorageSystemName + "_" + args.storagePortName; } if (!(name === null    typeof(name) == "string"    name instanceof String)) {</pre>

Specifications of the script	Explanation
	<pre> throw new Error("Zone name must be a string: "+ name); } name = name.replace(/[^A-Za-z0-9_]/g, '_'); if(name.length &gt; 60){ throw new Error("Zone name must be within 60 characters: "+ name); } if (/^[A-Z]/i.test(name) == false) { throw new Error("Zone name must start with a alphabet: "+ name); } if (/^LSAN_/i.test(name)    /^TI_/i.test(name)    / ^QOS[HML][0-9]+_/i.test(name)) { throw new Error("Zone name has the prefix LSAN_, TI_ or QOSxx_ cannot be for normal zone: "+name); } return name; }) </pre>

**File type property list**

**Table 72 ConfigurationManagerConnection**

Data nesting information		Description	Range
values			
	productName	Product name of registering to Web Service Connection.	"ConfigurationManager"
	name	Name.	-
	ipAddress	IP address.	-
	port	Port.	-
	protocol	Protocol.	-
	userID	User ID.	-
	status	Status of connection.	-

Data nesting information		Description	Range
	connectedTime	Connected time.	-

**Table 73 StorageSystem**

Data nesting information		Description	Range
values			
	storageDeviceId	Storage Device ID.	-
	model	Model.	-
	serialNumber	Serial Number.	-
	svplp	SVP IP Address.	-

**Table 74 ResourceGroup**

Data nesting information		Description	Range
values			
	resourceGroupId	Resource Group ID.	-
	resourceGroupName	Resource Group Name.	-
	virtualStorageId	Virtual Storage System ID.	-

**Table 75 Pool**

Data nesting information		Description	Range
values			
	poolId	Pool ID.	-
	poolName	Pool name.	-
	poolType	Pool Type.	-
	usedCapacityRate	Used capacity rate.	-
	availableVolumeCapacity	Available Volume capacity.	-
	totalPoolCapacity	Total Pool capacity.	-
	numOfLdevs	Number of LDEVs.	-

**Table 76 Volume Settings**

Data nesting information		Description	Range
values <sup>1</sup>			
	volumeUsage	Volume usage	A maximum of 64 characters can be entered.
	numberOfVolumes	Number of volumes	1-500
	ldevIdStartsFrom	LDEV ID starts from	0-FFFFFF
	volumeCapacityInMiB <sup>2</sup>	Volume capacity	1-
	blockCapacity <sup>3</sup>	Volume capacity	96000-
	volumeLabel	Volume label	A maximum of 64 characters can be entered.
	lunStartsFrom	LUN starts from	0-07FF
	virtualLdevIdStartsFrom	Virtual LDEV ID starts from	0-FEFF
<p>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.</p> <p>2. When "CapacityFormat" is "Byte", volumeCapacityInMiB can be specified.</p> <p>3. When "CapacityFormat" is "Block", blockCapacity can be specified.</p>			

**Table 77 ResourceCriteria**

Data nesting information		Description	Range
values <sup>1</sup>			
	volumeUsage <sup>2</sup>	Volume Usage	-
	storagePortCriteria	Storage Port Criteria	-
	expressions <sup>1</sup>	Condition	-
	name	Attribute	"Name"
	op	Operator Type	"Equals", "Not Equals", "Starts With", "Ends With"
	value	Value	-

Data nesting information			Description	Range
	join		Join condition of the Expressions	"All", "Any"
<ol style="list-style-type: none"> <li>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.</li> <li>2. Select from volume usage specified in "Volume Settings"</li> </ol>				

**Table 78 HostGroupSettings**

Data nesting information			Description	Range
values <sup>1</sup>				
	hostGroupName <sup>2</sup>		Host Group name.	A maximum of 64 characters can be entered.
	iScsiTargetName <sup>3</sup>		iSCSI target name.	A maximum of 32 characters can be entered.
	wwnSettings <sup>1, 4</sup>		WWN settings.	
		wwn	WWN.	A maximum of 16 characters is allowed in hexadecimal.
		wwnNickname	WWN nickname.	A maximum of 64 characters can be entered.
	iScsiSettings <sup>1, 5</sup>		iSCSI settings.	
	iScsiName		iSCSI name.	"Specify in iqn format or eui format. -iqn format: Specify 5-223 characters by using the following characters: a-z,0-9,.,-, : -eui format: Specify 20 characters in hexadecimal."
	iScsiNickName		iSCSI nickname.	A maximum of 32 characters can be entered.
	hostMode		Host Mode.	See the Provisioning Guide for your storage system for details about the host mode.
	hostModeOptions		Host Mode options.	See the Provisioning Guide for your storage system for details about host mode options.



Data nesting information	Description	Range
	<ol style="list-style-type: none"> <li>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.</li> <li>2. When "PortType" is "Fibre", hostGroupName can be specified.</li> <li>3. When "PortType" is "iSCSI", iScsiTargetName can be specified.</li> <li>4. When "PortType" is "Fibre", wwnSettings can be specified.</li> <li>5. When "PortType" is "iSCSI", iScsiSettings can be specified.</li> </ol>	

**Table 79 provisioning.fabricSetting.connections**

Data nesting information	Description	Range
value		
productName	Category	-
name	Name	-
ipAddress	IP Address/Host Name	-
port	Port	-
protocol	Protocol	-
userID	User ID	-
status	Status	-
connectedTime	Connected Time	-

**Allocate fabric aware volumes with Configuration Manager (submit)**

keyName	Type	Description	Range	Default value
ConfigurationManagerCon nection	File	Specify the Configuration Manager Connection.	See the following File type property list.	-
StorageSystem	File	Specify the Storage System.	See the following File type property list.	-

keyName	Type	Description	Range	Default value
ResourceGroup	File	Specify the Resource Group.	See the following File type property list.	-
Pool	File	Specify the pool.	See the following File type property list.	-
CapacityFormat	String	Specify the volume capacity format as Byte or Block	"Byte" or "Block"	"Byte"

keyName	Type	Description	Range	Default value
VolumeSettings	File	Specify the parameters required to create new volumes.	See the following File type property list.	[{"volumeUsage": "OS", "numberOfVolumes": 1, "ldevIdStartsFrom": 0, "volumeCapacityInMiB": 153600, "blockCapacity": "314572800", "volumeLabel": "", "lunStartsFrom": 0, "virtualLdevIdStartsFrom": 0}, {"volumeUsage": "App", "numberOfVolumes": 1, "ldevIdStartsFrom": 0, "volumeCapacityInMiB": 204800, "blockCapacity": "419430400", "volumeLabel": "", "lunStartsFrom": 0, "virtualLdevIdStartsFrom": 0}, {"volumeUsage": "Data", "numberOfVolumes": 1, "ldevIdStartsFrom": 0, "volumeCapacityInMiB": 460800, "blockCapacity": "943718400", "volumeLabel": "", "lunStartsFrom": 0, "virtualLdevIdStartsFrom": 0}

keyName	Type	Description	Range	Default value
				StartsFrom": 0}]
CapacitySavingFunction	String	Specify the Capacity Saving Function for target volumes.  Refer to your storage system product documentation for the optimal setting.	"None", "Compression", "Deduplication and Compression"	None
CapacitySavingMode	String	Specify the Capacity Saving Mode for target volumes.  Refer to your storage system product documentation for the optimal setting.	"Inline mode", "Post-process mode"	Post-process mode
ResourceCriteria	File	Specify the resource criteria.	See the following File type property list.	-
PortType	String	Specify the port type as Fibre or iSCSI.	"Fibre" or "iSCSI"	"Fibre"
HostGroupSettings	File	Specify the parameters that are needed to create a new Host Group/ iSCIS Target.	See the following File type property list.	-

File type property list

**Table 80 ConfigurationManagerConnection**

Data nesting information		Description	Range
values			
	productName	Product name of registering to Web Service Connection.	"ConfigurationManager"
	name	Name.	-
	ipAddress	IP address.	-
	port	Port.	-
	protocol	Protocol.	-
	userID	User ID.	-
	status	Status of connection.	-
	connectedTime	Connected time.	-

**Table 81 StorageSystem**

Data nesting information		Description	Range
values			
	storageDeviceId	Storage Device ID.	-
	model	Model.	-
	serialNumber	Serial Number.	-
	svplp	SVP IP Address.	-

**Table 82 ResourceGroup**

Data nesting information		Description	Range
values			
	resourceGroupId	Resource Group ID.	-
	resourceGroupName	Resource Group Name.	-
	virtualStorageId	Virtual Storage System ID.	-

**Table 83 Pool**

Data nesting information		Description	Range
values			
	poolId	Pool ID.	-
	poolName	Pool name.	-
	poolType	Pool Type.	-
	usedCapacityRate	Used capacity rate.	-
	availableVolumeCapacity	Available Volume capacity.	-
	totalPoolCapacity	Total Pool capacity.	-
	numOfLdevs	Number of LDEVs.	-

**Table 84 Volume Settings**

Data nesting information		Description	Range
values <sup>1</sup>			
	volumeUsage	Volume usage	A maximum of 64 characters can be entered.
	numberOfVolumes	Number of volumes	1-500
	ldevIdStartsFrom	LDEV ID starts from	0-FFFFFF
	volumeCapacityInMiB <sup>2</sup>	Volume capacity	1-
	blockCapacity <sup>3</sup>	Volume capacity	96000-
	volumeLabel	Volume label	A maximum of 64 characters can be entered.
	lunStartsFrom	LUN starts from	0-07FF
	virtualLdevIdStartsFrom	Virtual LDEV ID starts from	0-FEFF
<ol style="list-style-type: none"> <li>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.</li> <li>2. When "CapacityFormat" is "Byte", volumeCapacityInMiB can be specified.</li> <li>3. When "CapacityFormat" is "Block", blockCapacity can be specified.</li> </ol>			

**Table 85 ResourceCriteria**

Data nesting information			Description	Range
values <sup>1</sup>				
	volumeUsage <sup>2</sup>		Volume Usage	-
	storagePortCriteria		Storage Port Criteria	-
	expressions <sup>1</sup>		Condition	-
		name	Attribute	"Name"
		op	Operator Type	"Equals", "Not Equals", "Starts With", "Ends With"
		value	Value	-
	join		Join condition of the Expressions	"All", "Any"
<p>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.</p> <p>2. Select from volume usage specified in "Volume Settings"</p>				

**Table 86 HostGroupSettings**

Data nesting information			Description	Range
values <sup>1</sup>				
	hostGroupName <sup>2</sup>		Host Group name.	A maximum of 64 characters can be entered.
	iScsiTargetName <sup>3</sup>		iSCSI target name.	A maximum of 32 characters can be entered.
	wwnSettings <sup>1, 4</sup>		WWN settings.	
		wwn	WWN.	A maximum of 16 characters is allowed in hexadecimal.
		wwnNickname	WWN nickname.	A maximum of 64 characters can be entered.
	iScsiSettings <sup>1, 5</sup>		iSCSI settings.	

Data nesting information		Description	Range
	iScsiName	iSCSI name.	"Specify in iqn format or eui format. -iqn format: Specify 5-223 characters by using the following characters: a-z,0-9,.,-, : -eui format: Specify 20 characters in hexadecimal."
	iScsiNickName	iSCSI nickname.	A maximum of 32 characters can be entered.
	hostMode	Host Mode.	See the Provisioning Guide for your storage system for details about the host mode.
	hostModeOptions	Host Mode options.	See the Provisioning Guide for your storage system for details about host mode options.
<ol style="list-style-type: none"> <li>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.</li> <li>2. When "PortType" is "Fibre", hostGroupName can be specified.</li> <li>3. When "PortType" is "iSCSI", iScsiTargetName can be specified.</li> <li>4. When "PortType" is "Fibre", wwnSettings can be specified.</li> <li>5. When "PortType" is "iSCSI", iScsiSettings can be specified.</li> </ol>			

## Allocate fabric aware volumes with Configuration Manager (task details)

Use the following information to show the task details of allocated fabric aware volumes with Configuration Manager.

keyName	Type	Description	Range
LUNPathConfigurationInformation	File	Stores the allocated LUN path information from the volume allocation results.	See the "File type property list" section following this table.
provisioning.taskResult.createdZoneConfigurations	File	List of new zone.	-
provisioning.taskResult.createdZones	File	List of new zones.	-



keyName	Type	Description	Range
provisioning.taskResult.createdZoneAliases	File	Stores the new zone aliases.	-
provisioning.taskResult.updatedZoneConfigurations	File	Stores the new zone aliases.	-
provisioning.taskResult.updatedZones	File	Stores the new zone aliases.	-
provisioning.taskResult.updatedZoneAliases	File	Stores the new zone aliases.	-

**File type property list**

**Table 87 LUNPathConfigurationInformation**

Data nesting information	Description	Range
value <sup>1</sup>		
storageDeviceId	Storage device ID	-
volumeUsage	Volume Usage	-
hostPort	WWN/iSCSI name	-
storagePort	Storage port	-
lun	LUN	-
portType	Port type	-
capacity	Capacity	-
provisionedCapacity	Provisioned capacity	-
ldevId	LDEV ID	-
hostGroupNameOrIscsiTarget	Host Group name/iSCSI target name	-
hostGroupNumber	Host Group number	-
hostMode	Host Mode	-
hostModeOptions	Host Mode options	-
model	Model	-
serialNumber	Serial number	-

Data nesting information		Description	Range
	ldevLabel	LDEV label	-
	virtualStorageMachineResource GroupName	Resource Group in Virtual Storage System	-
	virtualModel	Model in Virtual Storage System	-
	virtualSerialNumber	Serial number in Virtual Storage System	-
	resourceGroupName	Virtual Storage Machine Resource Group name	-
	virtualLdevId	Virtual LDEV ID	-
	configurationManager	Configuration Manager	-
	poolId	Pool ID	-
	poolName	Pool name	-
	asymmetricAccessStatus	ALUA settings	-
1. Repeatable Repeatable items must be repeated and must include all lower layer tags.			

Table 88 provisioning.taskResult.zoneConfiguration

Data nesting information		Explanation	Range
values <sup>1</sup>		List of new Zone Configuration	-
	name	Name of new Zone Configuration name	-
	bnaName	Name of Switch Management Server/FOS_PrimarySwitch	-
	fabricName	Name of Fabric where the settings exist	-
	zoneNames <sup>1</sup>	Zone to add to the created Zone Configuration	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

**Table 89 provisioning.taskResult.createdZones**

Data nesting information		Explanation	Range
values <sup>1</sup>		List of new zone	
	name	Name of new zone	-
	bnaname	Name of Switch Management Server/FOS_PrimarySwitch	-
	fabricName	Name of Fabric where the settings exist	-
	Zone Alias to add to the created Zone <sup>1</sup>	Zone to add to the created Zone Configuration	-
	memberNames <sup>1</sup>	WWN of the port added to the created Zone	-
<p><b>1.</b> Repeatable. Repeatable items must be repeated and must include all lower layer tags.</p>			

**Table 90 provisioning.taskResult.createdZoneAliases**

Data nesting information		Explanation	Range
values <sup>1</sup>		List of new zone alias	
	name	Name of new zone alias	-
	bnaname	Name of Switch Management Server/FOS_PrimarySwitch	-
	fabricName	Name of Fabric where the settings exist	-
	memberNames <sup>1</sup>	WWN of the port added to the created Zone	-
<p><b>1.</b> Repeatable. Repeatable items must be repeated and must include all lower layer tags.</p>			

**Table 91 provisioning.taskResult.updatedZoneConfigurations**

Data nesting information		Explanation	Range
values <sup>1</sup>		Zone to add to the created Zone Configuration	
	name	Name of new zone configuration	-
	bnaname	Name of Switch Management Server/FOS_PrimarySwitch	-

Data nesting information		Explanation	Range
	fabricName	Name of Fabric where the settings exist	-
	zoneNames <sup>1</sup>	Name of added zone	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

**Table 92 provisioning.taskResult.updatedZones**

Data nesting information		Explanation	Range
values <sup>1</sup>		List of zones where the settings were updated	
	name	Name of zone where settings were updated	-
	bnaname	Name of Switch Management Server/FOS_PrimarySwitch	-
	fabricName	Name of Fabric where the settings exist	-
	aliasNames <sup>1</sup>	Name of added Zone alias	-
	memberNames <sup>1</sup>	WWN of the added port	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

**Table 93 provisioning.taskResult.updatedZoneAliases**

Data nesting information		Explanation	Range
values <sup>1</sup>		List of Zone alias where settings were updated	
	name	Name of Zone alias where settings were updated	-
	bnaname	Name of BNA that manages the settings	-
	fabricName	Name of Fabric where the settings exist	-
	memberNames <sup>1</sup>	WWN of added port	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

## Allocate Volumes, Fabric, and Datastore for ESXi Host service properties

Use the following properties to modify or create values for the Allocate Volumes, Fabric, and Datastore for ESXi Host service.

### Allocate Volumes, Fabric, and Datastore for ESXi Host (edit)

KeyName	Type	Description	Range	Default Value
ConfigurationManagerConnection	file	Specify the Configuration Manager Connection.	See the following file type property list	-
StorageSelection	string	Specify whether to select storage system at volume allocation. If you specify 'Automatic', then a storage system will be selected automatically.	Automatic,Manual	Automatic
StorageSystem	file	Specify the Storage System.	See the following file type property list	-
ResourceGroupSelection	string	Specify whether to select resource group at volume allocation. If you select 'Meta resource', then the meta resource group will be selected.	Meta resource,Manual	Meta resource

KeyName	Type	Description	Range	Default Value
ResourceGroup	file	Specify the Resource Group.	See the following file type property list	-
PoolSelection	string	Specify whether to select pool at volume allocation. If you select 'Automatic', then a pool will be selected automatically.	Automatic,Manual	Automatic
Pool	file	Specify the pool.	See the following file type property list	-
CapacityFormat	string	Select the volume capacity format.	Byte,Block	Byte

KeyName	Type	Description	Range	Default Value
VolumeSettings	file	Specify the parameters for creating new volumes.	See the following file type property list	<pre>[{"volumeUsage":"GenericDatastore","numberOfVolumes":1,"volumeCapacityInMiB":153600,"blockCapacity":"314572800","volumeLabel":"","diskType": [],"lunSetting": {"lunStartsFrom":0,"virtualLunStartsFrom":0}, "lunSetting": {"lunStartsFrom":0}}]</pre>
CapacitySavingFunction	String	Specify the Capacity Saving Function for target volumes.  Refer to your storage system product documentation for the optimal setting.	"None", "Compression", "Deduplication and Compression"	None

KeyName	Type	Description	Range	Default Value
CapacitySavingMode	String	Specify the Capacity Saving Mode for target volumes.  Refer to your storage system product documentation for the optimal setting.	"Inline mode", "Post-process mode"	Post-process mode
ResourceCriteria	file	Specify the resource criteria.	See the following file type property list	-
vCenterConnection	file	Specify the vCenter connection.	See the following file type property list	-
ESXiHost	file	Specify the ESXi Host.	See the following file type property list	-



KeyName	Type	Description	Range	Default Value
PerformLIPReset	boolean	Select true to perform LIP reset on the ESXi host when the created volumes are not visible on the ESXi host.  Note: If the ESXi host has specific paths, the specific paths might also reset.  If you enable LIP Reset, you must also register agentless remote connection settings for each ESXi server.	-	false
HostMode	file	Specify the parameters for creating a new host group.	See the following file type property list	<pre>{"hostMode": "VMWARE_EX", "hostModeOption": ["54", "63"]}</pre>
FabricSettingEnabled	boolean	Select this option to enable fabric information collection.	-	false
FabricConnectionType	string	This property defines connection type information.	FOS_PrimarySwitch, DCNM	FOS_PrimarySwitch

KeyName	Type	Description	Range	Default Value
FabricConnections	file	Specify the connection defined in the Web Service Connections on the Administration Tab. If this value is omitted, the system uses all connections that are defined for the product name listed in the Web Service Connections.	See the following file type property list	-
TargetFabrics	string	Specify the fabric name. Separate multiple values by commas. If omitted, all fabrics defined as the FOS_PrimarySwitch/DCNM specified in Connections will be used.	-	-

KeyName	Type	Description	Range	Default Value
UsingExistingZone	boolean	Specifies whether to select a predefined zone or any connectable path. If you select this option, the system selects paths within the range of the existing Zone setting. If you do not select this option, the system selects connectable paths regardless of the existing Zone setting.	-	true
FabricHopsRestriction	boolean	Determines whether the service will fail if there is no path that matches the specified collection range.	-	false
ZoneSettingEnabled	boolean	Select this option to enable the modification of zone settings.	-	false

KeyName	Type	Description	Range	Default Value
UseExistingZoneAliases	boolean	Select this option to use predefined Zone Aliases regardless of the naming conventions the user specifies. If you do not select this option, the system selects Zone Aliases that follow the naming conventions. In either case, if there are no existing Zone Aliases, the system creates new Zone Aliases that follow the naming conventions.	-	false
UpdateActiveZoneConfiguration	boolean	Select this option to add a Zone to the active Zone Configuration.	-	true
ZoneConfigurationNameToUpdate	string	To add a zone to a Zone Configuration other than the active configuration, specify the name of the Zone Configuration in which to add the zone.	-	-

KeyName	Type	Description	Range	Default Value
NamingScriptZone	file	Specify the naming convention script that determines the Zone name for the path.	-	See the following script example.
NamingScriptHostZoneAlias	file	Specify the naming convention script that determines the Zone Alias name for the host port.	-	See the following script example.
NamingScriptStorageZoneAlias	file	Specify the naming convention script that determines the Zone Alias name for the storage port.	-	See the following script example.
DatastoreCluster	string	Specify the Datastore Cluster to which add created DataStores.	-	-
DatastoreNamePrefix	string	Specify the prefix for Datastores.	Maximum 76 characters	-
VMFSVersion	string	Specify the VMFS version for the datastore that is to be created.	5, 6	6

KeyName	Type	Description	Range	Default Value
BlockSize	string	Specify the block size for the datastore that is to be created.	1	1
StorageIOControl	boolean	Specify whether to enable storage I/O control for the datastore that is to be created.	true or false	false
ThresholdType	string	Specify type of threshold; Latency Threshold or Throughput Threshold.	Latency Threshold, Throughput Threshold	Latency Threshold
ThresholdValue	integer	If you enable storage I/O control, specify the value of latency threshold.	5-100	30
toAddress	string	Specify the To email addresses. Use a comma to separate multiple addresses.	-	-
ccAddress	string	Specify the Cc email addresses. Use a comma to separate multiple addresses.	-	-

KeyName	Type	Description	Range	Default Value
bccAddress	string	Specify the Bcc email addresses. Use a comma to separate multiple addresses.	-	-
encodeType	string	Specify us-ascii, iso-2022-jp, shift_jis, euc-jp, or utf-8 for the email encoding.	-	utf-8
mailSubject	string	Specify the email subject.	-	ESXi host needs to recognize newly added volumes
mailBody	string	Specify the email body.	-	ESXi host doesn't recognize the newly added volumes. Make sure to let ESXi host to recognize them by resetting HBA or restarting server, then click Proceed.

KeyName	Type	Description	Range	Default Value
dialogText	file	Specify HTML or text in the Response Entry dialog box. To change a service property value in the Response Entry dialog box, specify the property key for the 'name' attribute of an input tag (<input>) or a select tag (<select>).	-	The ESXi host does not recognize the newly added volumes. Make sure that the ESXi host recognizes them by resetting HBA or restarting the server, and then clicking Proceed.
responseTimeOut	string	Specify a timeout (in minutes) for the Response Entry dialog box.	-	1440

## File type property list

Table 94 ConfigurationManagerConnection

Data nesting information		Description	Range
value			
	productName	Category	"ConfigurationManager"
	name	Name	-
	ipAddress	IP Address/Host Name	-
	port	Port	-
	protocol	Protocol	-



Data nesting information		Description	Range
	userID	User ID	-
	status	Status	-
	connectedTime	Connected Time	-

Table 95 StorageSystem

Data nesting information		Description	Range
value			
	storageDeviceId	Storage Device ID	-
	model	Model	-
	serialNumber	Serial Number	-
	svplp	SVP IP Address	-

Table 96 ResourceGroup

Data nesting information		Description	Range
value			
	resourceGroupId	Resource Group ID	-
	resourceGroupName	Resource Group Name	-
	virtualStorageId	Virtual Storage System ID	-
	virtualStorageMachine	Virtual Storage System	-

Table 97 Pool

Data nesting information		Description	Range
value			
	poolId	Pool ID	-
	poolName	Pool Name	-
	poolType	Pool Type	-
	usedCapacityRate	Used Capacity Rate(%)	-

Data nesting information		Description	Range
	availableVolumeCapacity	Available Capacity	-
	totalPoolCapacity	Total Capacity	-
	numOfLdevs	Number of Volumes	-

**Table 98 VolumeSettings**

Data nesting information		Description	Range	
value <sup>1</sup>				
	volumeUsage	Volume Usage	1-64 characters. ^[A-Za-z0-9 ~!@#\\$\% \ \^&()_!+ = \{ }\ [\ ]'\" \.]*\$	
	numberOfVolumes	Number of Volumes	1-200	
	volumeCapacityInMiB	Volume Capacity	47-268435456	
	blockCapacity	Volume Capacity	96000-549755813888	
	volumeLabel	Volume Label	max 32 characters. ^[A-Za-z0-9 ~!@#\\$\% \ \^&()_!+ = \{ }\ [\ ]'\" \.:\ / /]*\$	
	ldevSetting	LDEV Setting	-	
		ldevIdStartsFrom	LDEV ID Starts From	0-16777215
		virtualLdevIdStartsFrom	Virtual LDEV ID Starts From	0-65279
	lunSetting	LUN Setting	-	
		lunStartsFrom	LUN Starts From	0-2047
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>				

Table 99 ResourceCriteria

Data nesting information				Description	Range
value <sup>1</sup>					
	volumeUsage			Volume Usage	-
	storagePortCriteria			Storage Port	-
		expressions <sup>1</sup>		Expressions	-
			name	Attribute	[ "Name" ]
			op	Operator	[ "Equals", "Not Equals", "Starts With", "Ends With" ]
			value	Value	-
		join		Conditions Above	[ "All", "Any" ]
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>					

Table 100 vCenterConnection

Data nesting information		Description	Range
value			
	productName	Category	"vCenter"
	name	Name	-
	ipAddress	IP Address/Host Name	-
	port	Port	-
	protocol	Protocol	-
	userID	User ID	-
	status	Status	-
	connectedTime	Connected Time	-

Table 101 ESXiHost

Data nesting information		Description	Range
value			

Data nesting information		Description	Range
	mold	Managed Object ID	-
	name	Name	-
	ipAddresses	IP Addresses	-
	wwns	WWNs	-

**Table 102 HostMode**

Data nesting information		Description	Range
value			
	hostMode <sup>1</sup>	Host Mode	-
	hostModeOption <sup>1</sup>	Host Mode Options	-
<p>1. See the Provisioning Guide for your storage system for details about the host mode and host mode options.</p>			

**Table 103 FabricConnections**

Data nesting information		Description	Range
value			-
	productName	Category	-
	name	Name	-
	ipAddress	IP Address/Host Name	-
	port	Port	-
	protocol	Protocol	-
	userID	User ID	-
	status	Status	-
	connectedTime	Connected Time	-

**Table 104 ScriptForHostGroupNaming**

Specifications of the script	Description
script	Function that is written in the syntax of ECMAScript 5. The following conditions of arguments and return must be satisfied.
arguments	<p>arguments[0]: The object with the following properties is passed as an argument:</p> <ul style="list-style-type: none"> <li>▪ mold: The ID of the host (Managed Object ID in vCenter)</li> <li>▪ name: The name of the host.</li> <li>▪ clusterName: The name of the cluster to which the host belongs.</li> <li>▪ clusterMold: The ID of the cluster to which the host belongs.(Managed Object ID in vCenter)</li> <li>▪ ipAddresses: The IP addresses for management of the host.</li> <li>▪ wwns: The WWNs of the host (: separated hex value)</li> </ul>
return	<p>Script must return the string that satisfies the following conditions:</p> <ol style="list-style-type: none"> <li>1. Available characters: Only alphanumeric characters and “_”</li> <li>2. The first character is alphabetic.</li> <li>3. Host Group Name is up to 64 characters.</li> </ol>
example	<pre>function(host) { /**  * Following attributes are available.  * * - host.moId: string  * The ID of the host (Managed Object ID in vCenter)  *  * - host.name: string  * The name of the host.  *  * - host.clusterName: string  * The name of the cluster to which the host belongs.  *  * - host.clusterMoId: string  * The ID of the cluster to which the host belongs.  * (Managed Object ID in vCenter)  *  * - host.ipAddresses: string  * The IP addresses for management of the host.  *  * - host.wwns: [string]  * The WWNs of the host (: separated hex value)  */ }</pre>

Specifications of the script	Description
	<pre> var hostGroupName = host.name; if (!hostGroupName) { hostGroupName = "HostGroupForDataStore"; } return hostGroupName; }                     </pre>

**Table 105 NamingScriptZone / NamingScriptHostZoneAlias / NamingScriptStorageZoneAlias**

Specifications of the script	Description
script	Function that is written in the syntax of ECMAScript 5. The following conditions of arguments and return must be satisfied.
arguments	<p>arguments[0]: The object with the following properties is passed as an argument:</p> <ul style="list-style-type: none"> <li>▪ hostname: Host name</li> <li>▪ hostPortWorldWideName: WWN of HBA. Separator notation is based on BNA.</li> <li>▪ storagePortWorldWideName: WWN of CHA. Separator notation is based on BNA.</li> <li>▪ storageSystemFamily: Display model name of the physical storage system</li> <li>▪ storageSystemName: Name of physical storage system on Configuration Manager</li> <li>▪ storageSystemSerialNumber: Serial number of physical storage system</li> <li>▪ storagePortName: Display port name of the storage system</li> <li>▪ virtualStorageArrayFamily: Display model name of virtual storage (if non-virtual, "-")</li> <li>▪ virtualStorageSystemName: Name of virtual storage on Configuration Manager (if non-virtual, "-")</li> <li>▪ virtualSerialNumber: Serial number of virtual storage (if non-virtual, "-")</li> <li>▪ serviceProperties: List of the service properties passed to the plug-in</li> </ul>
return	<p>Script must return the string that satisfies the following conditions:</p> <ol style="list-style-type: none"> <li>1. Available characters: Only alphanumeric characters and “_”</li> </ol>

Specifications of the script	Description
	<p>2. The first character is alphabetic.</p> <p>3. Zone is up to 60 characters, Zone Alias is up to 64 characters.</p> <p>4. About Zone, the string starting from "LSAN_", "TI_", "QOSHn+_ ", "QOSMn+_ ", "QOSLn_" is not allowed (case ignored. "n" is number.)</p>
example	<pre>(function(args) {   var name;   if(! args.virtualSerialNumber    args.virtualSerialNumber == "-"){     name = args.hostName + "_" + args.storageSystemName + "_" + args.storagePortName;   }else{     name = args.hostName + "_" + args.virtualStorageSystemName + "_" + args.storagePortName;   }   if (!(name === null    typeof(name) == "string"    name instanceof String)) {     throw new Error("Zone name must be a string: "+ name);   }   name = name.replace(/^[^A-Za-z0-9_]/g, '_');   if(name.length &gt; 60){     throw new Error("Zone name must be within 60 characters: "+ name);   }   if (/^[A-Z]/i.test(name) == false) {     throw new Error("Zone name must start with a alphabet: "+ name);   }   if (/^LSAN_/i.test(name)    /^TI_/i.test(name)    /^QOS[HML][0-9]+_/i.test(name)) {     throw new Error("Zone name has the prefix LSAN_, TI_ or QOSxx_ cannot be for normal zone: "+name);   }   return name; }) }</pre>

## Allocate Volumes, Fabric, and Datastore for ESXi Host (submit)

KeyName	Type	Description	Range	Default Value
ConfigurationManagerConnection	file	Specify the Configuration Manager Connection.	See the following file type property list	-
StorageSelection	string	Specify whether to select storage system at volume allocation. If you specify 'Automatic', then a storage system will be selected automatically.	Automatic,Manual	Automatic
StorageSystem	file	Specify the Storage System.	See the following file type property list	-
ResourceGroupSelection	string	Specify whether to select resource group at volume allocation. If you select 'Meta resource', then the meta resource group will be selected.	Meta resource,Manual	Meta resource
ResourceGroup	file	Specify the Resource Group.	See the following file type property list	-



KeyName	Type	Description	Range	Default Value
PoolSelection	string	Specify whether to select pool at volume allocation. If you select 'Automatic', then a pool will be selected automatically.	Automatic,Manual	Automatic
Pool	file	Specify the pool.	See the following file type property list	-
CapacityFormat	string	Select the volume capacity format.	Byte,Block	Byte
VolumeSettings	file	Specify the parameters for creating new volumes.	See the following file type property list	{["volumeUsage":"GenericDatastore","numberOfVolumes":1,"volumeCapacityInMiB":153600,"blockCapacity":"314572800","volumeLabel":"","diskType":[],"devSetting":{"devIdStartsFrom":0,"virtualDevIdStartsFrom":0},"lunSetting":{"lunStartsFrom":0}}]

KeyName	Type	Description	Range	Default Value
CapacitySavingFunction	String	Specify the Capacity Saving Function for target volumes.  Refer to your storage system product documentation for the optimal setting.	"None", "Compression", "Deduplication and Compression"	None
CapacitySavingMode	String	Specify the Capacity Saving Mode for target volumes.  Refer to your storage system product documentation for the optimal setting.	"Inline mode", "Post-process mode"	Post-process mode
ResourceCriteria	file	Specify the resource criteria.	See the following file type property list	-
vCenterConnection	file	Specify the vCenter connection.	See the following file type property list	-
ESXiHost	file	Specify the ESXi Host.	See the following file type property list	-

KeyName	Type	Description	Range	Default Value
PerformLIPReset	boolean	<p>Select true to perform LIP reset on the ESXi host when the created volumes are not visible on the ESXi host.</p> <p>Note: If the ESXi host has specific paths, the specific paths might also reset.</p> <p>If you enable LIP Reset, you must also register agentless remote connection settings for each ESXi server.</p>	-	false
HostMode	file	Specify the parameters for creating a new host group.	See the following file type property list	<pre>{   "hostMode": "VMWARE_EX",   "hostModeOption": ["54", "63"] }</pre>

KeyName	Type	Description	Range	Default Value
ZoneConfigurationNameToUpdate	string	To add a zone to a Zone Configuration other than the active configuration, specify the name of the Zone Configuration in which to add the zone.	-	-
NamingScriptZone	file	Specify the naming convention script that determines the Zone name for the path.	-	See the following script example.
NamingScriptHostZoneAlias	file	Specify the naming convention script that determines the Zone Alias name for the host port.	-	See the following script example.
NamingScriptStorageZoneAlias	file	Specify the naming convention script that determines the Zone Alias name for the storage port.	-	See the following script example.
DatastoreCluster	string	Specify the Datastore Cluster to which add created DataStores.	-	-

KeyName	Type	Description	Range	Default Value
DatastoreNamePrefix	string	Specify the prefix for Datastores.	Maximum 76 characters	-
VMFSVersion	string	Specify the VMFS version for the datastore that is to be created.	5, 6	6
StorageIOControl	boolean	Specify whether to enable storage I/O control for the datastore that is to be created.	true or false	false
ThresholdType	string	Specify type of threshold; Latency Threshold or Throughput Threshold.	Latency Threshold, Throughput Threshold	Latency Threshold
ThresholdValue	integer	If you enable storage I/O control, specify the value of latency threshold.	5-100	30
toAddress	string	Specify the To email addresses. Use a comma to separate multiple addresses.	-	-
ccAddress	string	Specify the Cc email addresses. Use a comma to separate multiple addresses.	-	-

KeyName	Type	Description	Range	Default Value
bccAddress	string	Specify the Bcc email addresses. Use a comma to separate multiple addresses.	-	-
encodeType	string	Specify us-ascii, iso-2022-jp, shift_jis, euc-jp, or utf-8 for the email encoding.	-	utf-8
mailSubject	string	Specify the email subject.	-	ESXi host needs to recognize newly added volumes
mailBody	string	Specify the email body.	-	ESXi host doesn't recognize the newly added volumes. Make sure to let ESXi host to recognize them by resetting HBA or restarting server, then click Proceed.

KeyName	Type	Description	Range	Default Value
dialogText	file	Specify HTML or text in the Response Entry dialog box. To change a service property value in the Response Entry dialog box, specify the property key for the 'name' attribute of an input tag (<input>) or a select tag (<select>).	-	The ESXi host does not recognize the newly added volumes. Make sure that the ESXi host recognizes them by resetting HBA or restarting the server, and then clicking Proceed.
responseTimeOut	string	Specify a timeout (in minutes) for the Response Entry dialog box.	-	1440

**File type property list**

**Table 106 ConfigurationManagerConnection**

Data nesting information		Description	Range
value			
	productName	Category	"ConfigurationManager"
	name	Name	-
	ipAddress	IP Address/Host Name	-
	port	Port	-
	protocol	Protocol	-

Data nesting information		Description	Range
	userID	User ID	-
	status	Status	-
	connectedTime	Connected Time	-

**Table 107 StorageSystem**

Data nesting information		Description	Range
value			
	storageDeviceId	Storage Device ID	-
	model	Model	-
	serialNumber	Serial Number	-
	svplp	SVP IP Address	-

**Table 108 ResourceGroup**

Data nesting information		Description	Range
value			
	resourceGroupId	Resource Group ID	-
	resourceGroupName	Resource Group Name	-
	virtualStorageId	Virtual Storage System ID	-
	virtualStorageMachine	Virtual Storage System	-

**Table 109 Pool**

Data nesting information		Description	Range
value			
	poolId	Pool ID	-
	poolName	Pool Name	-
	poolType	Pool Type	-
	usedCapacityRate	Used Capacity Rate(%)	-



Data nesting information		Description	Range
	availableVolumeCapacity	Available Capacity	-
	totalPoolCapacity	Total Capacity	-
	numOfLdevs	Number of Volumes	-

**Table 110 VolumeSettings**

Data nesting information		Description	Range	
value <sup>1</sup>				
	volumeUsage	Volume Usage	1-64 characters. ^[A-Za-z0-9 ~!@#\\$\% \ \^&()_!+ = \{ }\ [\ ]'\" \.]*\$	
	numberOfVolumes	Number of Volumes	1-200	
	volumeCapacityInMiB	Volume Capacity	47-268435456	
	blockCapacity	Volume Capacity	96000-549755813888	
	volumeLabel	Volume Label	max 32 characters. ^[A-Za-z0-9 ~!@#\\$\% \ \^&()_!+ = \{ }\ [\ ]'\" \.:\ /\\\\]*\$	
	ldevSetting	LDEV Setting	-	
		ldevIdStartsFrom	LDEV ID Starts From	0-16777215
		virtualLdevIdStartsFrom	Virtual LDEV ID Starts From	0-65279
	lunSetting	LUN Setting	-	
		lunStartsFrom	LUN Starts From	0-2047
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>				

**Table 111 ResourceCriteria**

Data nesting information				Description	Range
value <sup>1</sup>					
	volumeUsage			Volume Usage	-
	storagePortCriteria			Storage Port	-
		expressions <sup>1</sup>		Expressions	-
			name	Attribute	[ "Name" ]
			op	Operator	[ "Equals", "Not Equals", "Starts With", "Ends With" ]
			value	Value	-
		join		Conditions Above	[ "All", "Any" ]
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>					

**Table 112 vCenterConnection**

Data nesting information		Description	Range
value			
	productName	Category	"vCenter"
	name	Name	-
	ipAddress	IP Address/Host Name	-
	port	Port	-
	protocol	Protocol	-
	userID	User ID	-
	status	Status	-
	connectedTime	Connected Time	-

**Table 113 ESXiHost**

Data nesting information		Description	Range
value			

Data nesting information		Description	Range
	mold	Managed Object ID	-
	name	Name	-
	ipAddresses	IP Addresses	-
	wwns	WWNs	-

**Table 114 HostMode**

Data nesting information		Description	Range
value			
	hostMode <sup>1</sup>	Host Mode	-
	hostModeOption <sup>1</sup>	Host Mode Options	-
<p>1. See the Provisioning Guide for your storage system for details about the host mode and host mode options.</p>			

**Table 115 FabricConnections**

Data nesting information		Description	Range
value			-
	productName	Category	-
	name	Name	-
	ipAddress	IP Address/Host Name	-
	port	Port	-
	protocol	Protocol	-
	userID	User ID	-
	status	Status	-
	connectedTime	Connected Time	-

Table 116 ScriptForHostGroupNaming

Specifications of the script	Description
script	Function that is written in the syntax of ECMAScript 5. The following conditions of arguments and return must be satisfied.
arguments	<p>arguments[0]: The object with the following properties is passed as an argument:</p> <ul style="list-style-type: none"> <li>▪ mold: The ID of the host (Managed Object ID in vCenter)</li> <li>▪ name: The name of the host.</li> <li>▪ clusterName: The name of the cluster to which the host belongs.</li> <li>▪ clusterMold: The ID of the cluster to which the host belongs.(Managed Object ID in vCenter)</li> <li>▪ ipAddresses: The IP addresses for management of the host.</li> <li>▪ wwns: The WWNs of the host (: separated hex value)</li> </ul>
return	<p>Script must return the string that satisfies the following conditions:</p> <ol style="list-style-type: none"> <li>1. Available characters: Only alphanumeric characters and “_”</li> <li>2. The first character is alphabetic.</li> <li>3. Host Group Name is up to 64 characters.</li> </ol>
example	<pre>function(host) { /**  * Following attributes are available.  * * - host.moId: string  * The ID of the host (Managed Object ID in vCenter)  *  * - host.name: string  * The name of the host.  *  * - host.clusterName: string  * The name of the cluster to which the host belongs.  *  * - host.clusterMoId: string  * The ID of the cluster to which the host belongs.  * (Managed Object ID in vCenter)  *  * - host.ipAddresses: string  * The IP addresses for management of the host.  *  * - host.wwns: [string]  * The WWNs of the host (: separated hex value)  */ }</pre>

Specifications of the script	Description
	<pre> var hostGroupName = host.name; if (!hostGroupName) { hostGroupName = "HostGroupForDataStore"; } return hostGroupName; }                     </pre>

**Table 117 NamingScriptZone / NamingScriptHostZoneAlias / NamingScriptStorageZoneAlias**

Specifications of the script	Description
script	Function that is written in the syntax of ECMAScript 5. The following conditions of arguments and return must be satisfied.
arguments	<p>arguments[0]: The object with the following properties is passed as an argument:</p> <ul style="list-style-type: none"> <li>▪ hostname: Host name</li> <li>▪ hostPortWorldWideName: WWN of HBA. Separator notation is based on BNA.</li> <li>▪ storagePortWorldWideName: WWN of CHA. Separator notation is based on BNA.</li> <li>▪ storageSystemFamily: Display model name of the physical storage system</li> <li>▪ storageSystemName: Name of physical storage system on Configuration Manager</li> <li>▪ storageSystemSerialNumber: Serial number of physical storage system</li> <li>▪ storagePortName: Display port name of the storage system</li> <li>▪ virtualStorageArrayFamily: Display model name of virtual storage (if non-virtual, "-")</li> <li>▪ virtualStorageSystemName: Name of virtual storage on Configuration Manager (if non-virtual, "-")</li> <li>▪ virtualSerialNumber: Serial number of virtual storage (if non-virtual, "-")</li> <li>▪ serviceProperties: List of the service properties passed to the plug-in</li> </ul>
return	<p>Script must return the string that satisfies the following conditions:</p> <ol style="list-style-type: none"> <li>1. Available characters: Only alphanumeric characters and “_”</li> </ol>

Specifications of the script	Description
	<p>2. The first character is alphabetic.</p> <p>3. Zone is up to 60 characters, Zone Alias is up to 64 characters.</p> <p>4. About Zone, the string starting from "LSAN_", "TI_", "QOSHn+_ ", "QOSMn+_ ", "QOSLn_" is not allowed (case ignored. "n" is number.)</p>
example	<pre>(function(args) {   var name;   if(! args.virtualSerialNumber    args.virtualSerialNumber == "-"){     name = args.hostName + "_" + args.storageSystemName + "_" + args.storagePortName;   }else{     name = args.hostName + "_" + args.virtualStorageSystemName + "_" + args.storagePortName;   }   if (!(name === null    typeof(name) == "string"    name instanceof String)) {     throw new Error("Zone name must be a string: "+ name);   }   name = name.replace(/^[^A-Za-z0-9_]/g, '_');   if(name.length &gt; 60){     throw new Error("Zone name must be within 60 characters: "+ name);   }   if (/^[A-Z]/i.test(name) == false) {     throw new Error("Zone name must start with a alphabet: "+ name);   }   if (/^LSAN_/i.test(name)    /^TI_/i.test(name)    /^QOS[HML][0-9]+_/i.test(name)) {     throw new Error("Zone name has the prefix LSAN_, TI_ or QOSxx_ cannot be for normal zone: "+name);   }   return name; }) }</pre>

## Allocate Volumes, Fabric, and Datastore for ESXi Host (task details)

KeyName	Type	Description	Range
LUNPathConfigurationInformation	file	Stores the allocated LUN path information from the volume allocation results.	See the following file type property list
DatastoreInformation	file	Stores the new Datastore information.	See the following file type property list
/ExecuteZoningConfiguration/ ConfigureWwnZoning/ provisioning.taskResult.createdZoneConfigurations	file	Stores the new zone configuration.	See the following file type property list
/ExecuteZoningConfiguration/ ConfigureWwnZoning/ provisioning.taskResult.createdZones	file	Stores the new zone information.	See the following file type property list
/ExecuteZoningConfiguration/ ConfigureWwnZoning/ provisioning.taskResult.createdZoneAliases	file	Stores the new zone aliases.	See the following file type property list
/ExecuteZoningConfiguration/ ConfigureWwnZoning/ provisioning.taskResult.updatedZoneConfigurations	file	Stores the updated zone configuration.	See the following file type property list
/ExecuteZoningConfiguration/ ConfigureWwnZoning/ provisioning.taskResult.updatedZones	file	Stores the updated zone information.	See the following file type property list
/ExecuteZoningConfiguration/ ConfigureWwnZoning/ provisioning.taskResult.updatedZoneAliases	file	Stores the updated zone aliases.	See the following file type property list

Table 118 LUNPathConfigurationInformation

Data nesting information		Description	Range
value <sup>1</sup>			

Data nesting information		Description	Range
	hostName	Host Name	-
	volumeUsage	Volume Usage	-
	hostPort	Host Port	-
	storagePort	Storage Port	-
	lun	LUN	-
	portType	Port Type	-
	capacity	Capacity	-
	provisionedCapacity	Provisioned Capacity	-
	ldevId	Volume	-
	hostGroupNameOrIscsiTarget	Host Group Name/ iSCSI Target	-
	model	Model	-
	serialNumber	Serial No.	-
	ldevLabel	LDEV Label	-
	resourceGroupName	Resource Group	-
	virtualLdevId	Virtual LDEV ID	-
	virtualSerialNumber	Virtual Serial No.	-
	virtualModel	Virtual Model	-
	configurationManager	Configuration Manager	-
	poolId	Pool	-
	poolName	Pool Name	-
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 119 DataStoreInformation**

Data nesting information		Description	Range
value <sup>1</sup>			
	datastoreName	Datastore Name	-



Data nesting information		Description	Range
	canonicalName	Canonical Name	-
	datastoreAccessMode	Access Mode	-
	storageIOControlEnabled	I/O Control Enabled	-
	vmfsVersion	VMFS Version	-
	latencyThreshold	Latency Threshold	-
	throughputThreshold	Throughput Threshold	-
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 120 /ExecuteZoningConfiguration/ConfigureWwnZoning/  
provisioning.taskResult.createdZoneConfigurations**

Data nesting information		Description	Range
value <sup>1</sup>			
	name	Name	-
	zoneNames	Zone Names	-
	bnaname	Switch Management Server/ FOS_PrimarySwitch	-
	fabricName	Fabric Name	-
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 121 /ExecuteZoningConfiguration/ConfigureWwnZoning/  
provisioning.taskResult.createdZones**

Data nesting information		Description	Range
value <sup>1</sup>			
	name	Name	-
	displayName	Type	-
	aliasNames	Alias Names	-
	memberNames	Member Names	-

Data nesting information		Description	Range
	bnaname	Switch Management Server/ FOS_PrimarySwitch	-
	fabricName	Fabric Name	-
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 122 /ExecuteZoningConfiguration/ConfigureWwnZoning/  
provisioning.taskResult.createdZoneAliases**

Data nesting information		Description	Range
value <sup>1</sup>			
	name	Name	-
	memberNames	Member Names	-
	bnaname	Switch Management Server/ FOS_PrimarySwitch	-
	fabricName	Fabric Name	-
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 123 /ExecuteZoningConfiguration/ConfigureWwnZoning/  
provisioning.taskResult.updatedZoneConfigurations**

Data nesting information		Description	Range
value <sup>1</sup>			
	name	Name	-
	zoneNames	Zone Names	-
	bnaname	Switch Management Server/ FOS_PrimarySwitch	-
	fabricName	Fabric Name	-
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 124 /ExecuteZoningConfiguration/ConfigureWwnZoning/  
provisioning.taskResult.updatedZones**

Data nesting information		Description	Range
value <sup>1</sup>			
	name	Name	-
	type	Type	-
	aliasNames	Alias names	
	memberNames	Member names	
	bnaname	Switch Management Server/ FOS_PrimarySwitch	-
	fabricName	Fabric Name	-
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 125 /ExecuteZoningConfiguration/ConfigureWwnZoning/  
provisioning.taskResult.updatedZoneAliases**

Data nesting information		Description	Range
value <sup>1</sup>			
	name	Name	-
	memberNames	Member names	
	bnaname	Switch Management Server/ FOS_PrimarySwitch	-
	fabricName	Fabric Name	-
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

## Allocate Volumes with 2DC Remote Replication service properties

Use the following properties to modify or create values for the Allocate Volumes with 2DC Remote Replication service.

## Allocate Volumes with 2DC Remote Replication service (edit)

KeyName	Type	Description	Range	Default Value
ConfigurationManagerConnection	File	Specify the Configuration Manager Connection for P-Vols.	See the following File type property list	-
StorageSystem	File	Specify the Storage System for P-Vols.	See the following File type property list	-
ExistingOrCreateNewVolume	String	Specify whether to use existing volumes or create new ones.	"NewVolumes" or "Existing Volumes"	NewVolumes
ResourceGroupSelection	string	Specify whether to select resource group at volume allocation. If you select 'Meta resource', then the meta resource group will be selected.	"Meta resource" or "Manual"	Meta resource
ResourceGroup	File	Specify the Resource Group for P-Vols.	See the following File type property list	-
PoolSelection	string	Specify whether to select pool at volume allocation. If you select 'Automatic', then a pool will be selected automatically.	"Automatic" or "Manual"	Automatic
Pool	File	Specify the pool for P-Vols.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
CapacityFormat	String	Specify the volume capacity format as Byte or Block.	"Byte" or "Block"	Byte

KeyName	Type	Description	Range	Default Value
VolumeSettings	File	Specify the parameters required to create new volumes for P-Vols.	See the following File type property list	{{"volumeUsage": "OS", "numberOfVolumes": 1, "volumeCapacityInMiB": 153600, "blockCapacity": "314572800", "volumeLabel": "", "diskType": [], "idevSetting": {"idevIdStartsFrom": 0, "virtualdevIdStartsFrom": 0}, "lunSetting": {"lunStartsFrom": 0}}, {"volumeUsage": "App", "numberOfVolumes": 1, "volumeCapacityInMiB": 204800, "blockCapacity": "419430400", "volumeLabel": "", "diskType": [], "idevS

KeyName	Type	Description	Range	Default Value
				etting": {"devIdS tartsFro m":0,"virt ualLdevl dStartsFr om":0},"l unSettin g": {"lunStart sFrom":0 }}, {"volume Usage": "Data","n umberOf Volumes ":1,"volu meCapa cityInMiB ":460800 ,"blockC apacity": "943718 400","vol umeLab el":"","dis kType": [],"devS etting": {"devIdS tartsFro m":0,"virt ualLdevl dStartsFr om":0},"l unSettin g": {"lunStart sFrom":0 }}}

KeyName	Type	Description	Range	Default Value
VolumeFilter	file	Specify conditions for filtering the candidate volumes. Not all candidates are displayed when there are many candidate volumes. Specify the conditions to narrow down the volume list.	See the following File type property list	-
VolumeFilterJoinType	string	Specify the source volume filter join type.	"and" or "or"	and
RowsPage	integer	Specify the rows per page to display in the volumes.	100, 500, or 1000 (in dex)	1000
CurrentPage	integer	Specify the number of pages to display in the volumes.	1-integer maximum value	1
Volumes	file	Specify the volume to be used as the Primary Volume.	See the following File type property list	-
CapacitySavingFunction	String	Specify the Capacity Saving Function for target volumes.  Refer to your storage system product documentation for the optimal setting.	"None", "Compression", "Deduplication and Compression"	None
CapacitySavingMode	String	Specify the Capacity Saving Mode for target volumes.  Refer to your storage system product documentation for the optimal setting.	"Inline mode", "Post-process mode"	Post-process mode



KeyName	Type	Description	Range	Default Value
ResourceCriteria	File	Specify the resource criteria.	See the following File type property list	-
PortType	String	Specify the port type as Fibre or iSCSI.	"Fibre" or "iSCSI"	"Fibre"
HostMode	file	Specify the parameters for creating a new host group.	See the following File type property list	{"hostMode": "WIN_EX", "hostModeOption": []}
NumberOfHosts	string	Select the number of hosts to allocate per volume.	"Single" or "Multiple"	Single
MultipleHostsPerStoragePort <sup>1</sup>	boolean	Select to share storage ports with multiple hosts.	true or false	false
MultipleHostsPerHostGroup <sup>2</sup>	boolean	Select to share host groups with multiple hosts.	true or false	false
HostSettingsForSingleHost <sup>3</sup>	file	Specify information about the hosts where the volumes will be allocated.	See the following File type property list	{"hostName": "", "wwnSettings": [], "iScsiSettings": []}
HostSettingsForMultiHost <sup>1</sup>	file	Specify information about the hosts where the volumes will be allocated.	See the following File type property list	-
PrimaryFabricSettingEnabled	boolean	Specifying true enables fabric information collection functionality.	true or false	false

KeyName	Type	Description	Range	Default Value
PrimaryConnectionNames	String	Specify the connection name defined in the Web Service Connections on the Administration Tab. Separate multiple values by commas. If this value is omitted, the system uses all connections that are defined for the product name listed in the Web Service Connections.	-	-
PrimaryFabricResourcegroups	String	Specify the switch management server resource group. Separate multiple values by commas.	-	"All"
PrimaryTargetFabrics	String	Specify the fabric name. Separate multiple values by commas. If this value is omitted, the system uses all the fabrics that the BNA monitors.	-	-
PrimaryUsingExistingZone	boolean	Specifies whether to select a predefined zone or any connectable path. If you specify True, the system selects paths within the range of the existing Zone setting. If you specify False, the system selects connectable paths regardless of the existing Zone setting.	true or false	true

KeyName	Type	Description	Range	Default Value
PrimaryFabricHopsRestriction	boolean	Determines whether the service will fail if there is no path that matches the specified collection range.	true or false	false
PrimaryZoneSettingEnabled	boolean	Specify True to enable the modify zone settings functionality.	true or false	false
PrimaryUseExistingZoneAliases	boolean	Specify True to use predefined Zone Aliases regardless of the naming conventions the user specifies. If you specify False, the system selects Zone Aliases that follow the naming conventions. In either case, if there are no existing Zone Aliases, the system creates new Zone Aliases that follow the naming conventions.	true or false	false
PrimaryUpdateActiveZoneConfiguration	boolean	Specify True to add a Zone to the active Zone Configuration.	true or false	true
PrimaryZoneConfigurationNameToUpdate	String	To add a zone to a Zone Configuration other than the active configuration, specify the name of the Zone Configuration in which to add the zone.	-	-

KeyName	Type	Description	Range	Default Value
PrimaryNamingScriptZone	File	Specify the naming convention script that determines the Zone name for the path.	See the following script specifications	See the following script example.
PrimaryNamingScriptHostZoneAlias	File	Specify the naming convention script that determines the Zone Alias name for the host port.	See the following script specifications	See the following script example.
PrimaryNamingScriptStorageZoneAlias	File	Specify the zone information.	See the following script specifications	See the following script example.
SecondaryConfigurationManagerConnection	File	Specify the Configuration Manager Connection for S-Vols.	See the following File type property list	-
SecondaryStorageSystem	File	Specify the Storage System for S-Vols.	See the following File type property list	-
SecondaryExistingOrCreateNewVolume	string	Specify whether to use existing volumes or create new ones.	"New Volumes" or "Existing Volumes"	New Volumes
SecondaryResourceGroupSelection	string	Specify whether to select resource group at volume allocation. If you select 'Meta resource', then the meta resource group will be selected.	"Meta Resource" or "Manual"	Meta Resource
SecondaryResourceGroup	File	Specify the Resource Group for S-Vols.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
SecondaryPoolSelection	string	Specify whether to select pool at volume allocation. If you select 'Automatic', then a pool will be selected automatically.	"Automatic" or "Manual"	Automatic
SecondaryPool	File	Specify the pool for S-Vols.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
SecondaryVolumeSettings	File	Specify the parameters required to create new volumes for S-Vols.	See the following File type property list	<pre>[{"volumeUsage": "OS", "volumeLabel": "", "diskType": [], "devSetting": {"devIdStartsFrom": 0, "virtualDevStartsFrom": 0}, "lunSetting": {"lunStartsFrom": 0}}, {"volumeUsage": "App", "volumeLabel": "", "diskType": [], "devSetting": {"devIdStartsFrom": 0, "virtualDevStartsFrom": 0}, "lunSetting": {"lunStartsFrom": 0}}, {"volumeUsage": "Data", "volumeLabel": "", "diskType": [], "devSetting":</pre>

KeyName	Type	Description	Range	Default Value
				{ "devIdS tartsFrom":0, "virtualdev dStartsFrom":0}, "l unSetting": { "lunStart sFrom":0 }}
SecondaryVolumeForExistingPVol	file	Specify the parameters required to create new volumes.	See the following File type property list	-
SecondaryVolumeFilter	file	Specify conditions for filtering the candidate volumes. Not all candidates are displayed when there are many candidate volumes. Specify the conditions to narrow down the volume list.	See the following File type property list	-
SecondaryVolumeFilterJoinType	string	Specify the source volume filter join type.	"and" or "or"	and
SecondaryRowsPage	integer	Specify the rows per page to display in the volumes.	100, 500 or 1000 (in dex)	1000
SecondaryCurrentPage	integer	Specify the number of pages to display in the volumes.	1-integer maximum value	1
SecondaryVolumes	file	Specify the volume to be used as the Secondary Volume.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
SecondaryCapacitySavingFunction	String	Specify the Capacity Saving Function for target volumes.  Refer to your storage system product documentation for the optimal setting.	"None", "Compression", "Deduplication and Compression"	None
SecondaryCapacitySavingMode	String	Specify the Capacity Saving Mode for target volumes.  Refer to your storage system product documentation for the optimal setting.	"Inline mode", "Post-process mode"	Post-process mode
SecondaryResourceCriteria	File	Specify the resource criteria.	See the following File type property list	-
SecondaryResourceCriteriaForExistingPVol	File	Specify the resource criteria.	See the following File type property list	-
SecondaryPortType	String	Specify the port type as Fibre or iSCSI.	"Fibre" or "iSCSI"	"Fibre"
SecondaryHostMode	file	Specify the parameters to create a new host group.	See the following File type property list	{"hostMode": "WIN_EX", "hostModeOption": []}
SecondaryNumberOfHosts	string	Select the number of hosts to allocate per volume.	"Single" or "Multiple"	Single
SecondaryMultipleHostsPerStoragePort <sup>1</sup>	boolean	Select to share storage ports with multiple hosts.	true or false	false



KeyName	Type	Description	Range	Default Value
SecondaryMultipleHostsPerHostGroup <sup>2</sup>	boolean	Select to share host groups with multiple hosts.	true or false	false
SecondaryHostSettingForSingleHost <sup>3</sup>	file	Specify information about the hosts where the volumes will be allocated.	See the following File type property list	{"hostName":"","wwnSettings": [],"iScsiSettings": []}
SecondaryHostSettingForMultiHost <sup>1</sup>	file	Specify information about the hosts where the volumes will be allocated.	See the following File type property list	-
SecondaryFabricSettingEnabled	boolean	Specifying true enables fabric information collection functionality.	true or false	false
SecondaryConnectionNames	String	Specify the connection name defined in the Web Service Connections on the Administration Tab. Separate multiple values by commas. If this value is omitted, the system uses all connections that are defined for the product name listed in the Web Service Connections.	-	-
SecondaryFabricResourceGroups	String	Specify the switch management server resource group. Separate multiple values by commas.	-	"All"

KeyName	Type	Description	Range	Default Value
SecondaryTargetFabrics	String	Specify the fabric name. Separate multiple values by commas. If this value is omitted, the system uses all the fabrics that the BNA monitors.	-	-
SecondaryUsingExistingZone	boolean	Specifies whether to select a predefined zone or any connectable path. If you specify True, the system selects paths within the range of the existing Zone setting. If you specify False, the system selects connectable paths regardless of the existing Zone setting.	true or false	true
SecondaryFabricHopsRestriction	boolean	Determines whether the service will fail if there is no path that matches the specified collection range.	true or false	false
SecondaryZoneSettingEnabled	boolean	Specify True to enable the modify zone settings functionality.	true or false	false

KeyName	Type	Description	Range	Default Value
SecondaryUseExistingZoneAliases	boolean	Specify True to use predefined Zone Aliases regardless of the naming conventions the user specifies. If you specify False, the system selects Zone Aliases that follow the naming conventions. In either case, if there are no existing Zone Aliases, the system creates new Zone Aliases that follow the naming conventions.	true or false	false
SecondaryUpdateActiveZoneConfiguration	boolean	Specify True to add a Zone to the active Zone Configuration.	true or false	true
SecondaryZoneConfigurationNameToUpdate	String	To add a zone to a Zone Configuration other than the active configuration, specify the name of the Zone Configuration in which to add the zone.	-	-
SecondaryNamingScriptZone	File	Specify the naming convention script that determines the Zone name for the path.	See the following script specifications	See the following script example.
SecondaryNamingScriptHostZoneAlias	File	Specify the naming convention script that determines the Zone Alias name for the host port.	See the following script specifications	See the following script example.

KeyName	Type	Description	Range	Default Value
SecondaryNamingScriptStorageZoneAlias	File	Specify the zone information.	See the following script specifications	See the following script example.
ReplicationType	String	Specify the pair type.	"Synchronous Remote Clone" or "Asynchronous Remote Clone"	"Synchronous Remote Clone"
ExistingOrCreateNewCopyGroup	String	Specify whether to use an existing copy group or create a new one.	"New Copy Group" or "Existing Copy Group"	"New Copy Group"
CopyGroupName	String	Specify the name of the new copy group to create.  When "ExistingOrCreateNewCopyGroup" is "New Copy Group", CopyGroupName can be specified.	The length should be less than 29.  The string should consist of the following character set. A-Z,a-z,0-9,-,.,:,@,_  A string beginning with '-' is not allowed.	-
ExistingCopyGroup	File	Specify the existing copy group.  When "ExistingOrCreateNewCopyGroup" is "Existing Copy Group", ExistingCopyGroup can be specified.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
CopyPace	integer	Specify the copy speed. The larger value you specify the faster the copy speed will be.  When "ReplicationType" is "Synchronous Remote Clone", CopyPace can be specified.	1 to 15 (in dex)	3
FenceLevelForSync	String	Specify the fence level.  When "ReplicationType" is "Synchronous Remote Clone", FenceLevelForSync can be specified.	"NEVER" or "STATUS" or "DATA"	"DATA"
FenceLevelForAsync	String	Specify the fence level.  When "ReplicationType" is "Asynchronous Remote Clone", FenceLevelForAsync can be specified.	"ASYNC"	"ASYNC"
PrimaryJNLG	File	Specify the journal group of the primary volume.  When "ReplicationType" is "Asynchronous Remote Clone" and "ExistingOrCreateNewCopyGroup" is "New Copy Group", PrimaryJNLG can be specified.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
SecondaryJNLG	File	Specify the journal group of the secondary volume.  When "ReplicationType" is "Asynchronous Remote Clone" and "ExistingOrCreateNewCopyGroup" is "New Copy Group", SecondaryJNLG can be specified.	See the following File type property list	-
UseTheNocopyOption	boolean	Specify whether to perform initial copy when creating a pair.	true or false	true
AssignCTG	boolean	Specify whether to register the new pairs in a consistency group.  When "ReplicationType" is "Synchronous Remote Clone" or "Global-active Device" and "ExistingOrCreateNewCopyGroup" is "New Copy Group", AssignCTG can be specified.	true or false	true

KeyName	Type	Description	Range	Default Value
CTGIDSelection	String	<p>Specify whether to select the consistency group ID automatically or manually.</p> <p>When "ReplicationType" is "Synchronous Remote Clone" or "Global-active Device" and "ExistingOrCreateNewCopyGroup" is "New Copy Group" and "AssignCTG" is true, or when "ReplicationType" is "Asynchronous Remote Clone" and "ExistingOrCreateNewCopyGroup" is "New Copy Group", CTGIDSelection can be specified.</p>	"Auto Selection" or "Manual Selection"	"Auto Selection"
CTGID	String	<p>Specify the consistency group ID by using a hexadecimal (base 16) number.</p> <p>When "CTGIDSelection" is "Manual Selection", CTGID can be specified.</p>	<p>The range of selectable CTG ID is changed due to specified primary and secondary storage systems as follows:</p> <ul style="list-style-type: none"> <li>▪ VSP G200 0 to F (in hex)</li> <li>▪ VSP G400, G600, VSP F400, F600, VSP N400, N600 0 to 3F (in hex)</li> </ul>	

KeyName	Type	Description	Range	Default Value
			<ul style="list-style-type: none"> <li>▪ VSP One B28, VSP One B26, VSP One B24, VSP E1090, VSP E1090H, VSP E590, VSP E790, VSP E590H, VSP E790H, VSP G130, VSP G350, VSP G370, VSP G700, VSP F350, VSP F370, VSP F700, VSP G800, VSP F800, VSP N800 0 to 7F (in hex)</li> </ul>	



KeyName	Type	Description	Range	Default Value
			<ul style="list-style-type: none"> <li>▪ VSP E990, VSP G900, VSP F900, VSP G1000, VSP P G1500, VSP P F1500 0 to FF (in hex)</li> <li>▪ VSP 5100, 5500, 5100H, 5500H, VSP 5200, 5600, 5200H, 5600H 0 to 3FF (in hex)</li> </ul> <p>When storage models are different between the primary and the secondary, the narrower range takes precedence.</p>	
MUNumberSelection	String	<p>Specify whether to select the MU (mirror unit) number automatically or manually.</p> <p>When "ReplicationType" is "Asynchronous Remote Clone" and "ExistingOrCreateNewCopyGroup" is "New Copy Group", MUNumberSelection can be specified.</p>	"Auto Selection" or "Manual Selection"	"Auto Selection"

KeyName	Type	Description	Range	Default Value
MUNumber	String	Specify the MU (mirror unit) number by using a number from 0 to 3.  When "MUNumberSelection" is "Manual Selection", MUNumber can be specified.	0 to 3	0
PathGroupIDSelection	String	Specify whether to select the path group ID automatically or manually.	"Auto Selection" or "Manual Selection"	"Auto Selection"
PathGroupID	String	Specify the path group ID by using a hexadecimal (base 16) number in the range from 00 to FF.  When "PathGroupIDSelection" is "Manual Selection", PathGroupID can be specified.	00 to FF (in hex)	00
ReductionForceCopy	boolean	Specify whether to forcibly create a pair for the volume for which the capacity saving function (deduplication and compression) is enabled.	true or false	false
DeltaResyncSuspend	boolean	Specify whether to use delta resync between the storage systems of the secondary sites.	true or false	false
<ol style="list-style-type: none"> <li>1. When "NumberOfHosts" is "Multiple"</li> <li>2. When "MultipleHostsPerStoragePort" is true</li> </ol>				

KeyName	Type	Description	Range	Default Value
3. When "NumberOfHosts" is "Single"				

**File type property list**

**Table 126 ConfigurationManagerConnection**

Data nesting information		Description	Range
value			
	productName	Product name of registering to Web Service Connection	"ConfigurationManager"
	name	Name	-
	ipAddress	IpAddress	-
	port	Port	-
	protocol	Protocol	-
	userID	UserID	-
	status	Status of the connection	-
	connectedTime	Connected time	-

**Table 127 StorageSystem**

Data nesting information		Description	Range
value			
	storageDeviceId	Storage Device ID	-
	model	Model	-
	serialNumber	Serial Number	-
	svplp	SVP IP Address	-

**Table 128 ResourceGroup**

Data nesting information		Description	Range
value			

Data nesting information		Description	Range
	resourceGroupId	Resource Group ID	-
	resourceGroupName	Resource Group Name	-
	virtualStorageId	Virtual Storage System ID	-

Table 129 Pool

Data nesting information		Description	Range
value			
	poolId	Pool ID	-
	poolName	Pool name	-
	poolType	Pool Type	-
	usedCapacityRate	Used capacity rate	-
	availableVolumeCapacity	Available Volume capacity	-
	totalPoolCapacity	Total Pool capacity	-
	numOfLdevs	Number of LDEVs	-

Table 130 VolumeSettings

Data nesting information		Description	Range
value <sup>1</sup>			
	volumeUsage	Volume Usage	A maximum of 64 characters can be entered. And the string should be consisted from only following character set. A-Z,a-z,0-9,~,!,@,#,\$,%,&,(,)_,+,-,=,{,},[,],',,`
	numberOfVolumes	Number of Volumes	1-500
	ldevIdStartsFrom	LDEV ID Starts from	0-FFFFFF
	volumeCapacityInMiB <sup>2</sup>	Volume Capacity	-
	blockCapacity <sup>3</sup>	Volume Capacity	-

Data nesting information		Description	Range
	volumeLabel	Volume Label	A maximum of 32 characters can be entered. And the string should be consisted from only following character set. A-Z,a-z,0-9,!,#,\$,%,&,',(,)+,-,;,=@, [.,^,_,`,{},~,/\
	lunStartsFrom	LUN Starts From	0-07FF
	virtualLdevIdStartsFrom	Virtual LDEV ID Starts From	0-FEFF
<ol style="list-style-type: none"> <li>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.</li> <li>2. When "CapacityFormat" is "Byte", volumeCapacityInMiB can be specified.</li> <li>3. When "CapacityFormat" is "Block", blockCapacity can be specified.</li> </ol>			

**Table 131 VolumeFilter**

Data nesting information		Description	Range
value <sup>1</sup>			
	field	Field	"LDEV ID (Dec)", "LDEV ID (Hex)", "Label", "Pool ID", "Port ID", "Host Group Name"
	operator	Operator	When you specify "LDEV ID (Dec)" or "LDEV ID (Hex)" or "Pool ID", the following operators can be specified: "=", "<", ">", "<=", ">=", "!=".  When you specify "Label" or "Port ID" or "Host Group Name", the following operators can be specified: "=", "!=", "startsWith", "endsWith".
	value	Value	-
<ol style="list-style-type: none"> <li>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</li> </ol>			

**Table 132 Volumes**

Data nesting information		Description	Range
value <sup>1</sup>			
	ldevId	LDEV ID	-
	virtualLdevId	Virtual LDEV ID	-

Data nesting information		Description	Range
	label	Label	-
	resourceGroupId	Resource group ID	-
	poolId	Pool ID	-
	byteFormatCapacity	Capacity	-
	blockCapacity	Block capacity	-
	lun	LUN ID	-
	copyPairAttributes	Copy pair attributes	
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 133 ResourceCriteria**

Data nesting information		Description	Range
value <sup>1</sup>			
	volumeUsage <sup>2</sup>	Volume Usage	-
	storagePortCriteria	Storage Port Criteria	-
		expressions <sup>1</sup>	Condition
		name	Attribute
		op	Operator Type
		value	Value
		join	Join condition of the Expressions
<p>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.                  2. Select from volume usage specified in "Volume Settings".</p>			

Table 134 HostMode

Data nesting information		Description	Range
value			
	hostMode <sup>1</sup>	Host Mode	-
	hostModeOptions <sup>1</sup>	Host Mode Options	-
<p>1. See the Provisioning Guide for your storage system for details about the host mode and host mode options.</p>			

Table 135 HostSettingsForSingleHost

Data nesting information		Description	Range
value			
	hostName	Host name	A maximum of 64 characters can be entered.
	wwnSettings <sup>1, 2</sup>		-
	wwn	WWN	16 characters in hexadecimal.
	wwnNickname	WWN nickname	A maximum of 64 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,:,@,_ The string cannot start with a hyphen (-).
	enableALUA	Enable Asymmetric Logical Unit Access (ALUA)	true or false
	enableHMONonPreferred	Enable HMO non preferred	true or false
	iScsiSettings <sup>1, 3</sup>	iSCSI settings	-

Data nesting information			Description	Range
		iScsiName	iSCSI name	Specify in iqn format or eui format. -iqn format: Specify 5-223 characters by using the following characters: a-z,0-9,.,-,: - eui format: Specify 20 characters in hexadecimal.
		iScsiNickname	iSCSI nickname	A maximum of 32 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,@,_  The string cannot start with a hyphen (-).
<ol style="list-style-type: none"> <li>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</li> <li>2. When "PortType" is "Fibre", wwnSettings can be specified.</li> <li>3. When "PortType" is "iSCSI", iScsiSettings can be specified.</li> </ol>				

**Table 136 HostSettingsForMultiHost**

Data nesting information			Description	Range
value				
	hostName		Host name	A maximum of 64 characters can be entered.
	wwnSettings <sup>1, 2</sup>			-
		wwn	WWN	16 characters in hexadecimal.
		wwnNickname	WWN nickname	A maximum of 64 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,@,_  The string cannot start with a hyphen (-).



Data nesting information		Description	Range
	enableALUA	Enable Asymmetric Logical Unit Access (ALUA)	true or false
	enableHMONonPreferred	Enable HMO non preferred	true or false
	iScsiSettings <sup>1, 3</sup>	iSCSI settings	-
	iScsiName	iSCSI name	Specify in iqn format or eui format. -iqn format: Specify 5-223 characters by using the following characters: a-z,0-9,.,-,: - eui format: Specify 20 characters in hexadecimal.
	iScsiNickname	iSCSI nickname	A maximum of 32 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,@,_  The string cannot start with a hyphen (-).
<ol style="list-style-type: none"> <li>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</li> <li>2. When "PortType" is "Fibre", wwnSettings can be specified.</li> <li>3. When "PortType" is "iSCSI", iScsiSettings can be specified.</li> </ol>			

Table 137 SecondaryConfigurationManagerConnection

Data nesting information		Description	Range
value			
	productName	Product name of registering to Web Service Connection	"ConfigurationManager"
	name	Name	-
	ipAddress	IpAddress	-
	port	Port	-

Data nesting information		Description	Range
	protocol	Protocol	-
	userID	UserID	-
	status	Status of the connection	-

Table 138 SecondaryStorageSystem

Data nesting information		Description	Range
value			
	storageDeviceId	Storage Device ID	-
	model	Model	-
	serialNumber	Serial Number	-
	svplp	SVP IP Address	-

Table 139 SecondaryResourceGroup

Data nesting information		Description	Range
value			
	resourceGroupId	Resource Group ID	-
	resourceGroupName	Resource Group Name	-
	virtualStorageId	Virtual Storage System ID	-

Table 140 SecondaryPool

Data nesting information		Description	Range
value			
	poolId	Pool ID	-
	poolName	Pool name	-
	poolType	Pool Type	-
	usedCapacityRate	Used capacity rate	-
	availableVolumeCapacity	Available Volume capacity	-

Data nesting information		Description	Range
	totalPoolCapacity	Total Pool capacity	-
	numOfLdevs	Number of LDEVs	-

**Table 141 SecondaryVolumeSettings**

Data nesting information		Description	Range
value <sup>1</sup>			
	volumeUsage <sup>2</sup>	Volume Usage	A maximum of 64 characters can be entered. And the string should be consisted from only following character set. A-Z,a-z,0-9,~,!,@,#,\$,%,&,(),_+,-,=,{,},[,],',`
	ldevIdStartsFrom	LDEV ID Starts from	0-FFFFFF
	volumeLabel	Volume Label	A maximum of 32 characters can be entered. And the string should be consisted from only following character set. A-Z,a-z,0-9,!,#,\$,%,&',(,),+,-,;,=@,[,],^,_,`,{,},~,/\
	lunStartsFrom	LUN Starts From	0-07FF
	virtualLdevIdStartsFrom	Virtual LDEV ID Starts From	0-FEFF
<p>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.</p> <p>2. Select from volume usages specified in Volume Settings".</p>			

**Table 142 SecondaryVolumeSettingsForExistingPVol**

Data nesting information		Description	Range
value <sup>1</sup>			
	PvolLdevId	Primary volume LDEV ID	
	ldevIdStartsFrom	LDEV ID starts from	0-FFFFFF

Data nesting information		Description	Range
	volumeLabel	Volume label	A maximum of 32 characters can be entered. The string must consist of the following characters A-Z,a-z,0-9,!,#,\$,%,&,'(,),+,-,;,=@, [ ], ^, _ , ` , { , } , ~ , / , \
	lunStartsFrom	LUN starts from	0-07FF
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 143 SecondaryVolumeFilter**

Data nesting information		Description	Range
value <sup>1</sup>			
	field	Field	"LDEV ID (Dec)", "LDEV ID (Hex)", "Label", "Pool ID", "Port ID", "Host Group Name"
	operator	Operator	When you specify "LDEV ID (Dec)" or "LDEV ID (Hex)" or "Pool ID", the following operators can be specified: "=", "<", ">", "<=", ">=", "!=".  When you specify "Label" or "Port ID" or "Host Group Name", the following operators can be specified: "=", "!", "startsWith", "endsWith".
	value	Value	-
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 144 SecondaryVolumes**

Data nesting information		Description	Range
value <sup>1</sup>			
	PvolLdevId	Primary Volume LDEV ID	-
	volumes	Volumes	-
	ldevId	LDEV ID	-
	virtualLdevId	Virtual LDEV ID	-
	label	Label	-

Data nesting information			Description	Range
		resourceGroupId	Resource group ID	-
		poolId	Pool ID	-
		byteFormatCapacity	Capacity	-
		blockCapacity	Block capacity	-
		lun	LUN ID	-
		copyPairAttributes	Copy pair attributes	
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>				

**Table 145 SecondaryResourceCriteria**

Data nesting information				Description	Range
value <sup>1</sup>					
	volumeUsage <sup>2</sup>			Volume Usage	-
	storagePortCriteria			Storage Port Criteria	-
		expressions <sup>1</sup>		Condition	-
			name	Attribute	"Name"
			op	Operator Type	"Equals", "Not Equals", "Starts With", "Ends With"
			value	Value	-
		join		Join condition of the Expressions	"All", "Any"
<p>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.                  2. Select from volume usage specified in "Volume Settings".</p>					

**Table 146 SecondaryResourceCriteriaForExistingPVol**

Data nesting information			Description	Range
value <sup>1</sup>				

Data nesting information				Description	Range
	PvolLdevId			Primary volume LDEV ID	-
	storagePortCriteria			Storage port criteria	-
		expressions <sup>1</sup>		Condition	-
			name	Attribute	"Name"
			op	Operator type	"Equals", "Not Equals", "Starts With", "Ends With"
			value	Value	-
		join		Join condition of the expressions	"All", "Any"
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>					

**Table 147 SecondaryHostMode**

Data nesting information			Description	Range
value				
	hostMode <sup>1</sup>		Host Mode	-
	hostModeOptions <sup>1</sup>		Host Mode Options	-
<p>1. See the Provisioning Guide for your storage system for details about the host mode and host mode options.</p>				

**Table 148 SecondaryHostSettingsForSingleHost**

Data nesting information			Description	Range
value				
	hostName		Host name	A maximum of 64 characters can be entered.
	wwnSettings <sup>1, 2</sup>			-
		wwn	WWN	16 characters in hexadecimal.

Data nesting information			Description	Range
		wwnNickname	WWN nickname	A maximum of 64 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,:,@,_  The string cannot start with a hyphen (-).
		enableALUA	Enable Asymmetric Logical Unit Access (ALUA)	true or false
		enableHMONonPreferred	Enable HMO non preferred	true or false
	iScsiSettings <sup>1, 3</sup>		iSCSI settings	-
		iScsiName	iSCSI name	Specify in iqn format or eui format. -iqn format: Specify 5-223 characters by using the following characters: a-z,0-9,.,-,: - eui format: Specify 20 characters in hexadecimal.
		iScsiNickname	iSCSI nickname	A maximum of 32 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,:,@,_  The string cannot start with a hyphen (-).
<ol style="list-style-type: none"> <li>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</li> <li>2. When "PortType" is "Fibre", wwnSettings can be specified.</li> <li>3. When "PortType" is "iSCSI", iScsiSettings can be specified.</li> </ol>				

Table 149 SecondaryHostSettingsForMultiHost

Data nesting information			Description	Range
value				
	hostName		Host name	A maximum of 64 characters can be entered.
	wwnSettings <sup>1, 2</sup>			-
		wwn	WWN	16 characters in hexadecimal.
		wwnNickname	WWN nickname	A maximum of 64 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,:,@,_ The string cannot start with a hyphen (-).
		enableALUA	Enable Asymmetric Logical Unit Access (ALUA)	true or false
		enableHMONonPreferred	Enable HMO non preferred	true or false
	iScsiSettings <sup>1, 3</sup>		iSCSI settings	-
		iScsiName	iSCSI name	Specify in iqn format or eui format. -iqn format: Specify 5-223 characters by using the following characters: a-z,0-9,.,-,: - eui format: Specify 20 characters in hexadecimal.
		iScsiNickname	iSCSI nickname	A maximum of 32 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,:,@,_ The string cannot start with a hyphen (-).



Data nesting information	Description	Range
1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.		
2. When "PortType" is "Fibre", wwnSettings can be specified.		
3. When "PortType" is "iSCSI", iScsiSettings can be specified.		

Table 150 ExistingCopyGroup

Data nesting information	Description	Range
value		
copyGroupName	Copy Group Name	-
muNumber	MU Number	-
localDeviceGroupName	Local Device Group Name	-
remoteDeviceGroupName	Remote Device Group Name	-

Table 151 PrimaryJNLG

Data nesting information	Description	Range
value		
journalId	Journal ID	-
journalStatus	Status	-
byteFormatCapacity	Capacity	-

Table 152 SecondaryJNLG

Data nesting information	Description	Range
value		
journalId	Journal ID	-
journalStatus	Status	-
byteFormatCapacity	Capacity	-

## Script specifications

Table 153 PrimaryNamingScriptZone

Script specifications	Description
script	Function that is written in the syntax of ECMAScript 5. The following conditions of arguments and return must be satisfied.
arguments	<p>arguments[0]: The object with the following properties is passed as an argument:</p> <ul style="list-style-type: none"> <li>▪ hostname: Host name</li> <li>▪ hostPortWorldWideName: WWN of HBA. Separator notation is based on BNA.</li> <li>▪ storagePortWorldWideName: WWN of CHA. Separator notation is based on BNA.</li> <li>▪ storageSystemFamily: Display model name of the physical storage system.</li> <li>▪ storageSystemName: Name of physical storage system on Configuration Manager.</li> <li>▪ storageSystemSerialNumber: Serial number of physical storage system.</li> <li>▪ storagePortName: Display port name of the storage system.</li> <li>▪ virtualStorageArrayFamily: Display model name of virtual storage (if non-virtual, "-").</li> <li>▪ virtualStorageSystemName: Name of virtual storage on Configuration Manager (if non-virtual, "-").</li> <li>▪ virtualSerialNumber: Serial number of virtual storage (if non-virtual, "-").</li> <li>▪ serviceProperties: List of the service properties passed to the plug-in.</li> </ul>
return	<p>Script must return the string that satisfies the following conditions:</p> <ol style="list-style-type: none"> <li>1. Available characters: Only alphanumeric characters and “_”</li> <li>2. The first character is alphabetic</li> <li>3. Zone is up to 60 characters, Zone Alias is up to 64 characters</li> <li>4. About Zone, the string starting from "LSAN_", "TI_", "QOSHn+_ ", "QOSMn+_ ", "QOSLn_" is not allowed (case ignored. "n" is number.)</li> </ol>

## Allocate Volumes with 2DC Remote Replication service (submit)

KeyName	Type	Description	Range	Default Value
ConfigurationManagerConnection	File	Specify the Configuration Manager Connection for P-Vols.	See the following File type property list	-
StorageSystem	File	Specify the Storage System for P-Vols.	See the following File type property list	-
ExistingOrCreateNewVolume	String	Specify whether to use existing volumes or create new ones.	"NewVolumes" or "Existing Volumes"	NewVolumes
ResourceGroupSelection	string	Specify whether to select resource group at volume allocation. If you select 'Meta resource', then the meta resource group will be selected.	"Meta resource" or "Manual"	Meta resource
ResourceGroup	File	Specify the Resource Group for P-Vols.	See the following File type property list	-
PoolSelection	string	Specify whether to select pool at volume allocation. If you select 'Automatic', then a pool will be selected automatically.	"Automatic" or "Manual"	Automatic
Pool	File	Specify the pool for P-Vols.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
CapacityFormat	String	Specify the volume capacity format as Byte or Block.	"Byte" or "Block"	Byte

KeyName	Type	Description	Range	Default Value
VolumeSettings	File	Specify the parameters required to create new volumes for P-Vols.	See the following File type property list	{{"volumeUsage": "OS", "numberOfVolumes": 1, "volumeCapacityInMiB": 153600, "blockCapacity": "314572800", "volumeLabel": "", "diskType": [], "idevSetting": {"idevIdStartsFrom": 0, "virtualdevIdStartsFrom": 0}, "lunSetting": {"lunStartsFrom": 0}}, {"volumeUsage": "App", "numberOfVolumes": 1, "volumeCapacityInMiB": 204800, "blockCapacity": "419430400", "volumeLabel": "", "diskType": [], "idevS

KeyName	Type	Description	Range	Default Value
				etting": {"devIdS tartsFro m":0,"virt ualLdevl dStartsFr om":0},"l unSettin g": {"lunStart sFrom":0 }}, {"volume Usage": "Data","n umberOf Volumes ":1,"volu meCapa cityInMiB ":460800 ,"blockC apacity": "943718 400","vol umeLab el":"","dis kType": [],"devS etting": {"devIdS tartsFro m":0,"virt ualLdevl dStartsFr om":0},"l unSettin g": {"lunStart sFrom":0 }}}

KeyName	Type	Description	Range	Default Value
VolumeFilter	file	Specify conditions for filtering the candidate volumes. Not all candidates are displayed when there are many candidate volumes. Specify the conditions to narrow down the volume list.	See the following File type property list	-
VolumeFilterJoinType	string	Specify the source volume filter join type.	"and" or "or"	and
RowsPage	integer	Specify the rows per page to display in the volumes.	100, 500, or 1000 (in dex)	1000
CurrentPage	integer	Specify the number of pages to display in the volumes.	1-integer maximum value	1
Volumes	file	Specify the volume to be used as the Primary Volume.	See the following File type property list	-
SecondaryCapacitySavingFunction	String	Specify the Capacity Saving Function for target volumes.  Refer to your storage system product documentation for the optimal setting.	"None", "Compression", "Deduplication and Compression"	None
SecondaryCapacitySavingMode	String	Specify the Capacity Saving Mode for target volumes.  Refer to your storage system product documentation for the optimal setting.	"Inline mode", "Post-process mode"	Post-process mode

KeyName	Type	Description	Range	Default Value
ResourceCriteria	File	Specify the resource criteria.	See the following File type property list	-
PortType	String	Specify the port type as Fibre or iSCSI.	"Fibre" or "iSCSI"	"Fibre"
HostMode	file	Specify the parameters for creating a new host group.	See the following File type property list	{"hostMode": "WIN_EX", "hostModeOption": []}
NumberOfHosts	string	Select the number of hosts to allocate per volume.	"Single" or "Multiple"	Single
MultipleHostsPerStoragePort <sup>1</sup>	boolean	Select to share storage ports with multiple hosts.	true or false	false
MultipleHostsPerHostGroup <sup>2</sup>	boolean	Select to share host groups with multiple hosts.	true or false	false
HostSettingsForSingleHost <sup>3</sup>	file	Specify information about the hosts where the volumes will be allocated.	See the following File type property list	"{\\"hostName\\": \"\", \"wwnSettings\\": [], \"iScsiSettings\\": []}"
HostSettingsForMultiHost <sup>1</sup>	file	Specify information about the hosts where the volumes will be allocated.	See the following File type property list	-



KeyName	Type	Description	Range	Default Value
PrimaryZoneConfigurationNameToUpdate	String	To add a zone to a Zone Configuration other than the active configuration, specify the name of the Zone Configuration in which to add the zone.	-	-
PrimaryNamingScriptZone	File	Specify the naming convention script that determines the Zone name for the path.	See the following script specifications	-
PrimaryNamingScriptHostZoneAlias	File	Specify the naming convention script that determines the Zone Alias name for the host port.	See the following script specifications	-
PrimaryNamingScriptStorageZoneAlias	File	Specify the zone information.	See the following script specifications	-
SecondaryConfigurationManagerConnection	File	Specify the Configuration Manager Connection for S-Vols.	See the following File type property list	-
SecondaryStorageSystem	File	Specify the Storage System for S-Vols.	See the following File type property list	-
SecondaryExistingOrCreateNewVolume	string	Specify whether to use existing volumes or create new ones.	"New Volumes" or "Existing Volumes"	New Volumes

KeyName	Type	Description	Range	Default Value
SecondaryResourceGroupSelection	string	Specify whether to select resource group at volume allocation. If you select 'Meta resource', then the meta resource group will be selected.	"Meta Resource" or "Manual"	Meta Resource
SecondaryResourceGroup	File	Specify the Resource Group for S-Vols.	See the following File type property list	-
SecondaryPoolSelection	string	Specify whether to select pool at volume allocation. If you select 'Automatic', then a pool will be selected automatically.	"Automatic" or "Manual"	Automatic
SecondaryPool	File	Specify the pool for S-Vols.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
SecondaryVolumeSettings	File	Specify the parameters required to create new volumes for S-Vols.	See the following File type property list	<pre>[{"volumeUsage": "OS", "volumeLabel": "", "diskType": [], "devSetting": {"devIdStartsFrom": 0, "virtualDevIdStartsFrom": 0}, "lunSetting": {"lunStartsFrom": 0}}, {"volumeUsage": "App", "volumeLabel": "", "diskType": [], "devSetting": {"devIdStartsFrom": 0, "virtualDevIdStartsFrom": 0}, "lunSetting": {"lunStartsFrom": 0}}, {"volumeUsage": "Data", "volumeLabel": "", "diskType": [], "devSetting":</pre>

KeyName	Type	Description	Range	Default Value
				{ "iddevIdS tartsFro m":0,"virt ualLdevl dStartsFr om":0},"l unSettin g": { "lunStart sFrom":0 }}
SecondaryVolumeForExistingPVol	file	Specify the parameters required to create new volumes.	See the following File type property list	-
SecondaryVolumeFilter	file	Specify conditions for filtering the candidate volumes. Not all candidates are displayed when there are many candidate volumes. Specify the conditions to narrow down the volume list.	See the following File type property list	-
SecondaryVolumeFilterJoinType	string	Specify the source volume filter join type.	"and" or "or"	and
SecondaryRowsPage	integer	Specify the rows per page to display in the volumes.	100, 500 or 1000 (in dex)	1000
SecondaryCurrentPage	integer	Specify the number of pages to display in the volumes.	1-integer maximum value	1
SecondaryVolumes	file	Specify the volume to be used as the Secondary Volume.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
SecondaryCapacitySavingFunction	String	Specify the Capacity Saving Function for target volumes.  Refer to your storage system product documentation for the optimal setting.	"None", "Compression", "Deduplication and Compression"	None
SecondaryCapacitySavingMode	String	Specify the Capacity Saving Mode for target volumes.  Refer to your storage system product documentation for the optimal setting.	"Inline mode", "Post-process mode"	Post-process mode
SecondaryResourceCriteria	File	Specify the resource criteria.	See the following File type property list	-
SecondaryResourceCriteriaForExistingPVol	File	Specify the resource criteria.	See the following File type property list	-
SecondaryPortType	String	Specify the port type as Fibre or iSCSI.	"Fibre" or "iSCSI"	"Fibre"
SecondaryHostMode	file	Specify the parameters to create a new host group.	See the following File type property list	{"hostMode": "WIN_EX", "hostModeOption": []}
SecondaryNumberOfHosts	string	Select the number of hosts to allocate per volume.	"Single" or "Multiple"	Single
SecondaryMultipleHostsPerStoragePort <sup>1</sup>	boolean	Select to share storage ports with multiple hosts.	true or false	false

KeyName	Type	Description	Range	Default Value
SecondaryMultipleHostsPerHostGroup <sup>2</sup>	boolean	Select o share host groups with multiple hosts.	true or false	false
SecondaryHostSettingForSingleHost <sup>3</sup>	file	Specify information about the hosts where the volumes will be allocated.	See the following File type property list	{"hostName":"","wwnSettings": [],"iScsiSettings": []}
SecondaryHostSettingForMultiHost <sup>1</sup>	file	Specify information about the hosts where the volumes will be allocated.	See the following File type property list	-
SecondaryZoneConfigurationNameToUpdate	String	To add a zone to a Zone Configuration other than the active configuration, specify the name of the Zone Configuration in which to add the zone.	-	-
SecondaryNamingScriptZone	File	Specify the naming convention script that determines the Zone name for the path.	See the following script specifications	See the following script example.
SecondaryNamingScriptHostZoneAlias	File	Specify the naming convention script that determines the Zone Alias name for the host port.	See the following script specifications	See the following script example.
SecondaryNamingScriptStorageZoneAlias	File	Specify the zone information.	See the following script specifications	See the following script example.

KeyName	Type	Description	Range	Default Value
ReplicationType	String	Specify the pair type.	"Synchronous Remote Clone" or "Asynchronous Remote Clone"	"Synchronous Remote Clone"
ExistingOrCreateNewCopyGroup	String	Specify whether to use an existing copy group or create a new one.	"New Copy Group" or "Existing Copy Group"	"New Copy Group"
CopyGroupName	String	Specify the name of the new copy group to create.  When "ExistingOrCreateNewCopyGroup" is "New Copy Group", CopyGroupName can be specified.	The length should be less than 29.  The string should consist of the following character set. A-Z,a-z,0-9,-,.,:,@,_  A string beginning with '-' is not allowed.	-
ExistingCopyGroup	File	Specify the existing copy group.  When "ExistingOrCreateNewCopyGroup" is "Existing Copy Group", ExistingCopyGroup can be specified.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
CopyPace	integer	Specify the copy speed. The larger value you specify the faster the copy speed will be.  When "ReplicationType" is "Synchronous Remote Clone", CopyPace can be specified.	1 to 15 (in dex)	3
FenceLevelForSync	String	Specify the fence level.  When "ReplicationType" is "Synchronous Remote Clone", FenceLevelForSync can be specified.	"NEVER" or "STATUS" or "DATA"	"DATA"
FenceLevelForAsync	String	Specify the fence level.  When "ReplicationType" is "Asynchronous Remote Clone", FenceLevelForAsync can be specified.	"ASYNC"	"ASYNC"
PrimaryJNLG	File	Specify the journal group of the primary volume.  When "ReplicationType" is "Asynchronous Remote Clone" and "ExistingOrCreateNewCopyGroup" is "New Copy Group", PrimaryJNLG can be specified.	See the following File type property list	-



KeyName	Type	Description	Range	Default Value
SecondaryJNLG	File	Specify the journal group of the secondary volume.  When "ReplicationType" is "Asynchronous Remote Clone" and "ExistingOrCreateNewCopyGroup" is "New Copy Group", SecondaryJNLG can be specified.	See the following File type property list	-
UseTheNocopyOption	boolean	Specify whether to perform initial copy when creating a pair.	true or false	true
AssignCTG	boolean	Specify whether to register the new pairs in a consistency group.  When "ReplicationType" is "Synchronous Remote Clone" or "Global-active Device" and "ExistingOrCreateNewCopyGroup" is "New Copy Group", AssignCTG can be specified.	true or false	true

KeyName	Type	Description	Range	Default Value
CTGIDSelection	String	<p>Specify whether to select the consistency group ID automatically or manually.</p> <p>When "ReplicationType" is "Synchronous Remote Clone" or "Global-active Device" and "ExistingOrCreateNewCopyGroup" is "New Copy Group" and "AssignCTG" is true, or when "ReplicationType" is "Asynchronous Remote Clone" and "ExistingOrCreateNewCopyGroup" is "New Copy Group", CTGIDSelection can be specified.</p>	"Auto Selection" or "Manual Selection"	"Auto Selection"
CTGID	String	<p>Specify the consistency group ID by using a hexadecimal (base 16) number.</p> <p>When "CTGIDSelection" is "Manual Selection", CTGID can be specified.</p>	<p>The range of selectable CTG ID is changed due to specified primary and secondary storage systems as follows:</p> <ul style="list-style-type: none"> <li>▪ VSP G200 0 to F (in hex)</li> <li>▪ VSP G400, G600, VSP F400, F600, VSP N400, N600 0 to 3F (in hex)</li> </ul>	

KeyName	Type	Description	Range	Default Value
			<ul style="list-style-type: none"> <li>▪ VSP One</li> <li>B28, VSP</li> <li>One</li> <li>B26, VSP</li> <li>One</li> <li>B24, VSP</li> <li>E1090, VSP</li> <li>E1090,</li> <li>VSP</li> <li>E1090H,</li> <li>VSP E590,</li> <li>VSP E790,</li> <li>VSP</li> <li>E590H,</li> <li>VSP</li> <li>E790H,</li> <li>VSP G130,</li> <li>VSP G350,</li> <li>VSP G370,</li> <li>VSP G700,</li> <li>VSP F350,</li> <li>VSP F370,</li> <li>VSP F700,</li> <li>VSP</li> <li>G800, VSP</li> <li>F800, VSP</li> <li>N800 0 to</li> <li>7F (in hex)</li> </ul>	

KeyName	Type	Description	Range	Default Value
			<ul style="list-style-type: none"> <li>▪ VSP E990, VSP G900, VSP F900, VSP G1000, VSP P G1500, VSP P F1500 0 to FF (in hex)</li> <li>▪ VSP 5100, 5500, 5100H, 5500H, VSP 5200, 5600, 5200H, 5600H 0 to 3FF (in hex)</li> </ul> <p>When storage models are different between the primary and the secondary, the narrower range takes precedence.</p>	
MUNumberSelection	String	<p>Specify whether to select the MU (mirror unit) number automatically or manually.</p> <p>When "ReplicationType" is "Asynchronous Remote Clone" and "ExistingOrCreateNewCopyGroup" is "New Copy Group", MUNumberSelection can be specified.</p>	"Auto Selection" or "Manual Selection"	"Auto Selection"

KeyName	Type	Description	Range	Default Value
MUNumber	String	Specify the MU (mirror unit) number by using a number from 0 to 3.  When "MUNumberSelection" is "Manual Selection", MUNumber can be specified.	0 to 3	0
PathGroupIDSelection	String	Specify whether to select the path group ID automatically or manually.	"Auto Selection" or "Manual Selection"	"Auto Selection"
PathGroupID	String	Specify the path group ID by using a hexadecimal (base 16) number in the range from 00 to FF.  When "PathGroupIDSelection" is "Manual Selection", PathGroupID can be specified.	00 to FF (in hex)	00
ReductionForceCopy	boolean	Specify whether to forcibly create a pair for the volume for which the capacity saving function (deduplication and compression) is enabled.	true or false	false
DeltaResyncSuspend	boolean	Specify whether to use delta resync between the storage systems of the secondary sites.	true or false	false
<ol style="list-style-type: none"> <li>1. When "NumberOfHosts" is "Multiple"</li> <li>2. When "MultipleHostsPerStoragePort" is true</li> </ol>				

KeyName	Type	Description	Range	Default Value
3. When "NumberOfHosts" is "Single"				

**File type property list**

**Table 154 ConfigurationManagerConnection**

Data nesting information		Description	Range
value			
	productName	Product name of registering to Web Service Connection	"ConfigurationManager"
	name	Name	-
	ipAddress	IpAddress	-
	port	Port	-
	protocol	Protocol	-
	userID	UserID	-
	status	Status of the connection	-
	connectedTime	Connected time	-

**Table 155 StorageSystem**

Data nesting information		Description	Range
value			
	storageDeviceId	Storage Device ID	-
	model	Model	-
	serialNumber	Serial Number	-
	svplp	SVP IP Address	-

**Table 156 ResourceGroup**

Data nesting information		Description	Range
value			

Data nesting information		Description	Range
	resourceGroupId	Resource Group ID	-
	resourceGroupName	Resource Group Name	-
	virtualStorageId	Virtual Storage System ID	-

**Table 157 Pool**

Data nesting information		Description	Range
value			
	poolId	Pool ID	-
	poolName	Pool name	-
	poolType	Pool Type	-
	usedCapacityRate	Used capacity rate	-
	availableVolumeCapacity	Available Volume capacity	-
	totalPoolCapacity	Total Pool capacity	-
	numOfLdevs	Number of LDEVs	-

**Table 158 VolumeSettings**

Data nesting information		Description	Range
value <sup>1</sup>			
	volumeUsage	Volume Usage	A maximum of 64 characters can be entered. And the string should be consisted from only following character set. A-Z,a-z,0-9,~,!,@,#,\$,%,&,(,)_,+,-,=,{,},[,],',,`
	numberOfVolumes	Number of Volumes	1-500
	ldevIdStartsFrom	LDEV ID Starts from	0-FFFFFF
	volumeCapacityInMiB <sup>2</sup>	Volume Capacity	-
	blockCapacity <sup>3</sup>	Volume Capacity	-

Data nesting information		Description	Range
	volumeLabel	Volume Label	A maximum of 32 characters can be entered. And the string should be consisted from only following character set. A-Z,a-z,0-9,!,#,\$,%,&,'(,),+,-,:;=@, [.,^,_,`,{},~,/\
	lunStartsFrom	LUN Starts From	0-07FF
	virtualLdevIdStartsFrom	Virtual LDEV ID Starts From	0-FEFF
<ol style="list-style-type: none"> <li>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.</li> <li>2. When "CapacityFormat" is "Byte", volumeCapacityInMiB can be specified.</li> <li>3. When "CapacityFormat" is "Block", blockCapacity can be specified.</li> </ol>			

**Table 159 VolumeFilter**

Data nesting information		Description	Range
value <sup>1</sup>			
	field	Field	"LDEV ID (Dec)", "LDEV ID (Hex)", "Label", "Pool ID", "Port ID", "Host Group Name"
	operator	Operator	When you specify "LDEV ID (Dec)" or "LDEV ID (Hex)" or "Pool ID", the following operators can be specified: "=", "<", ">", "<=", ">=", "!=". When you specify "Label" or "Port ID" or "Host Group Name", the following operators can be specified: "=", "!=", "startsWith", "endsWith".
	value	Value	-
<ol style="list-style-type: none"> <li>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</li> </ol>			

**Table 160 Volumes**

Data nesting information		Description	Range
value <sup>1</sup>			
	ldevId	LDEV ID	-
	virtualLdevId	Virtual LDEV ID	-



Data nesting information		Description	Range
	label	Label	-
	resourceGroupId	Resource group ID	-
	poolId	Pool ID	-
	byteFormatCapacity	Capacity	-
	blockCapacity	Block capacity	-
	lun	LUN ID	-
	copyPairAttributes	Copy pair attributes	
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 161 ResourceCriteria**

Data nesting information			Description	Range
value <sup>1</sup>				
	volumeUsage <sup>2</sup>		Volume Usage	-
	storagePortCriteria		Storage Port Criteria	-
		expressions <sup>1</sup>	Condition	-
		name	Attribute	"Name"
		op	Operator Type	"Equals", "Not Equals", "Starts With", "Ends With"
		value	Value	-
		join	Join condition of the Expressions	"All", "Any"
<p>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.                  2. Select from volume usage specified in "Volume Settings".</p>				

**Table 162 HostMode**

Data nesting information		Description	Range
value			
	hostMode <sup>1</sup>	Host Mode	-
	hostModeOptions <sup>1</sup>	Host Mode Options	-
<p>1. See the Provisioning Guide for your storage system for details about the host mode and host mode options.</p>			

**Table 163 HostSettingsForSingleHost**

Data nesting information		Description	Range
value			
	hostName	Host name	A maximum of 64 characters can be entered.
	wwnSettings <sup>1, 2</sup>		-
	wwn	WWN	16 characters in hexadecimal.
	wwnNickname	WWN nickname	A maximum of 64 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,:,@,_ The string cannot start with a hyphen (-).
	enableALUA	Enable Asymmetric Logical Unit Access (ALUA)	true or false
	enableHMONonPreferred	Enable HMO non preferred	true or false
	iScsiSettings <sup>1, 3</sup>	iSCSI settings	-

Data nesting information			Description	Range
		iScsiName	iSCSI name	Specify in iqn format or eui format. -iqn format: Specify 5-223 characters by using the following characters: a-z,0-9,.,-,: - eui format: Specify 20 characters in hexadecimal.
		iScsiNickname	iSCSI nickname	A maximum of 32 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,@,_  The string cannot start with a hyphen (-).
<ol style="list-style-type: none"> <li>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</li> <li>2. When "PortType" is "Fibre", wwnSettings can be specified.</li> <li>3. When "PortType" is "iSCSI", iScsiSettings can be specified.</li> </ol>				

**Table 164 HostSettingsForMultiHost**

Data nesting information			Description	Range
value				
	hostName		Host name	A maximum of 64 characters can be entered.
	wwnSettings <sup>1, 2</sup>			-
		wwn	WWN	16 characters in hexadecimal.
		wwnNickname	WWN nickname	A maximum of 64 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,@,_  The string cannot start with a hyphen (-).

Data nesting information		Description	Range
	enableALUA	Enable Asymmetric Logical Unit Access (ALUA)	true or false
	enableHMONonPreferred	Enable HMO non preferred	true or false
	iScsiSettings <sup>1, 3</sup>	iSCSI settings	-
	iScsiName	iSCSI name	Specify in iqn format or eui format. -iqn format: Specify 5-223 characters by using the following characters: a-z,0-9,.,-,: - eui format: Specify 20 characters in hexadecimal.
	iScsiNickname	iSCSI nickname	A maximum of 32 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,@,_  The string cannot start with a hyphen (-).
<ol style="list-style-type: none"> <li>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</li> <li>2. When "PortType" is "Fibre", wwnSettings can be specified.</li> <li>3. When "PortType" is "iSCSI", iScsiSettings can be specified.</li> </ol>			

**Table 165 SecondaryConfigurationManagerConnection**

Data nesting information		Description	Range
value			
	productName	Product name of registering to Web Service Connection	"ConfigurationManager"
	name	Name	-
	ipAddress	IpAddress	-
	port	Port	-

Data nesting information		Description	Range
	protocol	Protocol	-
	userID	UserID	-
	status	Status of the connection	-

**Table 166 SecondaryStorageSystem**

Data nesting information		Description	Range
value			
	storageDeviceId	Storage Device ID	-
	model	Model	-
	serialNumber	Serial Number	-
	svplp	SVP IP Address	-

**Table 167 SecondaryResourceGroup**

Data nesting information		Description	Range
value			
	resourceGroupId	Resource Group ID	-
	resourceGroupName	Resource Group Name	-
	virtualStorageId	Virtual Storage System ID	-

**Table 168 SecondaryPool**

Data nesting information		Description	Range
value			
	poolId	Pool ID	-
	poolName	Pool name	-
	poolType	Pool Type	-
	usedCapacityRate	Used capacity rate	-
	availableVolumeCapacity	Available Volume capacity	-

Data nesting information		Description	Range
	totalPoolCapacity	Total Pool capacity	-
	numOfLdevs	Number of LDEVs	-

**Table 169 SecondaryVolumeSettings**

Data nesting information		Description	Range
value <sup>1</sup>			
	volumeUsage <sup>2</sup>	Volume Usage	A maximum of 64 characters can be entered. And the string should be consisted from only following character set. A-Z,a-z,0-9,~,!,@,#,\$,%^,&,(,)_,+,-,=,{,},[,],',`
	ldevIdStartsFrom	LDEV ID Starts from	0-FFFFFF
	volumeLabel	Volume Label	A maximum of 32 characters can be entered. And the string should be consisted from only following character set. A-Z,a-z,0-9,!,#,\$,%,&',(,)+,-,;=@,[,],^,_,`,{,},~,/\
	lunStartsFrom	LUN Starts From	0-07FF
	virtualLdevIdStartsFrom	Virtual LDEV ID Starts From	0-FEFF
<p>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.</p> <p>2. Select from volume usages specified in Volume Settings".</p>			

**Table 170 SecondaryVolumeSettingsForExistingPVol**

Data nesting information		Description	Range
value <sup>1</sup>			
	PvolLdevId	Primary volume LDEV ID	
	ldevIdStartsFrom	LDEV ID starts from	0-FFFFFF

Data nesting information		Description	Range
	volumeLabel	Volume label	A maximum of 32 characters can be entered. The string must consist of the following characters A-Z,a-z,0-9,!,#,\$,%&,'(,),+,-,;,=,@,[,],^,_,`,{},~,/\
	lunStartsFrom	LUN starts from	0-07FF
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 171 SecondaryVolumeFilter**

Data nesting information		Description	Range
	value <sup>1</sup>		
	field	Field	"LDEV ID (Dec)", "LDEV ID (Hex)", "Label", "Pool ID", "Port ID", "Host Group Name"
	operator	Operator	When you specify "LDEV ID (Dec)" or "LDEV ID (Hex)" or "Pool ID", the following operators can be specified: "=", "<", ">", "<=", ">=", "!=".  When you specify "Label" or "Port ID" or "Host Group Name", the following operators can be specified: "=", "!=", "startsWith", "endsWith".
	value	Value	-
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 172 SecondaryVolumes**

Data nesting information		Description	Range
	value <sup>1</sup>		
	PvolLdevId	Primary Volume LDEV ID	-
	volumes	Volumes	-
	ldevId	LDEV ID	-
	virtualLdevId	Virtual LDEV ID	-
	label	Label	-

Data nesting information			Description	Range
		resourceGroupId	Resource group ID	-
		poolId	Pool ID	-
		byteFormatCapacity	Capacity	-
		blockCapacity	Block capacity	-
		lun	LUN ID	-
		copyPairAttributes	Copy pair attributes	
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>				

**Table 173 SecondaryResourceCriteria**

Data nesting information				Description	Range
value <sup>1</sup>					
	volumeUsage <sup>2</sup>			Volume Usage	-
	storagePortCriteria			Storage Port Criteria	-
		expressions <sup>1</sup>		Condition	-
			name	Attribute	"Name"
			op	Operator Type	"Equals", "Not Equals", "Starts With", "Ends With"
			value	Value	-
		join		Join condition of the Expressions	"All", "Any"
<p>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.                  2. Select from volume usage specified in "Volume Settings".</p>					

**Table 174 SecondaryResourceCriteriaForExistingPVol**

Data nesting information			Description	Range
value <sup>1</sup>				



Data nesting information				Description	Range
	PvolLdevId			Primary volume LDEV ID	-
	storagePortCriteria			Storage port criteria	-
		expressions <sup>1</sup>		Condition	-
			name	Attribute	"Name"
			op	Operator type	"Equals", "Not Equals", "Starts With", "Ends With"
			value	Value	-
		join		Join condition of the expressions	"All", "Any"
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>					

**Table 175 SecondaryHostMode**

Data nesting information			Description	Range
value				
	hostMode <sup>1</sup>		Host Mode	-
	hostModeOptions <sup>1</sup>		Host Mode Options	-
<p>1. See the Provisioning Guide for your storage system for details about the host mode and host mode options.</p>				

**Table 176 SecondaryHostSettingsForSingleHost**

Data nesting information			Description	Range
value				
	hostName		Host name	A maximum of 64 characters can be entered.
	wwnSettings <sup>1, 2</sup>			-
		wwn	WWN	16 characters in hexadecimal.

Data nesting information			Description	Range
		wwnNickname	WWN nickname	A maximum of 64 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,:,@,_ The string cannot start with a hyphen (-).
		enableALUA	Enable Asymmetric Logical Unit Access (ALUA)	true or false
		enableHMONonPreferred	Enable HMO non preferred	true or false
	iScsiSettings <sup>1, 3</sup>		iSCSI settings	-
		iScsiName	iSCSI name	Specify in iqn format or eui format. -iqn format: Specify 5-223 characters by using the following characters: a-z,0-9,.,-,: - eui format: Specify 20 characters in hexadecimal.
		iScsiNickname	iSCSI nickname	A maximum of 32 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,:,@,_ The string cannot start with a hyphen (-).
<ol style="list-style-type: none"> <li>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</li> <li>2. When "PortType" is "Fibre", wwnSettings can be specified.</li> <li>3. When "PortType" is "iSCSI", iScsiSettings can be specified.</li> </ol>				

Table 177 SecondaryHostSettingsForMultiHost

Data nesting information			Description	Range
value				
	hostName		Host name	A maximum of 64 characters can be entered.
	wwnSettings <sup>1, 2</sup>			-
		wwn	WWN	16 characters in hexadecimal.
		wwnNickname	WWN nickname	A maximum of 64 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,:,@,_ The string cannot start with a hyphen (-).
		enableALUA	Enable Asymmetric Logical Unit Access (ALUA)	true or false
		enableHMONonPreferred	Enable HMO non preferred	true or false
	iScsiSettings <sup>1, 3</sup>		iSCSI settings	-
		iScsiName	iSCSI name	Specify in iqn format or eui format. -iqn format: Specify 5-223 characters by using the following characters: a-z,0-9,.,-,: - eui format: Specify 20 characters in hexadecimal.
		iScsiNickname	iSCSI nickname	A maximum of 32 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,:,@,_ The string cannot start with a hyphen (-).

Data nesting information	Description	Range
<ol style="list-style-type: none"> <li>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</li> <li>2. When "PortType" is "Fibre", wwnSettings can be specified.</li> <li>3. When "PortType" is "iSCSI", iScsiSettings can be specified.</li> </ol>		

**Table 178 ExistingCopyGroup**

Data nesting information	Description	Range
value		
copyGroupName	Copy Group Name	-
muNumber	MU Number	-
localDeviceGroupName	Local Device Group Name	-
remoteDeviceGroupName	Remote Device Group Name	-

**Table 179 PrimaryJNLG**

Data nesting information	Description	Range
value		
journalId	Journal ID	-
journalStatus	Status	-
byteFormatCapacity	Capacity	-

**Table 180 SecondaryJNLG**

Data nesting information	Description	Range
value		
journalId	Journal ID	-
journalStatus	Status	-
byteFormatCapacity	Capacity	-

## Script specifications

Table 181 PrimaryNamingScriptZone

Script specifications	Description
script	Function that is written in the syntax of ECMAScript 5. The following conditions of arguments and return must be satisfied.
arguments	<p>arguments[0]: The object with the following properties is passed as an argument:</p> <ul style="list-style-type: none"> <li>▪ hostname: Host name</li> <li>▪ hostPortWorldWideName: WWN of HBA. Separator notation is based on BNA.</li> <li>▪ storagePortWorldWideName: WWN of CHA. Separator notation is based on BNA.</li> <li>▪ storageSystemFamily: Display model name of the physical storage system.</li> <li>▪ storageSystemName: Name of physical storage system on Configuration Manager.</li> <li>▪ storageSystemSerialNumber: Serial number of physical storage system.</li> <li>▪ storagePortName: Display port name of the storage system.</li> <li>▪ virtualStorageArrayFamily: Display model name of virtual storage (if non-virtual, "-").</li> <li>▪ virtualStorageSystemName: Name of virtual storage on Configuration Manager (if non-virtual, "-").</li> <li>▪ virtualSerialNumber: Serial number of virtual storage (if non-virtual, "-").</li> <li>▪ serviceProperties: List of the service properties passed to the plug-in.</li> </ul>
return	<p>Script must return the string that satisfies the following conditions:</p> <ol style="list-style-type: none"> <li>1. Available characters: Only alphanumeric characters and “_”</li> <li>2. The first character is alphabetic</li> <li>3. Zone is up to 60 characters, Zone Alias is up to 64 characters</li> <li>4. About Zone, the string starting from "LSAN_", "TI_", "QOSHn+_ ", "QOSMn+_ ", "QOSLn_" is not allowed (case ignored. "n" is number.)</li> </ol>

## Allocate Volumes with 2DC Remote Replication service (task details)

KeyName	Type	Description	Range
/SmartProvisioningForPVol/ LUNPathConfigurationInformation	file	Stores the allocated LUN path information from the volume allocation results.	See the following File Type property list
/SmartProvisioningForSVol/ LUNPathConfigurationInformation	file	Stores the allocated LUN path information from the volume allocation results.	See the following File Type property list
CopyPairConfigurationInformation	file	Stores the copy pair information from the replication results.	See the following File Type property list
/ExecuteZoningConfigurationPvol/ ExecutePvolZoningConfiguration/ ConfigureWWNZoningPvol/ provisioning.taskResult.createdZoneConfigurations	file	Stores the new zone configuration.	See the following File Type property list
/ExecuteZoningConfigurationPvol/ ExecutePvolZoningConfiguration/ ConfigureWWNZoningPvol/ provisioning.taskResult.createdZones	file	Stores the new zone information.	See the following File Type property list
/ExecuteZoningConfigurationPvol/ ExecutePvolZoningConfiguration/ ConfigureWWNZoningPvol/ provisioning.taskResult.createdZoneAliases	file	Stores the new zone aliases.	See the following File Type property list
/ExecuteZoningConfigurationPvol/ ExecutePvolZoningConfiguration/ ConfigureWWNZoningPvol/ provisioning.taskResult.updatedZoneConfigurations	file	Stores the updated zone configuration.	See the following File Type property list

KeyName	Type	Description	Range
/ExecuteZoningConfigurationPvol/ ExecutePvolZoningConfiguration/ ConfigureWWNZoningPvol/ provisioning.taskResult.updatedZones	file	Stores the updated zone information.	See the following File Type property list
/ExecuteZoningConfigurationPvol/ ExecutePvolZoningConfiguration/ ConfigureWWNZoningPvol/ provisioning.taskResult.updatedZoneAliases	file	Stores the updated zone aliases.	See the following File Type property list
/ExecuteZoningConfigurationSvol/ ExecuteSvolZoningConfiguration/ ConfigureWwnZoningSvol/ provisioning.taskResult.createdZoneConfigurations	file	Stores the new zone configuration.	See the following File Type property list
/ExecuteZoningConfigurationSvol/ ExecuteSvolZoningConfiguration/ ConfigureWwnZoningSvol/ provisioning.taskResult.createdZones	file	Stores the new zone information.	See the following File Type property list
/ExecuteZoningConfigurationSvol/ ExecuteSvolZoningConfiguration/ ConfigureWwnZoningSvol/ provisioning.taskResult.createdZoneAliases	file	Stores the new zone aliases.	See the following File Type property list
/ExecuteZoningConfigurationSvol/ ExecuteSvolZoningConfiguration/ ConfigureWwnZoningSvol/ provisioning.taskResult.updatedZoneConfigurations	file	Stores the updated zone configuration.	See the following File Type property list
/ExecuteZoningConfigurationSvol/ ExecuteSvolZoningConfiguration/ ConfigureWwnZoningSvol/ provisioning.taskResult.updatedZones	file	Stores the updated zone information.	See the following File Type property list
/ExecuteZoningConfigurationSvol/ ExecuteSvolZoningConfiguration/ ConfigureWwnZoningSvol/ provisioning.taskResult.updatedZoneAliases	file	Stores the updated zone aliases.	See the following File Type property list

## File type property list

Table 182 /SmartProvisioningForPVol/LUNPathConfigurationInformation

Data nesting information		Description	Range
value <sup>1</sup>			
	storageDeviceId	Storage Device ID	-
	volumeUsage	Volume Usage	-
	hostPort	Host Port	-
	storagePort	Storage Port	-
	lun	LUN	-
	portType	Port Type	-
	capacity	Capacity	-
	provisionedCapacity	Provisioned Capacity	-
	ldevId	LDEV ID	-
	hostGroupNameOrIscsiTarget	Host Group Name/ iSCSI Target	-
	hostGroupNumber	Host Group Number	-
	hostMode	Host Mode	-
	hostModeOptions	Host Mode Options	-
	model	Model	-
	serialNumber	Serial Number	-
	ldevLabel	LDEV Label	-
	virtualStorageMachineResourceGroupName	Resource Group in Virtual Storage System	-
	parityGroup	Parity Group	-
	attributes	Attributes	-
	resourceGroupName	Resource Group Name	-
	virtualLdevId	Virtual LDEV ID	-
	configurationManager	Configuration Manager	-



Data nesting information		Description	Range
	poolId	Pool ID	-
	poolName	Pool Name	-
	asymmetricAccessStatus	ALUA Settings	-
1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.			

Table 183 /SmartProvisioningForSVol/LUNPathConfigurationInformation

Data nesting information		Description	Range
value <sup>1</sup>			
	storageDeviceId	Storage Device ID	-
	volumeUsage	Volume Usage	-
	hostPort	Host Port	-
	storagePort	Storage Port	-
	lun	LUN	-
	portType	Port Type	-
	capacity	Capacity	-
	provisionedCapacity	Provisioned Capacity	-
	ldevId	LDEV ID	-
	hostGroupNameOrIscsiTarget	Host Group Name/ iSCSI Target	-
	hostGroupNumber	Host Group Number	-
	hostMode	Host Mode	-
	hostModeOptions	Host Mode Options	-
	model	Model	-
	serialNumber	Serial Number	-
	ldevLabel	LDEV Label	-
	virtualStorageMachineResourceGroupName	Resource Group in Virtual Storage System	-

Data nesting information		Description	Range
	parityGroup	Parity Group	-
	attributes	Attributes	-
	resourceGroupName	Resource Group Name	-
	virtualLdevId	Virtual LDEV ID	-
	configurationManager	Configuration Manager	-
	poolId	Pool ID	-
	poolName	Pool Name	-
	asymmetricAccessStatus	ALUA Settings	-
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

Table 184 CopyPairConfigurationInformation

Data nesting information		Description	Range
value <sup>1</sup>			
	copyType	Copy Type	-
	copyGroupName	Copy Group name	-
	volumeUsage	Target host port which primary volume has allocated to.	-
	copyPairName	Target host port which secondary volume has allocated to.	-
	pvolLdevId	Volume Usage name	-
	pvolVirtualLdevId		-
	localStorageSystemModel		-
	localstorageSystemSerialNumber		-
	localResourceGroupName		-
	svolLdevId	Copy Pair Name	-
	svolVirtualLdevId	LDEV ID of P-Vol	-
	remoteStorageSystemModel	LDEV ID of S-Vol	-

Data nesting information		Description	Range
	remoteStorageSystemSerialNumber		-
	remoteResourceGroupName	Storage Array name	-
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 185 /ExecuteZoningConfigurationPvol/ExecutePvolZoningConfiguration/ConfigureWWNZoningPvol/provisioning.taskResult.createdZoneConfigurations / ExecuteZoningConfigurationSvol/ExecuteSvolZoningConfiguration/ConfigureWwnZoningSvol/provisioning.taskResult.createdZoneConfigurations**

Data nesting information		Description	Range
value <sup>1</sup>			
	name	Name	-
	zoneNames	Zone Names	-
	bnaname	BNA Name	-
	fabricName	Fabric Name	-
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 186 /ExecuteZoningConfigurationPvol/ExecutePvolZoningConfiguration/ConfigureWWNZoningPvol/provisioning.taskResult.createdZones / ExecuteZoningConfigurationSvol/ExecuteSvolZoningConfiguration/ConfigureWwnZoningSvol/provisioning.taskResult.createdZones**

Data nesting information		Description	Range
value <sup>1</sup>			
	name	Name	-
	displayName	Type	-
	aliasNames	Alias Names	-
	memberNames	Member Names	-
	bnaname	BNA Name	-
	fabricName	Fabric Name	-

Data nesting information	Description	Range
1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.		

**Table 187 /ExecuteZoningConfigurationPvol/ExecutePvolZoningConfiguration/  
ConfigureWWNZoningPvol/provisioning.taskResult.createdZoneAliases /  
ExecuteZoningConfigurationSvol/ExecuteSvolZoningConfiguration/  
ConfigureWwnZoningSvol/provisioning.taskResult.createdZoneAliases**

Data nesting information	Description	Range
value <sup>1</sup>		
	name	Name
	memberNames	Member Names
	bnaname	BNA Name
	fabricName	Fabric Name
1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.		

**Table 188 /ExecuteZoningConfigurationPvol/ExecutePvolZoningConfiguration/  
ConfigureWWNZoningPvol/provisioning.taskResult.updatedZoneConfigurations /  
ExecuteZoningConfigurationSvol/ExecuteSvolZoningConfiguration/  
ConfigureWwnZoningSvol/provisioning.taskResult.updatedZoneConfigurations**

Data nesting information	Description	Range
value <sup>1</sup>		
	name	Name
	zoneNames	Zone Names
	bnaname	BNA Name
	fabricName	Fabric Name
1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.		

**Table 189 /ExecuteZoningConfigurationPvol/ExecutePvolZoningConfiguration/  
ConfigureWWNZoningPvol/provisioning.taskResult.updatedZones /**

**ExecuteZoningConfigurationSvol/ExecuteSvolZoningConfiguration/  
ConfigureWwnZoningSvol/provisioning.taskResult.updatedZones**

Data nesting information		Description	Range
value <sup>1</sup>			
	name	Name	-
	type	Type	-
	aliasNames	Alias Names	-
	memberNames	Member Names	-
	bnaname	BNA Name	-
	fabricName	Fabric Name	-
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 190 /ExecuteZoningConfigurationPvol/ExecutePvolZoningConfiguration/  
ConfigureWWNZoningPvol/provisioning.taskResult.updatedZoneAliases /  
ExecuteZoningConfigurationSvol/ExecuteSvolZoningConfiguration/  
ConfigureWwnZoningSvol/provisioning.taskResult.updatedZoneAliases**

Data nesting information		Description	Range
value <sup>1</sup>			
	name	Name	-
	memberNames	Member Names	-
	bnaname	BNA Name	-
	fabricName	Fabric Name	-
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

## Allocate volumes with Clone/Snapshot service properties

Use the following properties to modify or create values for the Allocate volumes with clone/snapshot service.

**Allocate volumes with clone/snapshot service (edit)**

keyName	Type	Description	Range	Default value
ConfigurationManagerConnection	File	Specify the Configuration Manager Connection.	See the "File type property list" section following this table.	-
StorageSystem	File	Specify the Storage System.	See the "File type property list" section following this table.	-
ResourceGroup	File	Specify the Resource Group.	See the "File type property list" section following this table.	-
ExistingOrCreateNewVolume	String	Specify whether to use existing volumes or create new ones.	"New Volumes" or "Existing Volumes"	"New Volumes"
CapacityFormat	String	Specify the volume capacity format as Byte or Block	"Byte" or "Block"	"Byte"

keyName	Type	Description	Range	Default value
VolumeSettings	File	Specify the parameters required to create new volumes.	See the "File type property list" section following this table.	[{"volumeUsage": "OS", "numberOfVolumes": 1, "ldevIdStartsFrom": 0, "volumeCapacityInMiB": 153600, "blockCapacity": "314572800", "volumeLabel": "", "lunStartsFrom": 0, "virtualLdevIdStartsFrom": 0}, {"volumeUsage": "App", "numberOfVolumes": 1, "ldevIdStartsFrom": 0, "volumeCapacityInMiB": 204800, "blockCapacity": "419430400", "volumeLabel": "", "lunStartsFrom": 0, "virtualLdevIdStartsFrom": 0}, {"volumeUsage": "Data", "numberOfVolumes": 1, "ldevIdStartsFrom": 0, "volumeCapacityInMiB": 460800, "blockCapacity": "943718400", "volumeLabel": "", "lunStartsFrom": 0, "virtualLdevIdStartsFrom": 0}

keyName	Type	Description	Range	Default value
				StartsFrom": 0}]
VolumeFilter	File	Specify conditions for filtering the candidate volumes. Not all candidates are displayed when there are many candidate volumes. Specify the conditions to narrow down the volume list.	See the "File type property list" section following this table.	-
VolumeFilterJoinType	String	Specify the Source Volume Filter join type.	"and" or "or"	"and"
Volumes	File		See the "File type property list" section following this table.	-
Pool	File	Specify the pool.	See the "File type property list" section following this table.	-
CapacitySavingFunction	String	Specify the Capacity Saving Function for target volumes.  Refer to your storage system product documentation for the optimal setting.	"None", "Compression", "Deduplication and Compression"	None



keyName	Type	Description	Range	Default value
CapacitySavingMode	String	Specify the Capacity Saving Mode for target volumes.  Refer to your storage system product documentation for the optimal setting.	"Inline mode", "Post-process mode"	Post-process mode
ResourceCriteria	File	Specify the resource criteria.	See the "File type property list" section following this table.	-
PortType	String	Specify the port type as Fibre or iSCSI.	"Fibre" or "iSCSI"	"Fibre"
HostGroupSettings	File	Specify the parameters that are needed to create a new Host Group/ iSCIS Target.	See the "File type property list" section following this table.	-
provisioning.fabricSetting.enabled	boolean	Specifying True enables fabric information collection functionality.	true or false	true

keyName	Type	Description	Range	Default value
provisioning.fabricSetting.connection.names	string	Specify the connection name defined in the General Connections on the Administration Tab. Separate multiple values by commas. If this value is omitted, the system uses all connections that are defined for the product name listed in the General Connections.	-	-
provisioning.fabricSetting.resourcegroups	string	Specify the switch management server resource group. Separate multiple values by commas.	-	All
provisioning.fabricSetting.fabrics	string	Specify the fabric name. Separate multiple values by commas. If this value is omitted, the system uses all the fabrics that the BNA monitors.	-	-

keyName	Type	Description	Range	Default value
provisioning.fabricSetting.usingExistingZone	boolean	Specifies whether to select a predefined zone or any connectable path. If you specify True, the system selects paths within the range of the existing Zone setting. If you specify False, the system selects connectable paths regardless of the existing Zone setting.	true or false	true
provisioning.fabricSetting.hosts.restriction	boolean	Determines whether the service will fail if there is no path that matches the specified collection range.	true or false	false
provisioning.fabricSetting.hosts.range	integer	When using the Host Restriction option, specify the collection range by the number of hops.	0	0
provisioning.zoneSetting.enabled	boolean	Specifying True enables modify zone settings functionality.	true or false	true

keyName	Type	Description	Range	Default value
provisioning.zoneSetting.useExistingZoneAliases	boolean	Specify True to use predefined Zone Aliases regardless of the naming conventions the user specifies. If you specify False, the system selects Zone Aliases that follow the naming conventions. In either case, if there are no existing Zone Aliases, the system creates new Zone Aliases that follow the naming conventions.	true or false	false
provisioning.zoneSetting.updateActiveZoneConfiguration	boolean	Specify "true" to add a Zone to the active Zone Configuration.	true or false	true
provisioning.zoneSetting.zoneConfigurationName	string	Specify the name of Zone Configuration to be added to add Zone to other than the active Zone Configuration.	-	-
provisioning.zoneSetting.namingScript.zone	File	Specify the script of the naming convention which determines the Zone name to the path.	See the "File type property list" section following this table.	See the example in the "File type property list" section following this table.

keyName	Type	Description	Range	Default value
provisioning.zoneSetting.namingScript.hostZoneAlias	File	Specify the script of the naming convention which determines the Zone name to the host port.	See the "File type property list" section following this table.	See the example in the "File type property list" section following this table.
provisioning.zoneSetting.namingScript.storageZoneAlias	File	Specify the script of the naming convention which determines the Zone name to the storage port.	See the "File type property list" section following this table.	See the example in the "File type property list" section following this table.
CopyType	string	Specify the copy type as Clone or Snapshot.	"Clone" or "Snapshot"	"Clone"
NumberOfGenerations	integer	Specify the number of secondary volumes to be created for the primary volume. The number of secondary volumes becomes the number of generations. Also, a copy group is created for each generation.	1 - 3	1

keyName	Type	Description	Range	Default value
PrefixOfCopyGroupName	string	Specify the prefix of the copy group name to be assigned when creating the copy group. The copy group name is created by adding the prefix to the serial number of the generation.	The length should be less than 10. And the string should be consisted from only following character set. A string starts from '-' is not allowed. A-Z,a-z,0-9,;,:-';:;';@', '_	"Backups"
CTGOption	boolean	Specifies whether to set the CTG option at pair creation. If you specify 'true', a copy pair is created by using the CTG option.	true = copy pair is created by using CTG option false = copy pair is created by not using CTG option	false
CreateCopyPair <sup>1</sup>	boolean	Specifies whether to create S-Vols. If you specify 'false', a copy pair for Snapshot is created without S-Vols.	true = copy pair is created with S-Vols. false = copy pair is created without S-Vols.	true
SecondaryVolumeType	String	Specify the volume type as DP-VOL or V-VOL	"DP-VOL" or "V-VOL"	DP-VOL
SecondaryPool	File	Specify the pool for S-Vols.	See the "File type property list" section following this table.	-
SecondaryPoolForSnapPool	File	Specify the pool for S-Vols.	See the "File type property list" section following this table.	-

keyName	Type	Description	Range	Default value
AverageDifferentialDataSize <sup>2</sup>	integer	Specify the average differential data size per collection (%).	1 - 100	20
SecondaryVolumeSettings	File	Specify the parameters required to create new volumes for S-Vols.	See the "File type property list" section following this table.	[[{"volumeUsage": "OS", "ldevIdStartsFrom": 0, "volumeLabel": "", "lunStartsFrom": 0, "virtualLdevIdStartsFrom": 0}, {"volumeUsage": "App", "ldevIdStartsFrom": 0, "volumeLabel": "", "lunStartsFrom": 0, "virtualLdevIdStartsFrom": 0}, {"volumeUsage": "Data", "ldevIdStartsFrom": 0, "volumeLabel": "", "lunStartsFrom": 0, "virtualLdevIdStartsFrom": 0}]]
SecondaryVolumeSettingsForExistingPVol	File	Specify the parameters required to create new volumes for S-Vols.	See the "File type property list" section following this table.	-

keyName	Type	Description	Range	Default value
SecondaryCapacitySavingFunction	String	Specify the Capacity Saving Function for target volumes.  Refer to your storage system product documentation for the optimal setting.	"None", "Compression", "Deduplication and Compression"	None
SecondaryCapacitySavingMode	String	Specify the Capacity Saving Mode for target volumes.  Refer to your storage system product documentation for the optimal setting.	"Inline mode", "Post-process mode"	Post-process mode
SecondaryResourceCriteria	File	Specify the resource criteria for S-Vols.	See the "File type property list" section following this table.	-
SecondaryResourceCriteriaForExistingPVol	File	Specify the resource criteria for S-Vols.	See the "File type property list" section following this table.	-
SecondaryPortType	string	Specify the port type as Fibre or iSCSI for S-Vols.	"Fibre" or "iSCSI"	"Fibre"
SecondaryHostGroupSettings	File	Specify the parameters required to create a new Host Group/iSCSI Target or specify to use an existing Host Group/iSCSI Target for S-Vols.	See the "File type property list" section following this table.	-



keyName	Type	Description	Range	Default value
provisioning.fabricSetting.enabled	boolean	Specify True to enable fabric information collection.	true or false	true
provisioning.fabricSetting.connection.names	string	Specify the connection name defined in the General Connections on the Administration Tab. Separate multiple values by commas. If this value is omitted, the system uses all connections that are defined for the product name listed in the General Connections.	-	-
provisioning.fabricSetting.resourcegroups	string	Specify the switch management server resource group. Separate multiple values by commas.	-	All
provisioning.fabricSetting.fabrics	string	Specify the fabric name. Separate multiple values by commas. If this value is omitted, the system uses all the fabrics that the BNA monitors.	-	-

keyName	Type	Description	Range	Default value
provisioning.fabricSetting.usingExistingZone	boolean	Specify whether to select a predefined zone or any connectable path. If you specify True, the system selects paths within the range of the existing Zone setting. If you specify False, the system selects connectable paths regardless of the existing Zone setting.	true or false	true
provisioning.fabricSetting.hosts.restriction	boolean	Determines whether the service will fail if there is no path that matches the specified collection range.	true or false	false
provisioning.fabricSetting.hosts.range	integer	When using the Host Restriction option, specify the collection range by the number of hops.	0	0
provisioning.zoneSetting.enabled	boolean	Specifying True enables modify zone settings functionality.	true or false	true

keyName	Type	Description	Range	Default value
provisioning.zoneSetting.useExistingZoneAliases	boolean	Specify True to use predefined Zone Aliases regardless of the naming conventions the user specifies. If you specify False, the system selects Zone Aliases that follow the naming conventions. In either case, if there are no existing Zone Aliases, the system creates new Zone Aliases that follow the naming conventions.	true or false	false
provisioning.zoneSetting.updateActiveZoneConfiguration	boolean	Specify "true" to add a Zone to the active Zone Configuration.	true or false	true
provisioning.zoneSetting.zoneConfigurationName	string	Specify the name of Zone Configuration to be added to add Zone to other than the active Zone Configuration.	-	-
provisioning.zoneSetting.namingScript.zone	File	Specify the script of the naming convention which determines the Zone name to the path.	See the "File type property list" section following this table.	See the example in the "File type property list" section following this table.

keyName	Type	Description	Range	Default value
provisioning.zoneSetting.namingScript.hostZoneAlias	File	Specify the script of the naming convention which determines the Zone name to the host port.	See the "File type property list" section following this table.	See the example in the "File type property list" section following this table.
provisioning.zoneSetting.namingScript.storageZoneAlias	File	Specify the script of the naming convention which determines the Zone name to the storage port.	See the "File type property list" section following this table.	See the example in the "File type property list" section following this table.
<ol style="list-style-type: none"> <li>When "CopyType" is "Snapshot", CreateCopyPair can be specified.</li> <li>When "CopyType" is "Snapshot", AverageDifferentialDataSize can be specified.</li> </ol>				

### File type property list

Table 191 ConfigurationManagerConnection

Data nesting information	Description	Range
values		
productName	Product name of registering to Web Service Connection	"ConfigurationManager"
name	Name	-
ipAddress	IP address	-
port	Port	-
protocol	Protocol	-
userID	User ID	-
status	Status of connection	-
connectedTime	Connected time	-

**Table 192 StorageSystem**

Data nesting information		Description	Range
values			
	storageDeviceId	Storage Device ID	-
	model	Model	-
	serialNumber	Serial Number	-
	svplp	SVP IP Address	-

**Table 193 ResourceGroup**

Data nesting information		Description	Range
values			
	resourceGroupId	Resource Group ID	-
	resourceGroupName	Resource Group Name	-
	virtualStorageId	Virtual Storage System ID	-

**Table 194 VolumeFilter**

Data nesting information		Description	Range
values			
	field	Field	"LDEV ID (Dec)", "LDEV ID (Hex)", "Label", "Pool ID"

Data nesting information		Description	Range
	operator	Operator	When specifying "LDEV ID (Dec)" or "LDEV ID (Hex)" or "Pool ID", the following operators can be specified: "=", "<", ">", "<=", ">=", "!=".  When specify "Label", the following operators can be specified: "=", "!=", "startsWith", "endsWith".
	value	Value	-

Table 195 Volumes

Data nesting information		Description	Range
values			
	ldevId	LDEV ID	-
	virtualLdevId	Virtual LDEV ID	-
	label	Label	-
	resourceGroupId	Resource Group ID	-
	poolId	Pool ID	-
	byteFormatCapacity	Capacity	-
	blockCapacity	Block capacity	-
	lun	LUN ID	-

**Table 196 Pool**

Data nesting information		Description	Range
values			
	poolId	Pool ID	-
	poolName	Pool name	-
	poolType	Pool Type	-
	usedCapacityRate	Used capacity rate	-
	availableVolumeCapacity	Available Volume capacity	-
	totalPoolCapacity	Total Pool capacity	-
	numOfLdevs	Number of LDEVs	-

**Table 197 Volume Settings**

Data nesting information		Description	Range
values <sup>1</sup>			
	volumeUsage	Volume usage	A maximum of 64 characters can be entered.
	numberOfVolumes	Number of volumes	1-500
	ldevIdStartsFrom	LDEV ID starts from	0-FFFFFF
	volumeCapacityInMiB <sup>2</sup>	Volume capacity	1-
	blockCapacity <sup>3</sup>	Volume capacity	96000-
	volumeLabel	Volume label	A maximum of 32 characters can be entered.
	volumeLabel	Volume label	A maximum of 64 characters can be entered.
	lunStartsFrom	LUN starts from	0-07FF
	virtualLdevIdStartsFrom	Virtual LDEV ID starts from	0-FEFF
<ol style="list-style-type: none"> <li>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.</li> <li>2. When "CapacityFormat" is "Byte", volumeCapacityInMiB can be specified.</li> </ol>			

Data nesting information	Description	Range
3. When "CapacityFormat" is "Block", blockCapacity can be specified.		

**Table 198 ResourceCriteria**

Data nesting information	Description	Range
values <sup>1</sup>		
volumeUsage <sup>2</sup>	Volume Usage	-
storagePortCriteria	Storage Port Criteria	-
expressions <sup>1</sup>	Condition	-
name	Name	"Name".
op	Operator Type	"Equals", "Not Equals", "Starts With", "Ends With".
value	Value	-
join	Join condition of the Expressions	"All", "Any".
<p>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.</p> <p>2. Select from volume usage specified in "Volume Settings".</p>		

**Table 199 HostGroupSettings**

Data nesting information	Description	Range	Remarks
values <sup>1</sup>			
hostGroupName	Host Group name	A maximum of 64 characters can be entered.	When "PortType" is "Fibre", hostGroupName can be specified.
iScsiTargetName	iSCSI target name	A maximum of 32 characters can be entered.	When "PortType" is "iSCSI", iScsiTargetName can be specified.



Data nesting information		Description	Range	Remarks
	wwnSettings <sup>1</sup>	WWN settings		When "PortType" is "Fibre", wwnSettings can be specified.
	wwn	WWN	A maximum of 16 characters is allowed in hexadecimal.	-
	wwnNickname	WWN nickname	A maximum of 64 characters can be entered.	-
	iScsiSettings <sup>1</sup>	iSCSI settings		When "PortType" is "iSCSI", iScsiSettings can be specified.
	iScsiName	iSCSI name	"Specify in iqn format or eui format. -iqn format: Specify 5-223 characters by using the following characters: a-z,0-9,.,-,: - eui format: Specify 20 characters in hexadecimal."	-
	iScsiNickname	iSCSI nickname	A maximum of 32 characters can be entered.	-
	hostMode	Host Mode	See the Provisioning Guide for your storage system for details about the host mode.	-
	hostModeOptions	Host Mode options	See the Provisioning Guide for your storage system for details about host mode options.	-
<b>1.</b> Repeatable. Repeatable items must be repeated and must include all lower layer tags.				

**Table 200 provisioning.zoneSetting.namingExpression.zone /  
provisioning.zoneSetting.namingExpression.hostZoneAlias /  
provisioning.zoneSetting.namingExpression.storageZoneAlias**

Specifications of the script	Description
script	Function that is written in the syntax of ECMAScript 5. The following conditions of arguments and return must be satisfied.
arguments	<p>arguments[0]: The object with the following properties is passed as an argument.</p> <ul style="list-style-type: none"> <li>▪ hostname: Host name</li> <li>▪ hostPortWorldWideName: WWN of HBA. Separator notation is based on BNA.</li> <li>▪ storagePortWorldWideName: WWN of CHA. Separator notation is based on BNA.</li> <li>▪ storageSystemFamily: Display model name of the physical storage system</li> <li>▪ storageSystemName: Name of physical storage system on Ops Center API Configuration Manager</li> <li>▪ storageSystemName: Name of physical storage system on Ops Center API Configuration Manager</li> <li>▪ storageSystemSerialNumber: Serial number of physical storage system</li> <li>▪ storagePortName: Display port name of the storage system</li> <li>▪ virtualStorageArrayFamily: Display model name of virtual storage (if non-virtual, "-")</li> <li>▪ virtualStorageSystemName: Name of virtual storage on Ops Center API Configuration Manager (if non-virtual, "-")</li> <li>▪ virtualSerialNumber: Serial number of virtual storage (if non-virtual, "-")</li> <li>▪ serviceProperties: List of the service properties passed to the plug-in</li> </ul>
return	<p>The script must return a string that satisfies the following conditions:</p> <ol style="list-style-type: none"> <li>1. Available characters: Only alphanumeric characters and "_"</li> <li>2. The first character is alphabetic</li> <li>3. Zone is up to 60 characters, Zone Alias is up to 64 characters</li> <li>4. About Zone, the string starting from "LSAN_", "TI_", "QOSHn+_", "QOSMn+_", "QOSLn_" is not allowed (case ignored. "n" is number.)</li> </ol>

Specifications of the script	Description
example	<pre>(function(args) { var name; if(! args.virtualSerialNumber    args.virtualSerialNumber == "-"){ name = args.hostName + "_" + args.storageSystemName + "_" + args.storagePortName; }else{ name = args.hostName + "_" + args.virtualStorageSystemName + "_" + args.storagePortName; } if (!(name === null    typeof(name) == "string"    name instanceof String)) { throw new Error("Zone name must be a string: "+ name); } name = name.replace(/^[A-Za-z0-9_]/g, '_'); if(name.length &gt; 60){ throw new Error("Zone name must be within 60 characters: "+ name); } if (/^[A-Z]/i.test(name) == false) { throw new Error("Zone name must start with a alphabet: "+ name); } if (/^LSAN_/i.test(name)    /^TI_/i.test(name)    /^QOS[HML] [0-9]+_/i.test(name)) { throw new Error("Zone name has the prefix LSAN_, TI_ or QOSxx_ cannot be for normal zone: "+name); } return name; })</pre>

Table 201 SecondaryPool

Data nesting information	Description	Range	Remarks
values			
poolId	Pool ID	-	-
poolName	Pool name	-	-
poolType	Pool Type	-	-
usedCapacityRate	Used capacity rate	-	-
availableVolumeCapacity	Available Volume capacity	-	-

Data nesting information	Description	Range	Remarks
totalPoolCapacity	Total Pool capacity	-	-
numOfLdevs	Number of LDEVs	-	-

Table 202 SecondaryPoolForSnapPool

Data nesting information	Description	Range	Remarks
values			
poolId	Pool ID	-	-
poolName	Pool name	-	-
poolType	Pool Type	-	-
usedCapacityRate	Used capacity rate	-	-
availableVolumeCapacity	Available Volume capacity	-	-
totalPoolCapacity	Total Pool capacity	-	-
numOfLdevs	Number of LDEVs	-	-

Table 203 SecondaryVolumeSettings

Data nesting information	Description	Range	Remarks
values <sup>1</sup>			
volumeUsage	Volume Usage	A maximum of 64 characters can be entered.	-
ldevIdStartsFrom	LDEV ID Starts from	0-FFFFFF	-
volumeLabel	Volume Label	A maximum of 64 characters can be entered.	-
lunStartsFrom	LUN Starts From	0-07FF	-
virtualLdevIdStartsFrom	Virtual LDEV ID Starts From	0-FEFF	-

Data nesting information	Description	Range	Remarks
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 204 SecondaryVolumeSettingsForExistingPvol

Data nesting information	Description	Range	Remarks
values <sup>1</sup>			
PvolLdevID	Primary volume LDEV ID	-	-
ldevIdStartsFrom	LDEV ID Starts from	0-FFFFFF	-
volumeLabel	Volume Label	A maximum of 64 characters can be entered.	-
lunStartsFrom	LUN Starts From	0-07FF	-
virtualLdevIdStartsFrom	Virtual LDEV ID Starts From	0-FEFF	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 205 SecondaryResourceCriteria

Data nesting information	Description	Range
values <sup>1</sup>		
volumeUsage <sup>2</sup>	Volume Usage	-
storagePortCriteria	Storage Port Criteria	-
expressions <sup>1</sup>	Condition	-
name	Name	"Name".
op	Operator Type	"Equals", "Not Equals", "Starts With", "Ends With".
value	Value	-

Data nesting information			Description	Range
	join		Join condition of the Expressions	"All", "Any".
<ol style="list-style-type: none"> <li>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.</li> <li>2. Select from volume usage specified in "Volume Settings".</li> </ol>				

Table 206 SecondaryResourceCriteriaForExistingPvol

Data nesting information			Description	Range	Remarks
values <sup>1</sup>					
	PvolLdevID		Primary Volume LDEV ID	-	-
	storagePort Criteria		Storage Port Criteria	-	-
		condition	Condition	-	-
		name	Name	"Name"	-
		op	Operation	"Equals", "Not Equals", "Starts With", "Ends With"	-
		value	Value	-	-
	join		Join condition of the Expressions	"All", "Any"	-
<ol style="list-style-type: none"> <li>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.</li> </ol>					

Table 207 SecondaryHostGroupSettings

Data nesting information		Description	Range
value <sup>1</sup>			
	hostGroupName <sup>2</sup>	Host Group Name / iSCSI Target Alias	A maximum of 64 characters can be entered.
	iScsiTargetName <sup>3</sup>	iSCSI Target Name	A maximum of 32 characters can be entered.

Data nesting information		Description	Range
	wwnSettings <sup>1, 4</sup>		WWN Settings
		wwn	WWN
		wwnNickname	WWN Nickname
	iScsiSettings <sup>1, 5</sup>		iSCSI Settings
		iScsiName	iSCSI Name
		iScsiNickname	iSCSI Nickname
	hostMode		Host Mode
	hostModeOptions		Host Mode Options
<p>Remarks</p> <ol style="list-style-type: none"> <li>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.</li> <li>2. When "PortType" is "Fibre", hostGroupName can be specified.</li> <li>3. When "PortType" is "iSCSI", iScsiTargetName can be specified.</li> </ol>			

Data nesting information	Description	Range
4. When "PortType" is "Fibre", wwnSettings can be specified.		
5. When "PortType" is "iSCSI", iScsiSettings can be specified.		

**Table 208 provisioning.zoneSetting.namingExpression.zone /  
provisioning.zoneSetting.namingExpression.hostZoneAlias /  
provisioning.zoneSetting.namingExpression.storageZoneAlias**

Specifications of the script	Description
script	Function that is written in the syntax of ECMAScript 5. The following conditions of arguments and return must be satisfied.
arguments	<p>arguments[0]: The object with the following properties is passed as an argument.</p> <ul style="list-style-type: none"> <li>▪ hostname: Host name</li> <li>▪ hostPortWorldWideName: WWN of HBA. Separator notation is based on BNA.</li> <li>▪ storagePortWorldWideName: WWN of CHA. Separator notation is based on BNA.</li> <li>▪ storageSystemFamily: Display model name of the physical storage system</li> <li>▪ storageSystemName: Name of physical storage system on Ops Center API Configuration Manager</li> <li>▪ storageSystemName: Name of physical storage system on Ops Center API Configuration Manager</li> <li>▪ storageSystemSerialNumber: Serial number of physical storage system</li> <li>▪ storagePortName: Display port name of the storage system</li> <li>▪ virtualStorageArrayFamily: Display model name of virtual storage (if non-virtual, "-")</li> <li>▪ virtualStorageSystemName: Name of virtual storage on Ops Center API Configuration Manager (if non-virtual, "-")</li> <li>▪ virtualSerialNumber: Serial number of virtual storage (if non-virtual, "-")</li> <li>▪ serviceProperties: List of the service properties passed to the plug-in</li> </ul>
return	<p>The script must return a string that satisfies the following conditions:</p> <ol style="list-style-type: none"> <li>1. Available characters: Only alphanumeric characters and "_ "</li> </ol>



Specifications of the script	Description
	<ol style="list-style-type: none"> <li>2. The first character is alphabetic</li> <li>3. Zone is up to 60 characters, Zone Alias is up to 64 characters</li> <li>4. About Zone, the string starting from "LSAN_", "TI_", "QOSHn+_ ", "QOSMn+_ ", "QOSLn_" is not allowed (case ignored. "n" is number.)</li> </ol>
example	<pre>(function(args) { var name; if(! args.virtualSerialNumber    args.virtualSerialNumber =="-"){ name = args.hostName + "_" + args.storageSystemName + "_" + args.storagePortName; }else{ name = args.hostName + "_" + args.virtualStorageSystemName + "_" + args.storagePortName; } if (!(name === null    typeof(name) == "string"    name instanceof String)) { throw new Error("Zone name must be a string: "+ name); } name = name.replace(/^[A-Za-z0-9_]/g, '_'); if(name.length &gt; 60){ throw new Error("Zone name must be within 60 characters: "+ name); } if (/^[A-Z]/i.test(name) == false) { throw new Error("Zone name must start with a alphabet: "+ name); } if (/^LSAN_/i.test(name)    /^TI_/i.test(name)    /^QOS[HML] [0-9]+_/i.test(name)) { throw new Error("Zone name has the prefix LSAN_, TI_ or QOSxxx_ cannot be for normal zone: "+name); } return name; })</pre>

**Allocate volumes with clone/snapshot service (submit)**

keyName	Type	Description	Range	Default value
ConfigurationManagerConnection	File	Specify the Configuration Manager Connection.	See the "File type property list" section following this table.	-
StorageSystem	File	Specify the Storage System.	See the "File type property list" section following this table.	-
ResourceGroup	File	Specify the Resource Group.	See the "File type property list" section following this table.	-
ExistingOrCreateNewVolume	String	Specify whether to use existing volumes or create new ones.	"New Volumes" or "Existing Volumes"	"New Volumes"
CapacityFormat	String	Specify the volume capacity format as Byte or Block	"Byte" or "Block"	"Byte"

keyName	Type	Description	Range	Default value
VolumeSettings	File	Specify the parameters required to create new volumes.	See the "File type property list" section following this table.	[{"volumeUsage": "OS", "numberOfVolumes": 1, "ldevIdStartsFrom": 0, "volumeCapacityInMiB": 153600, "blockCapacity": "314572800", "volumeLabel": "", "lunStartsFrom": 0, "virtualLdevIdStartsFrom": 0}, {"volumeUsage": "App", "numberOfVolumes": 1, "ldevIdStartsFrom": 0, "volumeCapacityInMiB": 204800, "blockCapacity": "419430400", "volumeLabel": "", "lunStartsFrom": 0, "virtualLdevIdStartsFrom": 0}, {"volumeUsage": "Data", "numberOfVolumes": 1, "ldevIdStartsFrom": 0, "volumeCapacityInMiB": 460800, "blockCapacity": "943718400", "volumeLabel": "", "lunStartsFrom": 0, "virtualLdevIdStartsFrom": 0}

keyName	Type	Description	Range	Default value
				StartsFrom": 0}]
VolumeFilter	File	Specify conditions for filtering the candidate volumes. Not all candidates are displayed when there are many candidate volumes. Specify the conditions to narrow down the volume list.	See the "File type property list" section following this table.	-
VolumeFilterJoinType	String	Specify the Source Volume Filter join type.	"and" or "or"	"and"
Volumes	File		See the "File type property list" section following this table.	-
Pool	File	Specify the pool.	See the "File type property list" section following this table.	-
CapacitySavingFunction	String	Specify the Capacity Saving Function for target volumes.  Refer to your storage system product documentation for the optimal setting.	"None", "Compression", "Deduplication and Compression"	None

keyName	Type	Description	Range	Default value
CapacitySavingMode	String	Specify the Capacity Saving Mode for target volumes.  Refer to your storage system product documentation for the optimal setting.	"Inline mode", "Post-process mode"	Post-process mode
ResourceCriteria	File	Specify the resource criteria.	See the "File type property list" section following this table.	-
PortType	String	Specify the port type as Fibre or iSCSI.	"Fibre" or "iSCSI"	"Fibre"
HostGroupSettings	File	Specify the parameters that are needed to create a new Host Group/ iSCIS Target.	See the "File type property list" section following this table.	-
CopyType	string	Specify the copy type as Clone or Snapshot.	"Clone" or "Snapshot"	"Clone"
PrefixOfCopyGroupName	string	Specify the prefix of the copy group name to be assigned when creating the copy group. The copy group name is created by adding the prefix to the serial number of the generation.	The length should be less than 10. And the string should be consisted from only following character set. A string starts from '-' is not allowed. A-Z,a-z,0-9,;,:-!;:;:;:@' ; _	"Backups"

keyName	Type	Description	Range	Default value
CreateCopyPair <sup>1</sup>	boolean	Specifies whether to create S-Vols. If you specify 'false', a copy pair for Snapshot is created without S-Vols.	true = copy pair is created with S-Vols. false = copy pair is created without S-Vols.	true
SecondaryVolumeType	String	Specify the volume type as DP-VOL or V-VOL	"DP-VOL" or "V-VOL"	DP-VOL
SecondaryPool	File	Specify the pool for S-Vols.	See the "File type property list" section following this table.	-
SecondaryPoolForSnapPool	File	Specify the pool for S-Vols.	See the "File type property list" section following this table.	-
AverageDifferentialDataSize <sup>2</sup>	integer	Specify the average differential data size per collection (%).	1-100	20

keyName	Type	Description	Range	Default value
SecondaryVolumeSettings	File	Specify the parameters required to create new volumes for S-Vols.	See the "File type property list" section following this table.	[{"volumeUsage": "OS", "ldevIdStartsFrom": 0, "volumeLabel": "", "lunStartsFrom": 0, "virtualLdevIdStartsFrom": 0}, {"volumeUsage": "App", "ldevIdStartsFrom": 0, "volumeLabel": "", "lunStartsFrom": 0, "virtualLdevIdStartsFrom": 0}, {"volumeUsage": "Data", "ldevIdStartsFrom": 0, "volumeLabel": "", "lunStartsFrom": 0, "virtualLdevIdStartsFrom": 0}]
SecondaryVolumeSettings ForExistingPVol	File	Specify the parameters required to create new volumes for S-Vols.	See the "File type property list" section following this table.	-
SecondaryCapacitySaving Function	String	Specify the Capacity Saving Function for target volumes.  Refer to your storage system product documentation for the optimal setting.	"None", "Compression", "Deduplication and Compression"	None

keyName	Type	Description	Range	Default value
SecondaryCapacitySaving Mode	String	Specify the Capacity Saving Mode for target volumes.  Refer to your storage system product documentation for the optimal setting.	"Inline mode", "Post-process mode"	Post-process mode
SecondaryResourceCriteria	File	Specify the resource criteria for S-Vols.	See the "File type property list" section following this table.	-
SecondaryResourceCriteriaForExistingPVol	File	Specify the resource criteria for S-Vols.	See the "File type property list" section following this table.	-
SecondaryPortType	string	Specify the port type as Fibre or iSCSI for S-Vols.	"Fibre" or "iSCSI"	"Fibre"
SecondaryHostGroupSettings	File	Specify the parameters required to create a new Host Group/iSCSI Target or specify to use an existing Host Group/iSCSI Target for S-Vols.	See the "File type property list" section following this table.	-
<ol style="list-style-type: none"> <li>When "CopyType" is "Snapshot", CreateCopyPair can be specified.</li> <li>When "CopyType" is "Snapshot", AverageDifferentialDataSize can be specified.</li> </ol>				

**File type property list**

**Table 209 ConfigurationManagerConnection**

Data nesting information	Description	Range
values		



Data nesting information		Description	Range
	productName	Product name of registering to Web Service Connection	"ConfigurationManager"
	name	Name	-
	ipAddress	IP address	-
	port	Port	-
	protocol	Protocol	-
	userID	User ID	-
	status	Status of connection	-
	connectedTime	Connected time	-

**Table 210 StorageSystem**

Data nesting information		Description	Range
values			
	storageDeviceId	Storage Device ID	-
	model	Model	-
	serialNumber	Serial Number	-
	svplp	SVP IP Address	-

**Table 211 ResourceGroup**

Data nesting information		Description	Range
values			
	resourceGroupId	Resource Group ID	-
	resourceGroupName	Resource Group Name	-
	virtualStorageId	Virtual Storage System ID	-

**Table 212 VolumeFilter**

Data nesting information		Description	Range
values			

Data nesting information		Description	Range
	field	Field	"LDEV ID (Dec)", "LDEV ID (Hex)", "Label", "Pool ID"
	operator	Operator	When specifying "LDEV ID (Dec)" or "LDEV ID (Hex)" or "Pool ID", the following operators can be specified: "=", "<", ">", "<=", ">=", "!=".  When specify "Label", the following operators can be specified: "=", "!=", "startsWith", "endsWith".
	value	Value	-

**Table 213 Volumes**

Data nesting information		Description	Range
values			
	ldevId	LDEV ID	-
	virtualLdevId	Virtual LDEV ID	-
	label	Label	-
	resourceGroupId	Resource Group ID	-
	poolId	Pool ID	-
	byteFormatCapacity	Capacity	-
	blockCapacity	Block capacity	-

Data nesting information		Description	Range
	lun	LUN ID	-

**Table 214 Pool**

Data nesting information		Description	Range
values			
	poolId	Pool ID	-
	poolName	Pool name	-
	poolType	Pool Type	-
	usedCapacityRate	Used capacity rate	-
	availableVolumeCapacity	Available Volume capacity	-
	totalPoolCapacity	Total Pool capacity	-
	numOfLdevs	Number of LDEVs	-

**Table 215 Volume Settings**

Data nesting information		Description	Range
values <sup>1</sup>			
	volumeUsage	Volume usage	A maximum of 64 characters can be entered.
	numberOfVolumes	Number of volumes	1-500
	ldevIdStartsFrom	LDEV ID starts from	0-FFFFFF
	volumeCapacityInMiB <sup>2</sup>	Volume capacity	1-
	blockCapacity <sup>3</sup>	Volume capacity	96000-
	volumeLabel	Volume label	A maximum of 32 characters can be entered.
	volumeLabel	Volume label	A maximum of 64 characters can be entered.

Data nesting information		Description	Range
	lunStartsFrom	LUN starts from	0-07FF
	virtualLdevIdStartsFrom	Virtual LDEV ID starts from	0-FEFF
<ol style="list-style-type: none"> <li>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.</li> <li>2. When "CapacityFormat" is "Byte", volumeCapacityInMiB can be specified.</li> <li>3. When "CapacityFormat" is "Block", blockCapacity can be specified.</li> </ol>			

Table 216 ResourceCriteria

Data nesting information		Description	Range
values <sup>1</sup>			
	volumeUsage <sup>2</sup>	Volume Usage	-
	storagePortCriteria	Storage Port Criteria	-
	expressions <sup>1</sup>	Condition	-
	name	Name	"Name".
	op	Operator Type	"Equals", "Not Equals", "Starts With", "Ends With".
	value	Value	-
	join	Join condition of the Expressions	"All", "Any".
<ol style="list-style-type: none"> <li>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.</li> <li>2. Select from volume usage specified in "Volume Settings".</li> </ol>			

Table 217 HostGroupSettings

Data nesting information	Description	Range	Remarks
values <sup>1</sup>			
hostGroupName	Host Group name	A maximum of 64 characters can be entered.	When "PortType" is "Fibre", hostGroupName can be specified.

Data nesting information		Description	Range	Remarks
	iScsiTargetName	iSCSI target name	A maximum of 32 characters can be entered.	When "PortType" is "iSCSI", iScsiTargetName can be specified.
	wwnSettings <sup>1</sup>	WWN settings		When "PortType" is "Fibre", wwnSettings can be specified.
	wwn	WWN	A maximum of 16 characters is allowed in hexadecimal.	-
	wwnNickname	WWN nickname	A maximum of 64 characters can be entered.	-
	iScsiSettings <sup>1</sup>	iSCSI settings		When "PortType" is "iSCSI", iScsiSettings can be specified.
	iScsiName	iSCSI name	"Specify in iqn format or eui format. -iqn format: Specify 5-223 characters by using the following characters: a-z,0-9,. ,-, :- eui format: Specify 20 characters in hexadecimal."	-
	iScsiNickName	iSCSI nickname	A maximum of 32 characters can be entered.	-
	hostMode	Host Mode	See the Provisioning Guide for your storage system for details about the host mode.	-
	hostModeOptions	Host Mode options	See the Provisioning Guide for your storage system for details about host mode options.	-
<p>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.</p>				

**Table 218 SecondaryPool**

Data nesting information		Description	Range	Remarks
values				
poolId		Pool ID	-	-
poolName		Pool name	-	-
poolType		Pool Type	-	-
usedCapacityRate		Used capacity rate	-	-
availableVolumeCapacity		Available Volume capacity	-	-
totalPoolCapacity		Total Pool capacity	-	-
numOfLdevs		Number of LDEVs	-	-

**Table 219 SecondaryPoolForSnapPool**

Data nesting information		Description	Range	Remarks
values				
poolId		Pool ID	-	-
poolName		Pool name	-	-
poolType		Pool Type	-	-
usedCapacityRate		Used capacity rate	-	-
availableVolumeCapacity		Available Volume capacity	-	-
totalPoolCapacity		Total Pool capacity	-	-
numOfLdevs		Number of LDEVs	-	-

**Table 220 SecondaryVolumeSettings**

Data nesting information		Description	Range	Remarks
values <sup>1</sup>				
volumeUsage		Volume Usage	A maximum of 64 characters can be entered.	-

Data nesting information		Description	Range	Remarks
	ldevIdStartsFrom	LDEV ID Starts from	0-FFFFFF	-
	volumeLabel	Volume Label	A maximum of 64 characters can be entered.	-
	lunStartsFrom	LUN Starts From	0-07FF	-
	virtualLdevIdStartsFrom	Virtual LDEV ID Starts From	0-FE FF	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.				

**Table 221 SecondaryVolumeSettingsForExistingPvol**

Data nesting information		Description	Range	Remarks
values <sup>1</sup>				
	PvolLdevID	Primary volume LDEV ID	-	-
	ldevIdStartsFrom	LDEV ID Starts from	0-FFFFFF	-
	volumeLabel	Volume Label	A maximum of 64 characters can be entered.	-
	lunStartsFrom	LUN Starts From	0-07FF	-
	virtualLdevIdStartsFrom	Virtual LDEV ID Starts From	0-FE FF	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.				

**Table 222 SecondaryResourceCriteria**

Data nesting information		Description	Range
values <sup>1</sup>			
	volumeUsage <sup>2</sup>	Volume Usage	-

Data nesting information				Description	Range
	storagePortCriteria			Storage Port Criteria	-
		expressions <sup>1</sup>		Condition	-
			name	Name	"Name".
			op	Operator Type	"Equals", "Not Equals", "Starts With", "Ends With".
			value	Value	-
		join		Join condition of the Expressions	"All", "Any".
<p>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.</p> <p>2. Select from volume usage specified in "Volume Settings".</p>					

**Table 223 SecondaryResourceCriteriaForExistingPvol**

Data nesting information				Description	Range	Remarks
values <sup>1</sup>						
	PvolLdevID			Primary Volume LDEV ID	-	-
	storagePortCriteria			Storage Port Criteria	-	-
		condition		Condition	-	-
			name	Name	"Name"	-
			op	Operation	"Equals", "Not Equals", "Starts With", "Ends With"	-
			value	Value	-	-
		join		Join condition of the Expressions	"All", "Any"	-
<p>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.</p>						



**Table 224 SecondaryHostGroupSettings**

Data nesting information		Description	Range	
value <sup>1</sup>				
	hostGroupName <sup>2</sup>	Host Group Name / iSCSI Target Alias	A maximum of 64 characters can be entered.	
	iScsiTargetName <sup>3</sup>	iSCSI Target Name	A maximum of 32 characters can be entered.	
	wwnSettings <sup>1, 4</sup>	WWN Settings		
		wwn	WWN	A maximum of 16 characters is allowed in hexadecimal.
		wwnNickname	WWN Nickname	A maximum of 64 characters can be entered.
	iScsiSettings <sup>1, 5</sup>	iSCSI Settings		
		iScsiName	iSCSI Name	Specify in iqn format or eui format. -iqn format: Specify 5-223 characters by using the following characters: a-z,0-9,.,-,: -eui format: Specify 20 characters in hexadecimal.
		iScsiNickname	iSCSI Nickname	A maximum of 32 characters can be entered.
	hostMode	Host Mode	See the Provisioning Guide for your storage system for details about the host mode.	

Data nesting information		Description	Range
	hostModeOptions	Host Mode Options	See the Provisioning Guide for your storage system for details about host mode options.
<p>Remarks</p> <ol style="list-style-type: none"> <li>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.</li> <li>2. When "PortType" is "Fibre", hostGroupName can be specified.</li> <li>3. When "PortType" is "iSCSI", iScsiTargetName can be specified.</li> <li>4. When "PortType" is "Fibre", wwnSettings can be specified.</li> <li>5. When "PortType" is "iSCSI", iScsiSettings can be specified.</li> </ol>			

## Allocate volumes with clone/snapshot service (task details)

keyName	Type	Description	Range
LUNPathConfigurationInformation	File	Stores the allocated LUN path information from the volume allocation results.	See the "File type property list" section following this table.
SecondaryVolumeLUNPathConfigurationInformation	File	Stores the allocated LUN path information from the volume allocation results.	See the "File type property list" section following this table.
CopyPairConfigurationInformation	File	Stores the allocated LUN path information from the volume allocation results.	See the "File type property list" section following this table.
provisioning.taskResult.createdZoneConfigurations	File	List of new Zone Configurations	See the "File type property list" section following this table.
provisioning.taskResult.createdZones	File	List of new Zones	See the "File type property list" section following this table.

keyName	Type	Description	Range
provisioning.taskResult.createdZoneAliases	File	List of new Zone Aliases	See the "File type property list" section following this table.
provisioning.taskResult.updatedZoneConfigurations	File	List of Zone Configurations where the settings were updated	See the "File type property list" section following this table.
provisioning.taskResult.updatedZones	File	List of Zones where the settings were updated	See the "File type property list" section following this table.
provisioning.taskResult.updatedZoneAliases	File	List of Zone Aliases where the settings were updated	See the "File type property list" section following this table.
provisioning.taskResult.createdZoneConfigurations	File	List of new Zone Configurations	See the "File type property list" section following this table.
provisioning.taskResult.createdZones	File	List of new Zones	See the "File type property list" section following this table.
provisioning.taskResult.createdZoneAliases	File	List of new Zone Aliases	See the "File type property list" section following this table.
provisioning.taskResult.updatedZoneConfigurations	File	List of Zone Configurations where the settings were updated	See the "File type property list" section following this table.
provisioning.taskResult.updatedZones	File	List of Zones where the settings were updated	See the "File type property list" section following this table.
provisioning.taskResult.updatedZoneAliases	File	List of Zone Aliases where the settings were updated	See the "File type property list" section following this table.

## File type property list

Table 225 LUNPathConfigurationInformation

Data nesting information	Description	Range	
value <sup>1</sup>			
	storageDeviceId	Storage device ID	-
	hostPort	WWN/iSCSI name	-
	storagePort	Storage port	-
	lun	LUN	-
	portType	Port type	-
	capacity	Capacity	-
	ldevId	LDEV ID	-
	hostGroupNameOrIscsiTarget	Host Group name/iSCSI target name	-
	hostGroupNumber	Host Group number	-
	hostMode	Host Mode	-
	hostModeOptions	Host Mode options	-
	model	Model	-
	serialNumber	Serial number	-
	ldevLabel	LDEV label	-
	virtualStorageMachineResourceGroupName	Resource Group in Virtual Storage System	-
	virtualModel	Model in Virtual Storage System	-
	virtualSerialNumber	Serial number in Virtual Storage System	-
	resourceGroupName	Virtual Storage Machine Resource Group name	-
	virtualLdevId	Virtual LDEV ID	-
	configurationManager	Configuration Manager	-
	poolId	Pool ID	-
	asymmetricAccessStatus	ALUA settings	-
1. Repeatable items must be repeated and must include all lower layer tags.			

**Table 226 SecondaryVolumeLUNPathConfigurationInformation**

Data nesting information		Description	Range
value <sup>1</sup>			
	storageDeviceId	Storage device ID	-
	hostPort	WWN/iSCSI name	-
	storagePort	Storage port	-
	lun	LUN	-
	portType	Port type	-
	capacity	Capacity	-
	ldevId	LDEV ID	-
	hostGroupNameOrIscsiTarget	Host Group name/iSCSI target name	-
	hostGroupNumber	Host Group number	-
	hostMode	Host Mode	-
	hostModeOptions	Host Mode options	-
	model	Model	-
	serialNumber	Serial number	-
	ldevLabel	LDEV label	-
	virtualStorageMachineResourceGroupName	Resource Group in Virtual Storage System	-
	virtualModel	Model in Virtual Storage System	-
	virtualSerialNumber	Serial number in Virtual Storage System	-
	resourceGroupName	Virtual Storage Machine Resource Group name	-
	virtualLdevId	Virtual LDEV ID	-
	configurationManager	Configuration Manager	-
	poolId	Pool ID	-
	asymmetricAccessStatus	ALUA settings	-
1. Repeatable items must be repeated and must include all lower layer tags.			

**Table 227 CopyPairConfigurationInformation**

Data nesting information	Description	Range	
value <sup>1</sup>			
	copyType	Storage device ID	-
	groupName	WWN/iSCSI name	-
	hostPorts	Storage port	-
	backupHostPorts	LUN	-
	hostGroup	Port type	-
	backupHostGroup	Capacity	-
	volumeUsage	LDEV ID	-
	pairName	Host Group name/iSCSI target name	-
	pvolLdevId	Host Group number	-
	svolLdevId	Host Mode	-
	storageSystemModel	Host Mode options	-
	storageSystemSerialNumber	Model	-
	pvolVirtualLdevId	Serial number	-
	svolVirtualLdevId	LDEV label	-
virtualStorageSystem	Resource Group in Virtual Storage System	-	
1. Repeatable items must be repeated and must include all lower layer tags.			

**Table 228 CopyPairConfigurationInformation**

Data nesting information	Description	Range	
value <sup>1</sup>			
	copyType	Copy Type	-
	groupName	Copy Group Name	-
	hostPorts	Target host port which primary volume has allocated to.	-
	backupHostPorts	Target host port which secondary volume has allocated to.	-

Data nesting information	Description	Range
hostGroup	Primary Host Group	-
backupHostGroup	Secondary Host Group	-
volumeUsage	Volume Usage	-
pairName	Copy Pair Name	-
pvolLdevId	Primary LDEV ID (in hexadecimal)	-
svolLdevId	Secondary LDEV ID (in hexadecimal)	-
storageSystemModel	Storage System Model	-
storageSystemSerialNumber	Storage System Serial No.	-
pvolVirtualLdevId	Primary Virtual LDEV ID	-
svolVirtualLdevId	Secondary Virtual LDEV ID	-
virtualStorageSystem	Virtual Storage System Name	-

1. Repeatable items must be repeated and must include all lower layer tags.

Table 229 provisioning.taskResult.zoneConfiguration

Data nesting information	Description	Range
value <sup>1</sup>	List of new Zone Configurations	
name	Name of new Zone Configuration	-
bnName	Name of BNA that manages the settings	-
fabricName	Name of Fabric where the settings exist	-
zoneNames <sup>1</sup>	Zone to be added to the created Zone Configuration	-

1. Repeatable items must be repeated and must include all lower layer tags.

Table 230 provisioning.taskResult.zoneConfiguration

Data nesting information	Description	Range
value <sup>1</sup>	List of new Zone Configurations	

Data nesting information		Description	Range
	name	Name of new Zone Configuration	-
	bnaname	Name of BNA that manages the settings	-
	fabricName	Name of Fabric where the settings exist	-
	zoneNames <sup>1</sup>	Zone to be added to the created Zone Configuration	-
1. Repeatable items must be repeated and must include all lower layer tags.			

**Table 231 provisioning.taskResult.createdZones**

Data nesting information		Description	Range
value <sup>1</sup>		List of new Zone	
	name	Name of new Zone	-
	bnaname	Name of BNA that manages the settings	-
	fabricName	Name of Fabric where the settings exist	-
	aliasNames <sup>1</sup>	Zone alias to be added to the created Zone	-
	memberNames <sup>1</sup>	WWN of the port added to the created Zone	-
1. Repeatable items must be repeated and must include all lower layer tags.			

**Table 232 provisioning.taskResult.createdZoneAliases**

Data nesting information		Description	Range
value <sup>1</sup>		List of new Zone aliases	
	name	Name of new Zone alias	-
	bnaname	Name of BNA that manages the settings	-
	fabricName	Name of Fabric where the settings exist	-



Data nesting information	Description	Range	
	memberNames <sup>1</sup>	WWN of the port added to the created Zone	-
<p>1. Repeatable items must be repeated and must include all lower layer tags.</p>			

**Table 233 provisioning.taskResult.updatedZoneConfigurations**

Data nesting information	Description	Range	
value <sup>1</sup>	List of new Zone Configuration where the settings were updated		
	name	Name of new Zone Configuration where the settings were updated	-
	bnaName	Name of BNA that manages the settings	-
	fabricName	Name of Fabric where the settings exist	-
	zoneNames <sup>1</sup>	Name of added Zone	-
<p>1. Repeatable items must be repeated and must include all lower layer tags.</p>			

**Table 234 provisioning.taskResult.updatedZones**

Data nesting information	Description	Range	
value <sup>1</sup>	List of new Zones where the settings were updated		
	name	Name of new Zone where the settings were updated	-
	bnaName	Name of BNA that manages the settings	-
	fabricName	Name of Fabric where the settings exist	-
	aliasNames <sup>1</sup>	Zone alias to be added to the created Zone	-
	memberNames <sup>1</sup>	WWN of the added port	-
<p>1. Repeatable items must be repeated and must include all lower layer tags.</p>			

**Table 235 provisioning.taskResult.updatedZoneAliases**

Data nesting information		Description	Range
value <sup>1</sup>		List of new Zone aliases where the settings were updated	
	name	Name of new Zone alias where the settings were updated	-
	bnaname	Name of BNA that manages the settings	-
	fabricName	Name of Fabric where the settings exist	-
	memberNames <sup>1</sup>	WWN of the added port	-
1. Repeatable items must be repeated and must include all lower layer tags.			

## Allocate Volumes with Remote Replication (Global-Active Device) service properties

Use the following properties to modify or create values for the Allocate volumes with remote replication (global-active device) service.

### Allocate Volumes with Remote Replication (global-active device) (edit)

KeyName	Type	Description	Range	Default Value
ConfigurationManagerConnection	file	Specify the Ops Center API Configuration Manager connection for P-Vols.	See the following File type property list	-
StorageSystem	file	Specify the storage system for P-Vols.	See the following File type property list	-
ExistingOrCreateNewVolume	string	Specify whether to use existing volumes or create new ones.	"New Volumes" or "Existing Volumes"	New Volumes

KeyName	Type	Description	Range	Default Value
ResourceGroupSelection	string	Specify whether to select resource group at volume allocation. If you select 'Meta resource', then the meta resource group will be selected.	"Meta resource" or "Manual"	Manual
ResourceGroup	file	Specify the Resource Group for P-Vols.	See the following File type property list	-
PoolSelection	string	Specify whether to select pool at volume allocation. If you select 'Automatic', then a pool will be selected automatically.	"Automatic" or "Manual"	Automatic
Pool	file	Specify the pool for P-Vols.	See the following File type property list	-
CapacityFormat	string	Specify the volume capacity format as Byte or Block.	"Byte" or "Block"	Byte

KeyName	Type	Description	Range	Default Value
VolumeSettings	file	Specify the parameters required to create new volumes for P-Vols.	See the following File type property list	{{"volumeUsage": "OS", "numberOfVolumes": 1, "volumeCapacityInMiB": 153600, "blockCapacity": "314572800", "volumeLabel": "", "diskType": [], "idevSetting": {"idevIdStartsFrom": 0, "virtualdevdStartsFrom": 0}, "lunSetting": {"lunStartsFrom": 0}}, {"volumeUsage": "App", "numberOfVolumes": 1, "volumeCapacityInMiB": 204800, "blockCapacity": "419430400", "volumeLabel": "", "diskType": [], "idevS

KeyName	Type	Description	Range	Default Value
				etting": {"devIdS tartsFro m":0,"virt ualLdevl dStartsFr om":0},"l unSettin g": {"lunStart sFrom":0 }}, {"volume Usage": "Data","n umberOf Volumes ":1,"volu meCapa cityInMiB ":460800 ,"blockC apacity": "943718 400","vol umeLab el":"","dis kType": [],"devS etting": {"devIdS tartsFro m":0,"virt ualLdevl dStartsFr om":0},"l unSettin g": {"lunStart sFrom":0 } }}]

KeyName	Type	Description	Range	Default Value
VolumeFilter	file	Specify conditions for filtering the candidate volumes. Not all candidates are displayed when there are many candidate volumes. Specify the conditions to narrow down the volume list.	See the following File type property list	-
VolumeFilterJoinType	string	Specify the source volume filter join type.	"and" or "or"	and
RowsPage	integer	Specify display row per page in the volumes	100 or 500 or 1000 (in dex)	1000
CurrentPage	integer	Specify number of pages to display in the volumes	1 - Integer maximum value	1
Volumes	file	Specify the volume to be used as the primary volume.	See the following File type property list	-
CapacitySavingFunction	String	Specify the Capacity Saving Function for target volumes. Refer to your storage system product documentation for the optimal setting.	"None", "Compression", "Deduplication and Compression"	None
CapacitySavingMode	String	Specify the Capacity Saving Mode for target volumes. Refer to your storage system product documentation for the optimal setting.	"Inline mode", "Post-process mode"	Post-process mode

KeyName	Type	Description	Range	Default Value
ResourceCriteria	file	Specify the resource criteria.	See the following File type property list	-
PortType	string	Specify the port type as Fibre or iSCSI.	"Fibre" or "iSCSI"	"Fibre"
HostMode	file	Specify the parameters for creating a new host group.	See the following File type property list	{"hostMode": "WIN_EX", "hostModeOption": []}
NumberOfHosts	string	Select the number of hosts to allocate volume.	"Single" or "Multiple"	"Single"
MultipleHostsPerStoragePort <sup>1</sup>	boolean	Select to share storage ports with multiple hosts.	true or false	false
MultipleHostsPerHostGroup <sup>2</sup>	boolean	Select to share host groups with multiple hosts.	true or false	false
HostSettingsForSingleHost <sup>3</sup>	file	Specify information about the hosts where the volumes will be allocated.	See the following File type property list	{"hostName": "", "wwnSettings": [], "iScsiSettings": []}
HostSettingsForMultiHost <sup>1</sup>	file	Specify information about the hosts where the volumes will be allocated.	See the following File type property list	-
PrimaryFabricSettingEnabled	boolean	Select this option to enable fabric information collection.	true or false	false

KeyName	Type	Description	Range	Default Value
PrimaryConnectionNames	string	Specify the connection name defined in the Web Service Connections on the Administration tab. Separate multiple values by commas. If this value is omitted, the system uses all connections that are defined for the product name listed in the Web Service Connections.	-	-
PrimaryFabricResourcegroups	string	Specify the switch management server resource group. Separate multiple values by commas.	-	All
PrimaryTargetFabrics	string	Specify the fabric name. Separate multiple values by commas. If this value is omitted, the system uses all the fabrics that the BNA monitors.	-	-
PrimaryUsingExistingZone	boolean	Specifies whether to select a predefined zone or any connectable path. If you specify True, the system selects paths within the range of the existing Zone setting. If you specify False, the system selects connectable paths regardless of the existing Zone setting.	true or false	true



KeyName	Type	Description	Range	Default Value
PrimaryFabricHopsRestriction	boolean	Determines whether the service will fail if there is no path that matches the specified collection range.	true or false	false
PrimaryZoneSettingEnabled	boolean	Select this option to enable the modification of zone settings.	true or false	false
PrimaryUseExistingZoneAliases	boolean	Specify True to use predefined Zone Aliases regardless of the naming conventions the user specifies. If you specify False, the system selects Zone Aliases that follow the naming conventions. In either case, if there are no existing Zone Aliases, the system creates new Zone Aliases that follow the naming conventions.	true or false	false
PrimaryUpdateActiveZoneConfiguration	boolean	Select this option to add a Zone to the active Zone Configuration.	true or false	true
PrimaryZoneConfigurationNameToUpdate	string	To add a zone to a Zone Configuration other than the active configuration, specify the name of the Zone Configuration in which to add the zone.	-	-

KeyName	Type	Description	Range	Default Value
PrimaryNamingScriptZone	file	Specify the naming convention script that determines the Zone name for the path.	See the following script specifications.	See the following script example.
PrimaryNamingScriptHostZoneAlias	file	Specify the naming convention script that determines the Zone Alias name for the host port.	See the following script specifications.	See the following script example.
PrimaryNamingScriptStorageZoneAlias	file	Specify the zone information.	See the following script specifications.	See the following script example.
SecondaryConfigurationManagerConnection	file	Specify the Ops Center API Configuration Manager connection for S-Vols.	See the following File type property list	-
SecondaryStorageSystem	file	Specify the Storage System for S-Vols.	See the following File type property list	-
SecondaryResourceGroupSelection	string	Specify whether to select resource group at volume allocation. If you select 'Meta resource', then the meta resource group will be selected.	"Meta resource" or "Manual"	"Manual"
SecondaryResourceGroup	file	Specify the Resource Group for S-Vols.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
SecondaryPoolSelection	string	Specify whether to select pool at volume allocation. If you select 'Automatic', then a pool will be selected automatically.	"Automatic" or "Manual"	"Automatic"
SecondaryPool	file	Specify the pool for S-Vols.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
SecondaryVolumeSettings	file	Specify the parameters required to create new volumes for S-Vols.	See the following File type property list	<pre>[{"volumeUsage": "OS", "volumeLabel": "", "diskType": [], "devSetting": {"devIdStartsFrom": 0, "virtualDevIdStartsFrom": 0}, "lunSetting": {"lunStartsFrom": 0}}, {"volumeUsage": "App", "volumeLabel": "", "diskType": [], "devSetting": {"devIdStartsFrom": 0, "virtualDevIdStartsFrom": 0}, "lunSetting": {"lunStartsFrom": 0}}, {"volumeUsage": "Data", "volumeLabel": "", "diskType": [], "devSetting":</pre>

KeyName	Type	Description	Range	Default Value
				{ "devIdS tartsFrom":0, "virtualdevl dStartsFrom":0}, "l unSetting": { "lunStart sFrom":0 }}
SecondaryVolumeSettingsForExistingPVol	file	Specify the parameters required to create new volumes.	See the following File type property list	-
SecondaryVolumeFilter	file	Specify conditions for filtering the candidate volumes. Not all candidates are displayed when there are many candidate volumes. Specify the conditions to narrow down the volume list.	See the following File type property list	-
SecondaryVolumeFilterJoinType	string	Specify the source volume filter join type.	"and" or "or"	"and"
SecondaryRowsPage	integer	Specify display row per page in the volumes	100 or 500 or 1000 (in dex)	1000
SecondaryCurrentPage	integer	Specify number of pages to display in the volumes	1 - Integer maximum value	1
SecondaryVolumes	file	Specify the volume to be used as the Secondary Volume.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
SecondaryCapacitySavingFunction	String	Specify the Capacity Saving Function for target volumes.  Refer to your storage system product documentation for the optimal setting.	"None", "Compression", "Deduplication and Compression"	None
SecondaryCapacitySavingMode	String	Specify the Capacity Saving Mode for target volumes.  Refer to your storage system product documentation for the optimal setting.	"Inline mode", "Post-process mode"	Post-process mode
SecondaryResourceCriteria	file	Specify the resource criteria.	See the following File type property list	-
SecondaryResourceCriteriaForExistingPVol	file	Specify the resource criteria.	See the following File type property list	-
SecondaryPortType	string	Specify the port type as Fibre or iSCSI.	"Fibre" or "iSCSI"	"Fibre"
SecondaryHostMode	file	Specify the parameters for creating a new host group.	See the following File type property list	{"hostMode": "WIN_EX", "hostModeOption": []}
SecondaryNumberOfHosts	string	Select the number of hosts to allocate volume.	"Single" or "Multiple"	"Single"
SecondaryMultipleHostsPerStoragePort <sup>1</sup>	boolean	Select to share storage ports with multiple hosts.	true or false	false

KeyName	Type	Description	Range	Default Value
SecondaryMultipleHostsPerHostGroup <sup>2</sup>	boolean	Select to share host groups with multiple hosts.	true or false	false
SecondaryHostSettingsForSingleHost <sup>3</sup>	file	Specify information about the hosts where the volumes will be allocated.	See the following File type property list	{"hostName":"","wwnSettings": [],"iScsiSettings": []}
SecondaryHostSettingsForMultiHost <sup>1</sup>	file	Specify information about the hosts where the volumes will be allocated.	See the following File type property list	-
SecondaryFabricSettingEnabled	boolean	Select this option to enable fabric information collection.	true or false	false
SecondaryConnectionNames	string	Specify the connection name defined in the Web Service Connections on the Administration Tab. Separate multiple values by commas. If this value is omitted, the system uses all connections that are defined for the product name listed in the Web Service Connections.	-	-
SecondaryFabricResourcegroups	string	Specify the switch management server resource group. Separate multiple values by commas.	-	All

KeyName	Type	Description	Range	Default Value
SecondaryTargetFabrics	string	Specify the fabric name. Separate multiple values by commas. If this value is omitted, the system uses all the fabrics that the BNA monitors.	-	-
SecondaryUsingExistingZone	boolean	Specifies whether to select a predefined zone or any connectable path. If you specify True, the system selects paths within the range of the existing Zone setting. If you specify False, the system selects connectable paths regardless of the existing Zone setting.	true or false	true
SecondaryFabricHopsRestriction	boolean	Determines whether the service will fail if there is no path that matches the specified collection range.	true or false	false
SecondaryZoneSettingEnabled	boolean	Select this option to enable the modification of zone settings.	true or false	false



KeyName	Type	Description	Range	Default Value
SecondaryUseExistingZoneAliases	boolean	Specify True to use predefined Zone Aliases regardless of the naming conventions the user specifies. If you specify False, the system selects Zone Aliases that follow the naming conventions. In either case, if there are no existing Zone Aliases, the system creates new Zone Aliases that follow the naming conventions.	true or false	false
SecondaryUpdateActiveZoneConfiguration	boolean	Select this option to add a Zone to the active Zone Configuration.	true or false	true
SecondaryZoneConfigurationNameToUpdate	string	To add a zone to a Zone Configuration other than the active configuration, specify the name of the Zone Configuration in which to add the zone.	-	-
SecondaryNamingScriptZone	file	Specify the naming convention script that determines the Zone name for the path.	See the following script specifications.	See the following script example.
SecondaryNamingScriptHostZoneAlias	file	Specify the naming convention script that determines the Zone Alias name for the host port.	See the following script specifications.	See the following script example.

KeyName	Type	Description	Range	Default Value
SecondaryNamingScriptStorageZoneAlias	file	Specify the zone information.	See the following script specifications.	See the following script example.
ExistingOrCreateNewCopyGroup	string	Specify whether to use an existing copy group or create a new one.	"New Copy Group" or "Existing Copy Group"	New Copy Group
CopyGroupName <sup>4</sup>	string	Specify the name of the new copy group to create.	The length should be less than 29. The string should consist of the following character set: A-Z,a-z,0-9,-,.,:,@,_ A string beginning with '-' is not allowed.	-
ExistingCopyGroup <sup>5</sup>	file	Specify the existing copy group.	See the following File type property list	-
CopyPace <sup>6</sup>	integer	Specify the copy speed. The larger value you specify the faster the copy speed will be.	1 to 15 (in dex)	3
UseTheNocopyOption	boolean	Specify whether to perform initial copy when creating a pair.	true or false	true
AssignCTG <sup>7</sup>	boolean	Specify whether to register the new pairs in a consistency group.	true or false	true

KeyName	Type	Description	Range	Default Value
CTGIDSelection <sup>8</sup>	string	Specify whether to select the consistency group ID automatically or manually.	"Auto Selection" or "Manual Selection"	Auto Selection
CTGID <sup>9</sup>	string	Specify the consistency group ID by using a hexadecimal (base 16) number.	The range of selectable CTG ID is changed due to specified primary and secondary storage systems as follows: <ul style="list-style-type: none"> <li>▪ VSP G200 0 to F (in hex)</li> <li>▪ VSP G400, G600, VSP F400, F600, VSP N400, N600 0 to 3F (in hex)</li> </ul>	-

KeyName	Type	Description	Range	Default Value
			<ul style="list-style-type: none"> <li>▪ VSP One</li> <li>B28, VSP</li> <li>One</li> <li>B26, VSP</li> <li>One</li> <li>B24, VSP</li> <li>E1090, VSP</li> <li>E1090,</li> <li>VSP</li> <li>E1090H,</li> <li>VSP E590,</li> <li>VSP E790,</li> <li>VSP</li> <li>E590H,</li> <li>VSP</li> <li>E790H,</li> <li>VSP G130,</li> <li>VSP G350,</li> <li>VSP G370,</li> <li>VSP G700,</li> <li>VSP F350,</li> <li>VSP F370,</li> <li>VSP F700,</li> <li>VSP</li> <li>G800, VSP</li> <li>F800, VSP</li> <li>N800 0 to</li> <li>7F (in hex)</li> </ul>	

KeyName	Type	Description	Range	Default Value
			<ul style="list-style-type: none"> <li>▪ VSP E990, VSP G900, VSP F900, VSP G1000, VSP P G1500, VSP P F1500 0 to FF (in hex)</li> <li>▪ VSP 5100, 5500, 5100H, 5500H, VSP 5200, 5600, 5200H, 5600H 0 to 3FF (in hex)</li> </ul> <p>When storage models are different between the primary and the secondary, the narrower range takes precedence.</p>	
MUNumberSelection <sup>10</sup>	string	Specify whether to select the MU (mirror unit) number automatically or manually.	"Auto Selection" or "Manual Selection"	Auto Selection
MUNumber <sup>11</sup>	string	Specify the MU (mirror unit) number by using a number from 0 to 3.	0 to 3	0

KeyName	Type	Description	Range	Default Value
PathGroupIDSelection	string	Specify whether to select the path group ID automatically or manually. If you specify "Auto Selection", 0 is automatically chosen.	"Auto Selection" or "Manual Selection"	Auto Selection
PathGroupID <sup>12</sup>	string	Specify the path group ID by using a hexadecimal (base 16) number in the range from 00 to FF.	00 to FF (in hex)	00
ReductionForceCopy	boolean	Specify whether to forcibly create a pair for the volume for which the capacity saving function (deduplication and compression) is enabled.	true or false	false
QuorumDiskId	file	Specify the Quorum disk id.	See the following File type property list	-
<ol style="list-style-type: none"> <li>1. When "NumberOfHosts" is "Multiple"</li> <li>2. When "MultipleHostsPerStoragePort" is true</li> <li>3. When "NumberOfHosts" is "Single"</li> <li>4. When "ExistingOrCreateNewCopyGroup" is "New Copy Group", CopyGroupName can be specified.</li> <li>5. When "ExistingOrCreateNewCopyGroup" is "Existing Copy Group", ExistingCopyGroup can be specified.</li> <li>6. When "ReplicationType" is "Synchronous Remote Clone", CopyPace can be specified.</li> <li>7. When "ReplicationType" is "Synchronous Remote Clone" or "Global-Active Device" and "ExistingOrCreateNewCopyGroup" is "New Copy Group", AssignCTG can be specified.</li> <li>8. When "ReplicationType" is "Synchronous Remote Clone" or "Global-Active Device" and "ExistingOrCreateNewCopyGroup" is "New Copy Group" and "AssignCTG" is true, or when "ReplicationType" is "Asynchronous Remote Clone" and "ExistingOrCreateNewCopyGroup" is "New Copy Group", CTGIDSelection can be specified.</li> </ol>				

KeyName	Type	Description	Range	Default Value
<p>9. When "CTGIDSelection" is "Manual Selection", CTGID can be specified.</p> <p>10. When "ReplicationType" is "Asynchronous Remote Clone" and "ExistingOrCreateNewCopyGroup" is "New Copy Group", MUNumberSelection can be specified.</p> <p>11. When "MUNumberSelection" is "Manual Selection", MUNumber can be specified.</p> <p>12. When "PathGroupIDSelection" is "Manual Selection", PathGroupID can be specified.</p>				

### File type property list

**Table 236 ConfigurationManagerConnection**

Data nesting information		Description	Range
value			
	Product name to register to the Web Service Connection.	Category	ConfigurationManager
	name	Name	-
	ipAddress	IP Address/Host Name	-
	port	Port	-
	protocol	Protocol	-
	userID	User ID	-
	status	Status	-
	connectedTime	Connected Time	-

**Table 237 StorageSystem**

Data nesting information		Description	Range
value			
	storageDeviceId	Storage Device ID	-
	model	Model	-
	serialNumber	Serial Number	-
	svplp	SVP IP Address	-

**Table 238 ResourceGroup**

Data nesting information		Description	Range
value			
	resourceGroupId	Resource group ID	-
	resourceGroupName	Resource group name	-
	virtualStorageID	Virtual storage system ID	-

**Table 239 Pool**

Data nesting information		Description	Range
value			
	poolId	Pool ID	-
	poolName	Pool name	-
	poolType	Pool type	-
	usedCapacityRate	Used capacity rate	-
	availableVolumeCapacity	Available volume capacity	-
	totalPoolCapacity	Total pool capacity	-
	numOfLdevs	Number of LDEVs	-

**Table 240 VolumeSettings**

Data nesting information		Description	Range
value <sup>1</sup>			
	volumeUsage	Volume Usage	A maximum of 64 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,~,!,@,#,\$,%^,&,(,)_,+,-,=,{,},[,],',,`
	numberOfVolumes	Number of Volumes	1-500
	ldevIdStartsFrom	LDEV ID Starts from	0-FFFFFF
	volumeCapacityInMiB	Volume Capacity	-



Data nesting information		Description	Range
	blockCapacity	Volume Capacity	-
	volumeLabel	Volume Label	A maximum of 32 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,!,#,\$,%,&',(,),+,-,:;=@, [, ], ^, _ , ` , { , } , ~ , / , \
	lunStartsFrom	LUN Starts From	0-07FF
	virtualLdevIdStartsFrom	Virtual LDEV ID Starts From	0-FE FF
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

Table 241 VolumeFilter

Data nesting information		Description	Range
value <sup>1</sup>			
	field	Field	"LDEV ID (Dec)", "LDEV ID (Hex)", "Label", "Pool ID", "Port ID", "Host Group Name"
	operator	Operator	When you specify "LDEV ID (Dec)" or "LDEV ID (Hex)" or "Pool ID", the following operators can be specified: "=", "<", ">", "<=", ">=", "!=".  When you specify "Label" or "Port ID" or "Host Group Name", the following operators can be specified: "=", "!", "startsWith", "endsWith".
	value	Value	-
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

Table 242 Volumes

Data nesting information		Description	Range
value <sup>1</sup>			
	ldevId	LDEV ID	-
	virtualLdevId	Virtual LDEV ID	-

Data nesting information		Description	Range
	label	Label	-
	resourceGroupId	Resource group ID	-
	poolId	Pool ID	-
	byteFormatCapacity	Capacity	-
	blockCapacity	Block capacity	-
	lun	LUN ID	-
	copyPairAttributes	Copy pair attributes	
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 243 ResourceCriteria**

Data nesting information				Description	Range
value <sup>1</sup>					
	volumeUsage			Volume usage	-
	storagePortCriteria			Storage port criteria	-
		expressions <sup>2</sup>		Condition	-
			name	Attribute	"Name"
			op	Operator type	"Equals", "Not Equals", "Starts With", "Ends With"
			value	Value	-
		join		Join condition of the expressions	"All", "Any"
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p> <p>2. Select from the volume usage specified in "Volume Settings".</p>					

Table 244 HostMode

Data nesting information		Description	Range
value			
	hostMode <sup>1</sup>	Host Mode	-
	hostModeOptions <sup>1</sup>	Host Mode Options	-
<p>1. See the Provisioning Guide for your storage system for details about the host mode and host mode options.</p>			

Table 245 HostSettingsForSingleHost

Data nesting information		Description	Range
value			
	hostName	Host name	A maximum of 64 characters can be entered.
	wwnSettings <sup>1, 2</sup>		-
	wwn	WWN	16 characters in hexadecimal.
	wwnNickname	WWN nickname	A maximum of 64 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,:,@,_ The string cannot start with a hyphen (-).
	enableALUA	Enable Asymmetric Logical Unit Access (ALUA)	true or false
	enableHMONonPreferred	Enable HMO non preferred	true or false
	iScsiSettings <sup>1, 3</sup>	iSCSI settings	-

Data nesting information			Description	Range
		iScsiName	iSCSI name	Specify in iqn format or eui format. -iqn format: Specify 5-223 characters by using the following characters: a-z,0-9,.,-,: - eui format: Specify 20 characters in hexadecimal.
		iScsiNickname	iSCSI nickname	A maximum of 32 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,@,_  The string cannot start with a hyphen (-).
<ol style="list-style-type: none"> <li>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</li> <li>2. When "PortType" is "Fibre", wwnSettings can be specified.</li> <li>3. When "PortType" is "iSCSI", iScsiSettings can be specified.</li> </ol>				

**Table 246 HostSettingsForMultiHost**

Data nesting information			Description	Range
value				
	hostName		Host name	A maximum of 64 characters can be entered.
	wwnSettings <sup>1, 2</sup>			-
		wwn	WWN	16 characters in hexadecimal.
		wwnNickname	WWN nickname	A maximum of 64 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,@,_  The string cannot start with a hyphen (-).

Data nesting information		Description	Range
	enableALUA	Enable Asymmetric Logical Unit Access (ALUA)	true or false
	enableHMONonPreferred	Enable HMO non preferred	true or false
	iScsiSettings <sup>1, 3</sup>	iSCSI settings	-
	iScsiName	iSCSI name	Specify in iqn format or eui format. -iqn format: Specify 5-223 characters by using the following characters: a-z,0-9,.,-,: - eui format: Specify 20 characters in hexadecimal.
	iScsiNickname	iSCSI nickname	A maximum of 32 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,@,_  The string cannot start with a hyphen (-).
<ol style="list-style-type: none"> <li>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</li> <li>2. When "PortType" is "Fibre", wwnSettings can be specified.</li> <li>3. When "PortType" is "iSCSI", iScsiSettings can be specified.</li> </ol>			

**Table 247 SecondaryConfigurationManagerConnection**

Data nesting information		Description	Range
value			
	Product name to register to the Web Service Connection.	Category	ConfigurationManager
	name	Name	-
	ipAddress	IP Address/Host Name	-
	port	Port	-

Data nesting information		Description	Range
	protocol	Protocol	-
	userID	User ID	-
	status	Status	-
	connectedTime	Connected Time	-

Table 248 SecondaryStorageSystem

Data nesting information		Description	Range
value			
	storageDeviceId	Storage Device ID	-
	model	Model	-
	serialNumber	Serial Number	-
	svplp	SVP IP Address	-

Table 249 SecondaryResourceGroup

Data nesting information		Description	Range
value			
	resourceGroupId	Resource group ID	-
	resourceGroupName	Resource group name	-
	virtualStorageID	Virtual storage system ID	-

Table 250 SecondaryPool

Data nesting information		Description	Range
value			
	poolId	Pool ID	-
	poolName	Pool name	-
	poolType	Pool type	-
	usedCapacityRate	Used capacity rate	-

Data nesting information		Description	Range
	availableVolumeCapacity	Available volume capacity	-
	totalPoolCapacity	Total pool capacity	-
	numOfLdevs	Number of LDEVs	-

Table 251 SecondaryVolumeSettings

Data nesting information		Description	Range
value <sup>1</sup>			
	volumeUsage <sup>2</sup>	Volume Usage	-
	ldevIdStartsFrom	LDEV ID Starts from	0-FFFFFF
	volumeCapacityInMiB	Volume Capacity	-
	blockCapacity	Volume Capacity	-
	volumeLabel	Volume Label	A maximum of 32 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,!,#,\$,%,&',(,),+,-,;,=,@,[,],^,_,` , { }, ~, /, \
	lunStartsFrom	LUN Starts From	0-07FF
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p> <p>2. Select from the volume usage specified in Volume Settings.</p>			

Table 252 SecondaryVolumeSettingsForExistingPVol

Data nesting information		Description	Range
value <sup>1</sup>			
	PvolLdevId	Primary volume LDEV ID	
	ldevIdStartsFrom	LDEV ID starts from	0-FFFFFF
	volumeLabel	Volume label	A maximum of 32 characters can be entered. The string must consist of the following characters A-Z,a-z,0-9,!,#,\$,%,&',(,),+,-,;,=,@,[,],^,_,` , { }, ~, /, \

Data nesting information		Description	Range
	lunStartsFrom	LUN starts from	0-07FF
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 253 SecondaryVolumeFilter**

Data nesting information		Description	Range
value <sup>1</sup>			
	field	Field	"LDEV ID (Dec)", "LDEV ID (Hex)", "Label", "Pool ID", "Port ID", "Host Group Name"
	operator	Operator	When you specify "LDEV ID (Dec)" or "LDEV ID (Hex)" or "Pool ID", the following operators can be specified: "=", "<", ">", "<=", ">=", "!=". When you specify "Label" or "Port ID" or "Host Group Name", the following operators can be specified: "=", "!", "startsWith", "endsWith".
	value	Value	-
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 254 SecondaryVolumes**

Data nesting information		Description	Range
value <sup>1</sup>			
	PvolLdevId	Primary Volume LDEV ID	-
	volumes	Volumes	-
	ldevId	LDEV ID	-
	virtualLdevId	Virtual LDEV ID	-
	label	Label	-
	resourceGroupId	Resource group ID	-
	poolId	Pool ID	-
	byteFormatCapacity	Capacity	-



Data nesting information			Description	Range
		blockCapacity	Block capacity	-
		lun	LUN ID	-
		copyPairAttributes	Copy pair attributes	
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>				

**Table 255 SecondaryResourceCriteria**

Data nesting information			Description	Range
value <sup>1</sup>				
	volumeUsage		Volume usage	-
	storagePortCriteria		Storage port criteria	-
		expressions <sup>1</sup>	Condition	-
		name	Attribute	"Name"
		op	Operator type	"Equals", "Not Equals", "Starts With", "Ends With"
		value	Value	-
		join	Join condition of the expressions	"All", "Any"
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>				

**Table 256 SecondaryResourceCriteriaForExistingPVol**

Data nesting information			Description	Range
value <sup>1</sup>				
	PvolLdevId		Primary volume LDEV ID	-
	storagePortCriteria		Storage port criteria	-
		expressions <sup>1</sup>	Condition	-
		name	Attribute	"Name"

Data nesting information				Description	Range
			op	Operator type	"Equals", "Not Equals", "Starts With", "Ends With"
			value	Value	-
		join		Join condition of the expressions	"All", "Any"
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>					

**Table 257 SecondaryHostMode**

Data nesting information		Description	Range
value			
	hostMode <sup>1</sup>	Host Mode	-
	hostModeOptions <sup>1</sup>	Host Mode Options	-
<p>1. See the Provisioning Guide for your storage system for details about the host mode and host mode options.</p>			

**Table 258 SecondaryHostSettingsForSingleHost**

Data nesting information			Description	Range
value				
	hostName		Host name	A maximum of 64 characters can be entered.
	wwnSettings <sup>1, 2</sup>			-
		wwn	WWN	16 characters in hexadecimal.

Data nesting information			Description	Range
		wwnNickname	WWN nickname	A maximum of 64 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,:,@,_ The string cannot start with a hyphen (-).
		enableALUA	Enable Asymmetric Logical Unit Access (ALUA)	true or false
		enableHMONonPreferred	Enable HMO non preferred	true or false
	iScsiSettings <sup>1, 3</sup>		iSCSI settings	-
		iScsiName	iSCSI name	Specify in iqn format or eui format. -iqn format: Specify 5-223 characters by using the following characters: a-z,0-9,.,-,: - eui format: Specify 20 characters in hexadecimal.
		iScsiNickname	iSCSI nickname	A maximum of 32 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,:,@,_ The string cannot start with a hyphen (-).
<ol style="list-style-type: none"> <li>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</li> <li>2. When "PortType" is "Fibre", wwnSettings can be specified.</li> <li>3. When "PortType" is "iSCSI", iScsiSettings can be specified.</li> </ol>				

Table 259 SecondaryHostSettingsForMultiHost

Data nesting information			Description	Range
value				
	hostName		Host name	A maximum of 64 characters can be entered.
	wwnSettings <sup>1, 2</sup>			-
		wwn	WWN	16 characters in hexadecimal.
		wwnNickname	WWN nickname	A maximum of 64 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,:,@,_ The string cannot start with a hyphen (-).
		enableALUA	Enable Asymmetric Logical Unit Access (ALUA)	true or false
		enableHMONonPreferred	Enable HMO non preferred	true or false
	iScsiSettings <sup>1, 3</sup>		iSCSI settings	-
		iScsiName	iSCSI name	Specify in iqn format or eui format. -iqn format: Specify 5-223 characters by using the following characters: a-z,0-9,.,-,: - eui format: Specify 20 characters in hexadecimal.
		iScsiNickname	iSCSI nickname	A maximum of 32 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,:,@,_ The string cannot start with a hyphen (-).

Data nesting information	Description	Range
<ol style="list-style-type: none"> <li>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</li> <li>2. When "PortType" is "Fibre", wwnSettings can be specified.</li> <li>3. When "PortType" is "iSCSI", iScsiSettings can be specified.</li> </ol>		

**Table 260 ExistingCopyGroup**

Data nesting information	Description	Range
value		
copyGroupName	Copy group name	-
muNumber	MU number	-
localDeviceGroupName	Local device group name	-
remoteDeviceGroupName	Remote device group name	-

**Table 261 QuorumDiskId**

Data nesting information	Description	Range
value		
quorumDiskId	Quorum disk ID	-
serialNumber	Serial number	-
storageType	Storage type	-
primaryStatus	Primary status	-
secondaryStatus	Secondary status	-

**Script specifications**

**Table 262 NamingScriptZone/NamingScriptHostZoneAlias/  
NamingScriptStorageZoneAlias**

Specifications of the script	Description
script	Function that is written in the syntax of ECMAScript 5. The following conditions of arguments and return must be satisfied.

Specifications of the script	Description
arguments	<p>arguments[0]: The object with the following properties is passed as an argument:</p> <ul style="list-style-type: none"> <li>▪ hostname: Host name</li> <li>▪ hostPortWorldWideName: WWN of HBA. Separator notation is based on BNA.</li> <li>▪ storagePortWorldWideName: WWN of CHA. Separator notation is based on BNA.</li> <li>▪ storageSystemFamily: Display model name of the physical storage system</li> <li>▪ storageSystemName: Name of the physical storage system on Configuration Manager</li> <li>▪ storageSystemSerialNumber: Serial number of physical storage system</li> <li>▪ storagePortName: Display port name of the storage system</li> <li>▪ virtualStorageArrayFamily: Display model name of virtual storage (if non-virtual, "-")</li> <li>▪ virtualStorageSystemName: Name of virtual storage on Configuration Manager (if non-virtual, "-")</li> <li>▪ virtualSerialNumber: Serial number of virtual storage (if non-virtual, "-")</li> <li>▪ serviceProperties: List of the service properties passed to the plug-in</li> </ul>
return	<p>Script must return a string that satisfies the following conditions:</p> <ol style="list-style-type: none"> <li>1. Available characters: Only alphanumeric characters and "_"</li> <li>2. The first character is alphabetic</li> <li>3. Zone is up to 60 characters, Zone Alias is up to 64 characters</li> <li>4. About Zone, the string starting from "LSAN_", "TI_", "QOSHn+_ ", "QOSMn+_ ", "QOSLn_" is not allowed (case ignored. "n" is number.)</li> </ol>

## Allocate Volumes with Remote Replication (global-active device) (submit)

KeyName	Type	Description	Range	Default Value
ConfigurationManagerConnection	file	Specify the Ops Center API Configuration Manager connection for P-Vols.	See the following File type property list	-
StorageSystem	file	Specify the storage system for P-Vols.	See the following File type property list	-
ExistingOrCreateNewVolume	string	Specify whether to use existing volumes or create new ones.	"New Volumes" or "Existing Volumes"	New Volumes
ResourceGroupSelection	string	Specify whether to select resource group at volume allocation. If you select 'Meta resource', then the meta resource group will be selected.	"Meta resource" or "Manual"	Manual
ResourceGroup	file	Specify the Resource Group for P-Vols.	See the following File type property list	-
PoolSelection	string	Specify whether to select pool at volume allocation. If you select 'Automatic', then a pool will be selected automatically.	"Automatic" or "Manual"	Automatic
Pool	file	Specify the pool for P-Vols.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
CapacityFormat	string	Specify the volume capacity format as Byte or Block.	"Byte" or "Block"	Byte



KeyName	Type	Description	Range	Default Value
VolumeSettings	file	Specify the parameters required to create new volumes for P-Vols.	See the following File type property list	{{"volumeUsage": "OS", "numberOfVolumes": 1, "volumeCapacityInMiB": 153600, "blockCapacity": "314572800", "volumeLabel": "", "diskType": [], "idevSetting": {"idevIdStartsFrom": 0, "virtualdevIdStartsFrom": 0}, "lunSetting": {"lunStartsFrom": 0}}, {"volumeUsage": "App", "numberOfVolumes": 1, "volumeCapacityInMiB": 204800, "blockCapacity": "419430400", "volumeLabel": "", "diskType": [], "idevS

KeyName	Type	Description	Range	Default Value
				etting": {"devIdS tartsFro m":0,"virt ualLdevl dStartsFr om":0},"l unSettin g": {"lunStart sFrom":0 }}, {"volume Usage": "Data","n umberOf Volumes ":1,"volu meCapa cityInMiB ":460800 ,"blockC apacity": "943718 400","vol umeLab el":"","dis kType": [],"devS etting": {"devIdS tartsFro m":0,"virt ualLdevl dStartsFr om":0},"l unSettin g": {"lunStart sFrom":0 } }}]

KeyName	Type	Description	Range	Default Value
VolumeFilter	file	Specify conditions for filtering the candidate volumes. Not all candidates are displayed when there are many candidate volumes. Specify the conditions to narrow down the volume list.	See the following File type property list	-
VolumeFilterJoinType	string	Specify the source volume filter join type.	"and" or "or"	and
RowsPage	integer	Specify display row per page in the volumes	100 or 500 or 1000 (in dex)	1000
CurrentPage	integer	Specify number of pages to display in the volumes	1 - Integer maximum value	1
Volumes	file	Specify the volume to be used as the primary volume.	See the following File type property list	-
CapacitySavingFunction	String	Specify the Capacity Saving Function for target volumes.  Refer to your storage system product documentation for the optimal setting.	"None", "Compression", "Deduplication and Compression"	None
CapacitySavingMode	String	Specify the Capacity Saving Mode for target volumes.  Refer to your storage system product documentation for the optimal setting.	"Inline mode", "Post-process mode"	Post-process mode

KeyName	Type	Description	Range	Default Value
ResourceCriteria	file	Specify the resource criteria.	See the following File type property list	-
PortType	string	Specify the port type as Fibre or iSCSI.	"Fibre" or "iSCSI"	"Fibre"
HostMode	file	Specify the parameters for creating a new host group.	See the following File type property list	{"hostMode": "WIN_EX", "hostModeOption": []}
NumberOfHosts	string	Select the number of hosts to allocate volume.	"Single" or "Multiple"	"Single"
MultipleHostsPerStoragePort <sup>1</sup>	boolean	Select to share storage ports with multiple hosts.	true or false	false
MultipleHostsPerHostGroup <sup>2</sup>	boolean	Select to share host groups with multiple hosts.	true or false	false
HostSettingsForSingleHost <sup>3</sup>	file	Specify information about the hosts where the volumes will be allocated.	See the following File type property list	{"hostName": "", "winSettings": [], "iScsiSettings": []}
HostSettingsForMultiHost <sup>1</sup>	file	Specify information about the hosts where the volumes will be allocated.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
PrimaryZoneConfigurationNameToUpdate	string	To add a zone to a Zone Configuration other than the active configuration, specify the name of the Zone Configuration in which to add the zone.	-	-
PrimaryNamingScriptZone	file	Specify the naming convention script that determines the Zone name for the path.	-	-
PrimaryNamingScriptHostZoneAlias	file	Specify the naming convention script that determines the Zone Alias name for the host port.	-	-
PrimaryNamingScriptStorageZoneAlias	file	Specify the zone information.	-	-
SecondaryConfigurationManagerConnection	file	Specify the Ops Center API Configuration Manager connection for S-Vols.	See the following File type property list	-
SecondaryStorageSystem	file	Specify the Storage System for S-Vols.	See the following File type property list	-
SecondaryResourceGroupSelection	string	Specify whether to select resource group at volume allocation. If you select 'Meta resource', then the meta resource group will be selected.	"Meta resource" or "Manual"	"Manual"

KeyName	Type	Description	Range	Default Value
SecondaryResourceGroup	file	Specify the Resource Group for S-Vols.	See the following File type property list	-
SecondaryPoolSelection	string	Specify whether to select pool at volume allocation. If you select 'Automatic', then a pool will be selected automatically.	"Automatic" or "Manual"	"Automatic"
SecondaryPool	file	Specify the pool for S-Vols.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
SecondaryVolumeSettings	file	Specify the parameters required to create new volumes for S-Vols.	See the following File type property list	<pre>[{"volumeUsage": "OS", "volumeLabel": "", "diskType": [], "devSetting": {"devIdStartsFrom": 0, "virtualDevIdStartsFrom": 0}, "lunSetting": {"lunStartsFrom": 0}}, {"volumeUsage": "App", "volumeLabel": "", "diskType": [], "devSetting": {"devIdStartsFrom": 0, "virtualDevIdStartsFrom": 0}, "lunSetting": {"lunStartsFrom": 0}}, {"volumeUsage": "Data", "volumeLabel": "", "diskType": [], "devSetting":</pre>

KeyName	Type	Description	Range	Default Value
				{ "iddevIdS tartsFro m":0,"virt ualLdevl dStartsFr om":0},"l unSettin g": { "lunStart sFrom":0 }}
SecondaryVolumeSettingsForExistingPVol	file	Specify the parameters required to create new volumes.	See the following File type property list	-
SecondaryVolumeFilter	file	Specify conditions for filtering the candidate volumes. Not all candidates are displayed when there are many candidate volumes. Specify the conditions to narrow down the volume list.	See the following File type property list	-
SecondaryVolumeFilterJoinType	string	Specify the source volume filter join type.	"and" or "or"	"and"
SecondaryRowsPage	integer	Specify display row per page in the volumes	100 or 500 or 1000 (in dex)	1000
SecondaryCurrentPage	integer	Specify number of pages to display in the volumes	1 - Integer maximum value	1
SecondaryVolumes	file	Specify the volume to be used as the Secondary Volume.	See the following File type property list	-



KeyName	Type	Description	Range	Default Value
SecondaryCapacitySavingFunction	String	Specify the Capacity Saving Function for target volumes.  Refer to your storage system product documentation for the optimal setting.	"None", "Compression", "Deduplication and Compression"	None
SecondaryCapacitySavingMode	String	Specify the Capacity Saving Mode for target volumes.  Refer to your storage system product documentation for the optimal setting.	"Inline mode", "Post-process mode"	Post-process mode
SecondaryResourceCriteria	file	Specify the resource criteria.	See the following File type property list	-
SecondaryResourceCriteriaForExistingPVol	file	Specify the resource criteria.	See the following File type property list	-
SecondaryPortType	string	Specify the port type as Fibre or iSCSI.	"Fibre" or "iSCSI"	"Fibre"
SecondaryHostMode	file	Specify the parameters for creating a new host group.	See the following File type property list	{"hostMode": "WIN_EX", "hostModeOption": []}
SecondaryNumberOfHosts	string	Select the number of hosts to allocate volume.	"Single" or "Multiple"	"Single"
SecondaryMultipleHostsPerStoragePort <sup>1</sup>	boolean	Select to share storage ports with multiple hosts.	true or false	false

KeyName	Type	Description	Range	Default Value
SecondaryMultipleHostsPerHostGroup <sup>2</sup>	boolean	Select to share host groups with multiple hosts.	true or false	false
SecondaryHostSettingsForSingleHost <sup>3</sup>	file	Specify information about the hosts where the volumes will be allocated.	See the following File type property list	{"hostName":"","wwnSettings": [],"iScsiSettings": []}
SecondaryHostSettingsForMultiHost <sup>1</sup>	file	Specify information about the hosts where the volumes will be allocated.	See the following File type property list	-
SecondaryZoneConfigurationNameToUpdate	string	To add a zone to a Zone Configuration other than the active configuration, specify the name of the Zone Configuration in which to add the zone.	-	-
SecondaryNamingScriptZone	file	Specify the naming convention script that determines the Zone name for the path.	See the following script specifications.	See the following script example.
SecondaryNamingScriptHostZoneAlias	file	Specify the naming convention script that determines the Zone Alias name for the host port.	See the following script specifications.	See the following script example.
SecondaryNamingScriptStorageZoneAlias	file	Specify the zone information.	See the following script specifications.	See the following script example.
ExistingOrCreateNewCopyGroup	string	Specify whether to use an existing copy group or create a new one.	"New Copy Group" or "Existing Copy Group"	New Copy Group

KeyName	Type	Description	Range	Default Value
CopyGroupName <sup>4</sup>	string	Specify the name of the new copy group to create.	The length should be less than 29. The string should consist of the following character set: A-Z,a-z,0-9,-,.,:,@,_ A string beginning with '-' is not allowed.	-
ExistingCopyGroup <sup>5</sup>	file	Specify the existing copy group.	See the following File type property list	-
CopyPace <sup>6</sup>	integer	Specify the copy speed. The larger value you specify the faster the copy speed will be.	1 to 15 (in dex)	3
UseTheNocopyOption	boolean	Specify whether to perform initial copy when creating a pair.	true or false	true
AssignCTG <sup>7</sup>	boolean	Specify whether to register the new pairs in a consistency group.	true or false	true
CTGIDSelection <sup>8</sup>	string	Specify whether to select the consistency group ID automatically or manually.	"Auto Selection" or "Manual Selection"	Auto Selection
CTGID <sup>9</sup>	string	Specify the consistency group ID by using a hexadecimal (base 16) number.	The range of selectable CTG ID is changed due to specified primary and secondary	-

KeyName	Type	Description	Range	Default Value
			storage systems as follows: <ul style="list-style-type: none"> <li>▪ VSP G200 0 to F (in hex)</li> <li>▪ VSP G400, G600, VSP F400, F600, VSP N400, N600 0 to 3F (in hex)</li> <li>▪ VSP One B28, VSP One B26, VSP One B24, VSP E1090, VSP E1090, VSP E1090H, VSP E590, VSP E790, VSP E590H, VSP E790H, VSP G130, VSP G350, VSP G370, VSP G700, VSP F350, VSP F370, VSP F700, VSP G800, VSP F800, VSP N800 0 to 7F (in hex)</li> </ul>	

KeyName	Type	Description	Range	Default Value
			<ul style="list-style-type: none"> <li>▪ VSP E990, VSP G900, VSP F900, VSP G1000, VSP P G1500, VSP P F1500 0 to FF (in hex)</li> <li>▪ VSP 5100, 5500, 5100H, 5500H, VSP 5200, 5600, 5200H, 5600H 0 to 3FF (in hex)</li> </ul> <p>When storage models are different between the primary and the secondary, the narrower range takes precedence.</p>	
MUNumberSelection <sup>10</sup>	string	Specify whether to select the MU (mirror unit) number automatically or manually.	"Auto Selection" or "Manual Selection"	Auto Selection
MUNumber <sup>11</sup>	string	Specify the MU (mirror unit) number by using a number from 0 to 3.	0 to 3	0

KeyName	Type	Description	Range	Default Value
PathGroupIDSelection	string	Specify whether to select the path group ID automatically or manually. If you specify "Auto Selection", 0 is automatically chosen.	"Auto Selection" or "Manual Selection"	Auto Selection
PathGroupID <sup>12</sup>	string	Specify the path group ID by using a hexadecimal (base 16) number in the range from 00 to FF.	00 to FF (in hex)	00
ReductionForceCopy	boolean	Specify whether to forcibly create a pair for the volume for which the capacity saving function (deduplication and compression) is enabled.	true or false	false
QuorumDiskId	file	Specify the Quorum disk id.	See the following File type property list	-
<ol style="list-style-type: none"> <li>1. When "NumberOfHosts" is "Multiple"</li> <li>2. When "MultipleHostsPerStoragePort" is true</li> <li>3. When "NumberOfHosts" is "Single"</li> <li>4. When "ExistingOrCreateNewCopyGroup" is "New Copy Group", CopyGroupName can be specified.</li> <li>5. When "ExistingOrCreateNewCopyGroup" is "Existing Copy Group", ExistingCopyGroup can be specified.</li> <li>6. When "ReplicationType" is "Synchronous Remote Clone", CopyPace can be specified.</li> <li>7. When "ReplicationType" is "Synchronous Remote Clone" or "Global-Active Device" and "ExistingOrCreateNewCopyGroup" is "New Copy Group", AssignCTG can be specified.</li> <li>8. When "ReplicationType" is "Synchronous Remote Clone" or "Global-Active Device" and "ExistingOrCreateNewCopyGroup" is "New Copy Group" and "AssignCTG" is true, or when "ReplicationType" is "Asynchronous Remote Clone" and "ExistingOrCreateNewCopyGroup" is "New Copy Group", CTGIDSelection can be specified.</li> </ol>				

KeyName	Type	Description	Range	Default Value
9.		When "CTGIDSelection" is "Manual Selection", CTGID can be specified.		
10.		When "ReplicationType" is "Asynchronous Remote Clone" and "ExistingOrCreateNewCopyGroup" is "New Copy Group", MUNumberSelection can be specified.		
11.		When "MUNumberSelection" is "Manual Selection", MUNumber can be specified.		
12.		When "PathGroupIDSelection" is "Manual Selection", PathGroupID can be specified.		

**File type property list**

**Table 263 ConfigurationManagerConnection**

Data nesting information		Description	Range
value			
	Product name to register to the Web Service Connection.	Category	ConfigurationManager
	name	Name	-
	ipAddress	IP Address/Host Name	-
	port	Port	-
	protocol	Protocol	-
	userID	User ID	-
	status	Status	-
	connectedTime	Connected Time	-

**Table 264 StorageSystem**

Data nesting information		Description	Range
value			
	storageDeviceId	Storage Device ID	-
	model	Model	-
	serialNumber	Serial Number	-
	svplp	SVP IP Address	-

Table 265 ResourceGroup

Data nesting information		Description	Range
value			
	resourceGroupId	Resource group ID	-
	resourceGroupName	Resource group name	-
	virtualStorageID	Virtual storage system ID	-

Table 266 Pool

Data nesting information		Description	Range
value			
	poolId	Pool ID	-
	poolName	Pool name	-
	poolType	Pool type	-
	usedCapacityRate	Used capacity rate	-
	availableVolumeCapacity	Available volume capacity	-
	totalPoolCapacity	Total pool capacity	-
	numOfLdevs	Number of LDEVs	-

Table 267 VolumeSettings

Data nesting information		Description	Range
value <sup>1</sup>			
	volumeUsage	Volume Usage	A maximum of 64 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,~,!,@,#,\$,%,&,(,)_,+,-,=, {,},[,],',,`
	numberOfVolumes	Number of Volumes	1-500
	ldevIdStartsFrom	LDEV ID Starts from	0-FFFFFF
	volumeCapacityInMiB	Volume Capacity	-



Data nesting information		Description	Range
	blockCapacity	Volume Capacity	-
	volumeLabel	Volume Label	A maximum of 32 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,!,#,\$,%,&',(,),+,-,:;=@, [, ], ^, _ , ` , { , } , ~ , / , \
	lunStartsFrom	LUN Starts From	0-07FF
	virtualLdevIdStartsFrom	Virtual LDEV ID Starts From	0-FEFF
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 268 VolumeFilter**

Data nesting information		Description	Range
value <sup>1</sup>			
	field	Field	"LDEV ID (Dec)", "LDEV ID (Hex)", "Label", "Pool ID", "Port ID", "Host Group Name"
	operator	Operator	When you specify "LDEV ID (Dec)" or "LDEV ID (Hex)" or "Pool ID", the following operators can be specified: "=", "<", ">", "<=", ">=", "!=".  When you specify "Label" or "Port ID" or "Host Group Name", the following operators can be specified: "=", "!", "startsWith", "endsWith".
	value	Value	-
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 269 Volumes**

Data nesting information		Description	Range
value <sup>1</sup>			
	ldevId	LDEV ID	-
	virtualLdevId	Virtual LDEV ID	-

Data nesting information		Description	Range
	label	Label	-
	resourceGroupId	Resource group ID	-
	poolId	Pool ID	-
	byteFormatCapacity	Capacity	-
	blockCapacity	Block capacity	-
	lun	LUN ID	-
	copyPairAttributes	Copy pair attributes	
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 270 ResourceCriteria**

Data nesting information				Description	Range
value <sup>1</sup>					
	volumeUsage			Volume usage	-
	storagePortCriteria			Storage port criteria	-
		expressions <sup>2</sup>		Condition	-
			name	Attribute	"Name"
			op	Operator type	"Equals", "Not Equals", "Starts With", "Ends With"
			value	Value	-
		join		Join condition of the expressions	"All", "Any"
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p> <p>2. Select from the volume usage specified in "Volume Settings".</p>					

**Table 271 HostMode**

Data nesting information		Description	Range
value			
	hostMode <sup>1</sup>	Host Mode	-
	hostModeOptions <sup>1</sup>	Host Mode Options	-
<p>1. See the Provisioning Guide for your storage system for details about the host mode and host mode options.</p>			

**Table 272 HostSettingsForSingleHost**

Data nesting information		Description	Range
value			
	hostName	Host name	A maximum of 64 characters can be entered.
	wwnSettings <sup>1, 2</sup>		-
	wwn	WWN	16 characters in hexadecimal.
	wwnNickname	WWN nickname	A maximum of 64 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,:,@,_ The string cannot start with a hyphen (-).
	enableALUA	Enable Asymmetric Logical Unit Access (ALUA)	true or false
	enableHMONonPreferred	Enable HMO non preferred	true or false
	iScsiSettings <sup>1, 3</sup>	iSCSI settings	-

Data nesting information			Description	Range
		iScsiName	iSCSI name	Specify in iqn format or eui format. -iqn format: Specify 5-223 characters by using the following characters: a-z,0-9,-,.,-; -eui format: Specify 20 characters in hexadecimal.
		iScsiNickname	iSCSI nickname	A maximum of 32 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,@,_  The string cannot start with a hyphen (-).
<ol style="list-style-type: none"> <li>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</li> <li>2. When "PortType" is "Fibre", wwnSettings can be specified.</li> <li>3. When "PortType" is "iSCSI", iScsiSettings can be specified.</li> </ol>				

**Table 273 HostSettingsForMultiHost**

Data nesting information			Description	Range
value				
	hostName		Host name	A maximum of 64 characters can be entered.
	wwnSettings <sup>1, 2</sup>			-
		wwn	WWN	16 characters in hexadecimal.
		wwnNickname	WWN nickname	A maximum of 64 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,@,_  The string cannot start with a hyphen (-).

Data nesting information		Description	Range
	enableALUA	Enable Asymmetric Logical Unit Access (ALUA)	true or false
	enableHMONonPreferred	Enable HMO non preferred	true or false
	iScsiSettings <sup>1, 3</sup>	iSCSI settings	-
	iScsiName	iSCSI name	Specify in iqn format or eui format. -iqn format: Specify 5-223 characters by using the following characters: a-z,0-9,.,-,: - eui format: Specify 20 characters in hexadecimal.
	iScsiNickname	iSCSI nickname	A maximum of 32 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,@,_  The string cannot start with a hyphen (-).
<ol style="list-style-type: none"> <li>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</li> <li>2. When "PortType" is "Fibre", wwnSettings can be specified.</li> <li>3. When "PortType" is "iSCSI", iScsiSettings can be specified.</li> </ol>			

**Table 274 SecondaryConfigurationManagerConnection**

Data nesting information		Description	Range
value			
	Product name to register to the Web Service Connection.	Category	ConfigurationManager
	name	Name	-
	ipAddress	IP Address/Host Name	-
	port	Port	-

Data nesting information		Description	Range
	protocol	Protocol	-
	userID	User ID	-
	status	Status	-
	connectedTime	Connected Time	-

**Table 275 SecondaryStorageSystem**

Data nesting information		Description	Range
value			
	storageDeviceId	Storage Device ID	-
	model	Model	-
	serialNumber	Serial Number	-
	svplp	SVP IP Address	-

**Table 276 SecondaryResourceGroup**

Data nesting information		Description	Range
value			
	resourceGroupId	Resource group ID	-
	resourceGroupName	Resource group name	-
	virtualStorageID	Virtual storage system ID	-

**Table 277 SecondaryPool**

Data nesting information		Description	Range
value			
	poolId	Pool ID	-
	poolName	Pool name	-
	poolType	Pool type	-
	usedCapacityRate	Used capacity rate	-

Data nesting information		Description	Range
	availableVolumeCapacity	Available volume capacity	-
	totalPoolCapacity	Total pool capacity	-
	numOfLdevs	Number of LDEVs	-

**Table 278 SecondaryVolumeSettings**

Data nesting information		Description	Range
value <sup>1</sup>			
	volumeUsage <sup>2</sup>	Volume Usage	-
	ldevIdStartsFrom	LDEV ID Starts from	0-FFFFFF
	volumeCapacityInMiB	Volume Capacity	-
	blockCapacity	Volume Capacity	-
	volumeLabel	Volume Label	A maximum of 32 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,!,#,\$,%,&',(,),+,-,;,=,@,[,],^,_,' ,{ },~,/, \
	lunStartsFrom	LUN Starts From	0-07FF
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p> <p>2. Select from the volume usage specified in Volume Settings.</p>			

**Table 279 SecondaryVolumeSettingsForExistingPVol**

Data nesting information		Description	Range
value <sup>1</sup>			
	PvolLdevId	Primary volume LDEV ID	
	ldevIdStartsFrom	LDEV ID starts from	0-FFFFFF
	volumeLabel	Volume label	A maximum of 32 characters can be entered. The string must consist of the following characters A-Z,a-z,0-9,!,#,\$,%,&',(,),+,-,;,=,@,[,],^,_,' ,{ },~,/, \

Data nesting information		Description	Range
	lunStartsFrom	LUN starts from	0-07FF
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 280 SecondaryVolumeFilter**

Data nesting information		Description	Range
value <sup>1</sup>			
	field	Field	"LDEV ID (Dec)", "LDEV ID (Hex)", "Label", "Pool ID", "Port ID", "Host Group Name"
	operator	Operator	When you specify "LDEV ID (Dec)" or "LDEV ID (Hex)" or "Pool ID", the following operators can be specified: "=", "<", ">", "<=", ">=", "!=". When you specify "Label" or "Port ID" or "Host Group Name", the following operators can be specified: "=", "!", "startsWith", "endsWith".
	value	Value	-
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 281 SecondaryVolumes**

Data nesting information		Description	Range
value <sup>1</sup>			
	PvolLdevId	Primary Volume LDEV ID	-
	volumes	Volumes	-
	ldevId	LDEV ID	-
	virtualLdevId	Virtual LDEV ID	-
	label	Label	-
	resourceGroupId	Resource group ID	-
	poolId	Pool ID	-
	byteFormatCapacity	Capacity	-



Data nesting information			Description	Range
		blockCapacity	Block capacity	-
		lun	LUN ID	-
		copyPairAttributes	Copy pair attributes	
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>				

**Table 282 SecondaryResourceCriteria**

Data nesting information			Description	Range
value <sup>1</sup>				
	volumeUsage		Volume usage	-
	storagePortCriteria		Storage port criteria	-
		expressions <sup>1</sup>	Condition	-
		name	Attribute	"Name"
		op	Operator type	"Equals", "Not Equals", "Starts With", "Ends With"
		value	Value	-
		join	Join condition of the expressions	"All", "Any"
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>				

**Table 283 SecondaryResourceCriteriaForExistingPVol**

Data nesting information			Description	Range
value <sup>1</sup>				
	PvolLdevId		Primary volume LDEV ID	-
	storagePortCriteria		Storage port criteria	-
		expressions <sup>1</sup>	Condition	-
		name	Attribute	"Name"

Data nesting information				Description	Range
			op	Operator type	"Equals", "Not Equals", "Starts With", "Ends With"
			value	Value	-
		join		Join condition of the expressions	"All", "Any"

1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.

**Table 284 SecondaryHostMode**

Data nesting information		Description	Range
value			
	hostMode <sup>1</sup>	Host Mode	-
	hostModeOptions <sup>1</sup>	Host Mode Options	-

1. See the Provisioning Guide for your storage system for details about the host mode and host mode options.

**Table 285 SecondaryHostSettingsForSingleHost**

Data nesting information			Description	Range
value				
	hostName		Host name	A maximum of 64 characters can be entered.
	wwnSettings <sup>1, 2</sup>			-
		wwn	WWN	16 characters in hexadecimal.

Data nesting information			Description	Range
		wwnNickname	WWN nickname	A maximum of 64 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,:,@,_ The string cannot start with a hyphen (-).
		enableALUA	Enable Asymmetric Logical Unit Access (ALUA)	true or false
		enableHMONonPreferred	Enable HMO non preferred	true or false
	iScsiSettings <sup>1, 3</sup>		iSCSI settings	-
		iScsiName	iSCSI name	Specify in iqn format or eui format. -iqn format: Specify 5-223 characters by using the following characters: a-z,0-9,.,-,: - eui format: Specify 20 characters in hexadecimal.
		iScsiNickname	iSCSI nickname	A maximum of 32 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,:,@,_ The string cannot start with a hyphen (-).
<ol style="list-style-type: none"> <li>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</li> <li>2. When "PortType" is "Fibre", wwnSettings can be specified.</li> <li>3. When "PortType" is "iSCSI", iScsiSettings can be specified.</li> </ol>				

**Table 286 SecondaryHostSettingsForMultiHost**

Data nesting information			Description	Range
value				
	hostName		Host name	A maximum of 64 characters can be entered.
	wwnSettings <sup>1, 2</sup>			-
		wwn	WWN	16 characters in hexadecimal.
		wwnNickname	WWN nickname	A maximum of 64 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,:,@,_ The string cannot start with a hyphen (-).
		enableALUA	Enable Asymmetric Logical Unit Access (ALUA)	true or false
		enableHMONonPreferred	Enable HMO non preferred	true or false
	iScsiSettings <sup>1, 3</sup>		iSCSI settings	-
		iScsiName	iSCSI name	Specify in iqn format or eui format. -iqn format: Specify 5-223 characters by using the following characters: a-z,0-9,.,-,: - eui format: Specify 20 characters in hexadecimal.
		iScsiNickname	iSCSI nickname	A maximum of 32 characters can be entered. The string must consist of only the following characters: A-Z,a-z,0-9,-,.,:,@,_ The string cannot start with a hyphen (-).

Data nesting information	Description	Range
<ol style="list-style-type: none"> <li>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</li> <li>2. When "PortType" is "Fibre", wwnSettings can be specified.</li> <li>3. When "PortType" is "iSCSI", iScsiSettings can be specified.</li> </ol>		

**Table 287 ExistingCopyGroup**

Data nesting information	Description	Range
value		
copyGroupName	Copy group name	-
muNumber	MU number	-
localDeviceGroupName	Local device group name	-
remoteDeviceGroupName	Remote device group name	-

**Table 288 QuorumDiskId**

Data nesting information	Description	Range
value		
quorumDiskId	Quorum disk ID	-
serialNumber	Serial number	-
storageType	Storage type	-
primaryStatus	Primary status	-
secondaryStatus	Secondary status	-

**Script specifications**

**Table 289 NamingScriptZone/NamingScriptHostZoneAlias/  
NamingScriptStorageZoneAlias**

Specifications of the script	Description
script	Function that is written in the syntax of ECMAScript 5. The following conditions of arguments and return must be satisfied.

Specifications of the script	Description
arguments	<p>arguments[0]: The object with the following properties is passed as an argument:</p> <ul style="list-style-type: none"> <li>▪ hostname: Host name</li> <li>▪ hostPortWorldWideName: WWN of HBA. Separator notation is based on BNA.</li> <li>▪ storagePortWorldWideName: WWN of CHA. Separator notation is based on BNA.</li> <li>▪ storageSystemFamily: Display model name of the physical storage system</li> <li>▪ storageSystemName: Name of the physical storage system on Configuration Manager</li> <li>▪ storageSystemSerialNumber: Serial number of physical storage system</li> <li>▪ storagePortName: Display port name of the storage system</li> <li>▪ virtualStorageArrayFamily: Display model name of virtual storage (if non-virtual, "-")</li> <li>▪ virtualStorageSystemName: Name of virtual storage on Configuration Manager (if non-virtual, "-")</li> <li>▪ virtualSerialNumber: Serial number of virtual storage (if non-virtual, "-")</li> <li>▪ serviceProperties: List of the service properties passed to the plug-in</li> </ul>
return	<p>Script must return a string that satisfies the following conditions:</p> <ol style="list-style-type: none"> <li>1. Available characters: Only alphanumeric characters and "_"</li> <li>2. The first character is alphabetic</li> <li>3. Zone is up to 60 characters, Zone Alias is up to 64 characters</li> <li>4. About Zone, the string starting from "LSAN_", "TI_", "QOSHn+_ ", "QOSMn+_ ", "QOSLn_" is not allowed (case ignored. "n" is number.)</li> </ol>

## Allocate Volumes with Remote Replication (global-active device) (task details)

KeyName	Type	Description	Range
/SmartProvisioningForPVol/ LUNPathConfigurationInformation	file	Stores the allocated LUN path information from the volume allocation results.	See the following File type property list
/SmartProvisioningForSVol/ LUNPathConfigurationInformation	file	Stores the allocated LUN path information from the volume allocation results.	See the following File type property list
CopyPairConfigurationInformation	file	Stores the copy pair information from the replication results.	See the following File type property list
/ExecuteZoningConfigurationPvol/ ExecutePvolZoningConfiguration/ ConfigureWWNZoningPvol/ provisioning.taskResult.createdZoneConfigurations	file	Stores the new zone configuration.	See the following File type property list
/ExecuteZoningConfigurationPvol/ ExecutePvolZoningConfiguration/ ConfigureWWNZoningPvol/ provisioning.taskResult.createdZones	file	Stores the new zone information.	See the following File type property list
/ExecuteZoningConfigurationPvol/ ExecutePvolZoningConfiguration/ ConfigureWWNZoningPvol/ provisioning.taskResult.createdZoneAliases	file	Stores the new zone aliases.	See the following File type property list

KeyName	Type	Description	Range
/ExecuteZoningConfigurationPvol/ ExecutePvolZoningConfiguration/ ConfigureWWNZoningPvol/ provisioning.taskResult.updatedZoneConfigurations	file	Stores the updated zone configuration.	See the following File type property list
/ExecuteZoningConfigurationPvol/ ExecutePvolZoningConfiguration/ ConfigureWWNZoningPvol/ provisioning.taskResult.updatedZones	file	Stores the updated zone information.	See the following File type property list
/ExecuteZoningConfigurationPvol/ ExecutePvolZoningConfiguration/ ConfigureWWNZoningPvol/ provisioning.taskResult.updatedZoneAliases	file	Stores the updated zone aliases.	See the following File type property list
/ExecuteZoningConfigurationSvol/ ExecuteSvolZoningConfiguration/ ConfigureWwnZoningSvol/ provisioning.taskResult.createdZoneConfigurations	file	Stores the new zone configuration.	See the following File type property list
/ExecuteZoningConfigurationSvol/ ExecuteSvolZoningConfiguration/ ConfigureWwnZoningSvol/ provisioning.taskResult.createdZones	file	Stores the new zone information.	See the following File type property list
/ExecuteZoningConfigurationSvol/ ExecuteSvolZoningConfiguration/ ConfigureWwnZoningSvol/ provisioning.taskResult.createdZoneAliases	file	Stores the new zone aliases.	See the following File type property list
/ExecuteZoningConfigurationSvol/ ExecuteSvolZoningConfiguration/ ConfigureWwnZoningSvol/ provisioning.taskResult.updatedZoneConfigurations	file	Stores the updated zone configuration.	See the following File type property list
/ExecuteZoningConfigurationSvol/ ExecuteSvolZoningConfiguration/ ConfigureWwnZoningSvol/ provisioning.taskResult.updatedZones	file	Stores the updated zone information.	See the following File type property list
/ExecuteZoningConfigurationSvol/ ExecuteSvolZoningConfiguration/ ConfigureWwnZoningSvol/ provisioning.taskResult.updatedZoneAliases	file	Stores the updated zone aliases.	See the following File type property list



## File type property list

Table 290 /SmartProvisioningForPVol/LUNPathConfigurationInformation

Data nesting information		Description	Range
value <sup>1</sup>			
	storageDeviceId	Storage Device ID	-
	volumeUsage	Volume Usage	-
	hostPort	Host Port	-
	storagePort	Storage Port	-
	lun	LUN	-
	portType	Port Type	-
	capacity	Capacity	-
	provisionedCapacity	Provisioned Capacity	-
	ldevId	LDEV ID	-
	hostGroupNameOrIscsiTarget	Host Group Name/ iSCSI Target	-
	hostGroupNumber	Host Group Number	-
	hostMode	Host Mode	-
	hostModeOptions	Host Mode Options	-
	model	Model	-
	serialNumber	Serial Number	-
	ldevLabel	LDEV Label	-
	virtualStorageMachineResourceGroupName	Resource Group in Virtual Storage System	-
	parityGroup	Parity Group	-
	attributes	Attributes	-
	resourceGroupName	Resource Group Name	-
	virtualLdevId	Virtual LDEV ID	-
	configurationManager	Configuration Manager	-

Data nesting information		Description	Range
	poolId	Pool ID	-
	poolName	Pool Name	-
	asymmetricAccessStatus	ALUA Settings	-
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 291 /SmartProvisioningForSVol/LUNPathConfigurationInformation**

Data nesting information		Description	Range
value <sup>1</sup>			
	storageDeviceId	Storage Device ID	-
	volumeUsage	Volume Usage	-
	hostPort	Host Port	-
	storagePort	Storage Port	-
	lun	LUN	-
	portType	Port Type	-
	capacity	Capacity	-
	provisionedCapacity	Provisioned Capacity	-
	ldevId	LDEV ID	-
	hostGroupNameOrIscsiTarget	Host Group Name/ iSCSI Target	-
	hostGroupNumber	Host Group Number	-
	hostMode	Host Mode	-
	hostModeOptions	Host Mode Options	-
	model	Model	-
	serialNumber	Serial Number	-
	ldevLabel	LDEV Label	-
	virtualStorageMachineResourceGroupName	Resource Group in Virtual Storage System	-

Data nesting information		Description	Range
	parityGroup	Parity Group	-
	attributes	Attributes	-
	resourceGroupName	Resource Group Name	-
	virtualLdevId	Virtual LDEV ID	-
	configurationManager	Configuration Manager	-
	poolId	Pool ID	-
	poolName	Pool Name	-
	asymmetricAccessStatus	ALUA Settings	-
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 292 CopyPairConfigurationManager**

Data nesting information		Description	Range
value <sup>1</sup>			
	copyType	Copy Type	-
	copyGroupName	Copy Group name	-
	volumeUsage	Target host port which primary volume has allocated to.	-
	copyPairName	Target host port which secondary volume has allocated to.	-
	pvolLdevId	Volume Usage name	-
	pvolVirtualLdevId		-
	localStorageSystemModel		-
	localstorageSystemSerialNumber		-
	localResourceGroupName		-
	svolLdevId	Copy Pair Name	-
	svolVirtualLdevId	LDEV ID of P-Vol	-
	remoteStorageSystemModel	LDEV ID of S-Vol	-

Data nesting information		Description	Range
	remoteStorageSystemSerialNumber		-
	remoteResourceGroupName	Storage Array name	-
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 293 /ExecuteZoningConfigurationPvol/ExecutePvolZoningConfiguration/ConfigureWWNZoningPvol/provisioning.taskResult.createdZoneConfigurations / ExecuteZoningConfigurationSvol/ExecuteSvolZoningConfiguration/ConfigureWwnZoningSvol/provisioning.taskResult.createdZoneConfigurations**

Data nesting information		Description	Range
value <sup>1</sup>			
	name	Name	-
	zoneNames	Zone Names	-
	bnaname	BNA Name	-
	fabricName	Fabric Name	-
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 294 /ExecuteZoningConfigurationPvol/ExecutePvolZoningConfiguration/ConfigureWWNZoningPvol/provisioning.taskResult.createdZones / ExecuteZoningConfigurationSvol/ExecuteSvolZoningConfiguration/ConfigureWwnZoningSvol/provisioning.taskResult.createdZones**

Data nesting information		Description	Range
value <sup>1</sup>			
	name	Name	-
	displayName	Type	-
	aliasNames	Alias Names	-
	memberNames	Member Names	-
	bnaname	BNA Name	-
	fabricName	Fabric Name	-

Data nesting information	Description	Range
1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.		

**Table 295 /ExecuteZoningConfigurationPvol/ExecutePvolZoningConfiguration/ConfigureWWNZoningPvol/provisioning.taskResult.createdZoneAliases / ExecuteZoningConfigurationSvol/ExecuteSvolZoningConfiguration/ConfigureWwnZoningSvol/provisioning.taskResult.createdZoneAliases**

Data nesting information	Description	Range
value <sup>1</sup>		
	name	Name
	memberNames	Member Names
	bnaname	BNA Name
	fabricName	Fabric Name
1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.		

**Table 296 /ExecuteZoningConfigurationPvol/ExecutePvolZoningConfiguration/ConfigureWWNZoningPvol/provisioning.taskResult.updatedZoneConfigurations / ExecuteZoningConfigurationSvol/ExecuteSvolZoningConfiguration/ConfigureWwnZoningSvol/provisioning.taskResult.updatedZoneConfigurations**

Data nesting information	Description	Range
value <sup>1</sup>		
	name	Name
	zoneNames	Zone Names
	bnaname	BNA Name
	fabricName	Fabric Name
1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.		

**Table 297 /ExecuteZoningConfigurationPvol/ExecutePvolZoningConfiguration/ConfigureWWNZoningPvol/provisioning.taskResult.updatedZones /**

**ExecuteZoningConfigurationSvol/ExecuteSvolZoningConfiguration/  
ConfigureWwnZoningSvol/provisioning.taskResult.updatedZones**

Data nesting information		Description	Range
value <sup>1</sup>			
	name	Name	-
	type	Type	-
	aliasNames	Alias Names	-
	memberNames	Member Names	-
	bnaname	BNA Name	-
	fabricName	Fabric Name	-
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

**Table 298 /ExecuteZoningConfigurationPvol/ExecutePvolZoningConfiguration/  
ConfigureWWNZoningPvol/provisioning.taskResult.updatedZoneAliases /  
ExecuteZoningConfigurationSvol/ExecuteSvolZoningConfiguration/  
ConfigureWwnZoningSvol/provisioning.taskResult.updatedZoneAliases**

Data nesting information		Description	Range
value <sup>1</sup>			
	name	Name	-
	memberNames	Member Names	-
	bnaname	BNA Name	-
	fabricName	Fabric Name	-
<p>1. Repeatable. When you repeat a repeatable item, you must include all lower layer tags in each repeated item.</p>			

## Allocate volumes with Smart Provisioning service properties

Use the following properties to modify or create values for the Allocate volumes with Smart Provisioning service.

## Allocate Volumes with Smart Provisioning (edit)

KeyName	Type	Description	Range	Default Value
ConfigurationManager Connection	file	Specify the Configuration Manager Connection.	See the following File type property list	-
StorageSelection	string	Specify whether to select storage system at volume allocation. If you specify 'Automatic', then a storage system will be selected automatically.	Automatic, Manual	Automatic
SelectFrom	string	Specify where to select from in the automatic selection. "All Storage Systems" selects from all storage systems registered on Configuration Manager. "Virtual Storage Machine" selects the storage system to provision from the storage systems that comprise the specified virtual storage machine.	All Storage Systems, Virtual Storage Machine	All Storage Systems
VirtualStorageMappingDefinition	file	Specify the Virtual LDEV ID range to be used for provisioning for each physical storage system.	See the following File type property list	[{"virtualModel":"","virtualSerialNumber":"","physicalStorages":[]}]

KeyName	Type	Description	Range	Default Value
VirtualStorageMachine	file	Specify the Virtual Storage Machine. If the "Virtual Storage Machine consists of one Resource Group" column is "No", then the resource group with the minimum ID will be used. If the "Virtual Storage Mapping Definition" column is "None" or "Unnecessary", then revise Virtual Storage Mapping.	See the following File type property list	-
StorageSystem	file	Specify the Storage System.	See the following File type property list	-
ResourceGroupSelection	string	Specify whether to select resource group at volume allocation. If you specify 'Meta resource', then the meta resource group will be selected.	Meta resource, Manual	Meta resource
ResourceGroup	file	Specify the Resource Group.	See the following File type property list	-
PoolSelection	string	Specify whether to select pool at volume allocation. If you specify 'Automatic', then a pool will be selected automatically.	Automatic, Manual	Automatic
Pool	file	Specify the pool.	See the following File type property list	-
CapacityFormat	string	Select the volume capacity format.	Byte, Block	Byte



KeyName	Type	Description	Range	Default Value
VolumeSettings	file	Specify the parameters for creating new volumes.	See the following File type property list	[{"volumeUsage": "OS", "numberOfVolumes": 1, "volumeCapacityInMiB": 153600, "blockCapacity": "314572800", "volumeLabel": "", "diskType": [], "devSetting": {"ldevIdStartsFrom": 0, "virtualLdevIdStartsFrom": 0}, "lunSetting": {"lunStartsFrom": 0}}, {"volumeUsage": "App", "numberOfVolumes": 1, "volumeCapacityInMiB": 204800, "blockCapacity": "419430400", "volumeLabel": "", "diskType": [], "devSetting": {"ldevIdStartsFrom": 0, "virtualLdevIdStartsFrom": 0},

KeyName	Type	Description	Range	Default Value
				"lunSetting": { "lunStartsFrom":0}, "volumeUsage": "Data", "numberOfVolumes":1, "volumeCapacityInMiB":460800, "blockCapacity": "943718400", "volumeLabel": "", "diskType": [], "devSetting": { "devIdStartsFrom":0, "virtualDevIdStartsFrom":0}, "lunSetting": { "lunStartsFrom":0}}}]
CapacitySavingFunction	String	Specify the Capacity Saving Function for target volumes.  Refer to your storage system product documentation for the optimal setting.	"None", "Compression", "Deduplication and Compression"	None
CapacitySavingMode	String	Specify the Capacity Saving Mode for target volumes.  Refer to your storage system product documentation for the optimal setting.	"Inline mode", "Post-process mode"	Post-process mode

KeyName	Type	Description	Range	Default Value
ResourceCriteria	file	Specify the resource criteria.	See the following File type property list	-
PerformanceSettingEnabled	string	Select the pool or port based on its capacity, or its capacity and performance history. The performance history consists of BusyRate in the case of pools, and Port Transfer rate in the case of ports.	Capacity, Capacity and Performance history	Capacity
PerformanceProperty	file	Specify the performance property.	See the following File type property list	-
InputType	string	Specify the host input type as Input Host information to add a new host or specify Select Host to use an existing host.	Input Host Information, Select Host	Input Host Information
PortType	string	Specify the port type as Fibre or iSCSI.	Fibre, iSCSI	Fibre
StorageManagementConnection	file	Specify the host input type as Input Host information to add a new host or specify Select Host to use an existing host.	See the following File type property list	-
HostsFilter	file	Use the filters to display only the source hosts that match the specified criteria.	See the following File type property list	-
JoinHostFiltersBy	string	Use the "and" or the "or" operator to join multiple filters.	and, or	and

KeyName	Type	Description	Range	Default Value
HostRowsPerPage	integer	Use the filter to display only the specified number of source hosts.	50-1000	50
HostCurrentPage	integer	Use the filter to display only the specified page number of the rows per page number of source hosts.	-	1
Hosts	file	Select the hosts which allocate volumes.	See the following File type property list	-
HostMode	file	Specify the parameters for creating a new host group.	See the following File type property list	{"hostMode": "WIN_EX", "hostModeOption": []}
NumberOfHosts	string	Select the number of hosts to allocate volumes.	Single, Multiple	Single
MultipleHostsPerStoragePort	boolean	Select to share storage ports with multiple hosts.	true or false	true
MultipleHostsPerHostGroup	boolean	Select to share host groups with multiple hosts.	true or false	true
HostSettingsForSingleHost	file	Specify information about the hosts where the volumes will be allocated.	See the following File type property list	{"hostName": "", "wwnSettings": [], "iScsiSettings": []}
HostSettingsForMultiHost	file	Specify information about the hosts where the volumes will be allocated.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
SelectSameStorage	string	Specify whether to select the same storage system and pool as existing volumes if any volumes have already been allocated to the specified host/WWN/iSCSI name. If "Enabled" is specified, volumes will be created on the same storage system and pool as the existing volumes. If "Disabled" is specified, volumes will be created on a pool with the lowest usage rate.	Disabled, Enabled	Enabled
FabricSettingEnabled	boolean	Specifying True enables fabric information collection functionality.	true or false	false
FabricConnectionType	string	Specify the fabric type, either FOS_PrimarySwitch or DCNM to filter the Category in Connections.	FOS_PrimarySwitch, DCNM	FOS_PrimarySwitch
FabricConnections	file	Specify the connection defined in the Web Service Connections on the Administration Tab. If this value is omitted, the system uses all connections that are defined for the product name listed in the Web Service Connections.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
TargetFabrics	string	Specify the fabric name. Separate multiple values by commas. If omitted, all fabrics defined as FOS_PrimarySwitch or DCNM in Connections will be used.	-	
UsingExistingZone	boolean	Specifies whether to select a predefined zone or any connectable path. If you specify True, the system selects paths within the range of the existing active Zone setting. If you specify False, the system selects connectable paths regardless of the existing Zone setting.	true or false	true
FabricHopsRestriction	boolean	Determines whether the service will fail if there is no path that matches the specified collection range.	true or false	false
ZoneSettingEnabled	boolean	Specify True to enable the modify zone settings functionality.	true or false	false

KeyName	Type	Description	Range	Default Value
UseExistingZoneAliases	boolean	Specify True to use predefined Zone Aliases regardless of the naming conventions the user specifies. If you specify False, the system selects Zone Aliases that follow the naming conventions. In either case, if there are no existing Zone Aliases, the system creates new Zone Aliases that follow the naming conventions.	true or false	false
UpdateActiveZoneConfiguration	boolean	Specify True to add a Zone to the active Zone Configuration.	true or false	true
ZoneConfigurationNameToUpdate	string	To add a zone to a Zone Configuration other than the active configuration, specify the name of the Zone Configuration in which to add the zone.	-	-
NamingScriptZone	file	Specify the naming convention script that determines the Zone name for the path.	-	See the following script example.
NamingScriptHostZoneAlias	file	Specify the naming convention script that determines the Zone Alias name for the host port.	-	See the following script example.
NamingScriptStorageZoneAlias	file	Specify the zone information.	-	See the following script example.

## File type property list

Table 299 ConfigurationManagerConnection

Data nesting information		Description	Range
value			
	productName	Category	-
	name	Name	-
	ipAddress	IP Address/Host Name	-
	port	Port	-
	protocol	Protocol	-
	userID	User ID	-
	status	Status	-
	connectedTime	Connected Time	-
	isOEM	Internal use (Do not change)	-

Table 300 VirtualStorageMappingDefinition

Data nesting information		Description	Range	
value				
	virtualModel	Virtual model	-	
	virtualSerialNumber	Virtual serial number	-	
	physicalStorages	Physical storage systems	-	
	model	Model	-	
	serialNumber	Serial number	-	
	virtualLdevRange	Virtual LDEV ID range	-	
		startsFrom	Starts from	0-65279
		endsAt	Ends at	0-65279



Table 301 VirtualStorageMachine

Data nesting information		Description	Range
value			
	virtualModel	Virtual model	-
	virtualSerialNumber	Virtual serial number	-
	physicalStorageString	Detected storage systems	-
	virtualStorageMachineConsistsOfOneResourceGroup	Virtual Storage Machine consists of one Resource Group	-
	virtualStorageMappingDefinition	Virtual storage mapping definition	-
	virtualStorageDeviceID	Virtual storage device ID	-
	invalidMessage	Note	-
	physicalStorages	Detected storage information	-

Table 302 StorageSystem

Data nesting information		Description	Range
value			
	storageDeviceId	Storage Device ID	-
	model	Model	-
	serialNumber	Serial Number	-
	svplp	SVP IP Address	-

Table 303 ResourceGroup

Data nesting information		Description	Range
value			
	resourceGroupId	Resource Group ID	-
	resourceGroupName	Resource Group Name	-



Data nesting information		Description	Range
	ldevSetting	LDEV Setting	-
	ldevIdStartsFrom	LDEV ID Starts From	0-16777215
	virtualLdevIdStartsFrom	Virtual LDEV ID Starts From	0-65279
	lunSetting	LUN Setting	-
	lunStartsFrom	LUN Starts From	0-2047
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 306 ResourceCriteria

Data nesting information		Description	Range
value			
	volumeUsage	Volume Usage	-
	storagePortCriteria	Storage Port	-
	expressions	Expressions	-
	items	Expression	-
	name	Attribute	[ "Name" ]
	op	Operator	[ "Equals", "Not Equals", "Starts With", "Ends With" ]
	value	Value	-

Table 307 PerformanceProperty

Data nesting information		Description	Range
value			
	MonitoringConnection	Monitoring Connection	-
	productName	Category	-
	name	Name	-
	ipAddress	IP Address/Host Name	-
	port	Port	-

Data nesting information		Description	Range
	protocol	Protocol	-
	userID	User ID	-
	status	Status	-
	connectedTime	Connected Time	-
	BusyRateUpper	Pool BusyRate lower than (%)	1-100
	TransferRateUpper	Port TransferRate lower than (MBps)	1-2147483647
	SamplingSpan	Performance evaluation window (Days)	1-14

Table 308 StorageManagementConnection

Data nesting information		Description	Range
value			
	productName	Category	-
	name	Name	-
	ipAddress	IP Address/Host Name	-
	port	Port	-
	protocol	Protocol	-
	userID	User ID	-
	status	Status	-
	connectedTime	Connected Time	-

Table 309 HostsFilter

Data nesting information		Description	Range
value <sup>1</sup>			
	key	Key which is used by source volume filter	"Name", "Description", "IP Address", "Protocol", "WWN", "iSCSI Name", "OS Type", "Server Group Name", "Attached Volume Count"
	operator	Operator	""="", ""!="", ""start with", ""ends with""

Data nesting information		Description	Range
	value	Value	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 310 Hosts

Data nesting information		Description	Range
value			
	serverId	ID	-
	serverName	Name	-
	description	Description	-
	ipAddress	IP Address	-
	protocol	Protocol	-
	wwpns	WWN	-
	iscsiNames	iSCSI Name	-
	osType	OS Type	-
	serverGroupName	Server Group Name	-
	chapUser	CHAP User	-
	attachedVolumeCount	Attached Volume Count	-

Table 311 HostMode

Data nesting information		Description	Range
value			
	hostMode <sup>1</sup>	Host mode	-
	hostModeOption <sup>1</sup>	Host mode options	-
1. See the Provisioning Guide for your storage system for details about the host mode and host mode options.			

Table 312 HostSettingsForSingleHost / HostSettingsForMultiHost

Data nesting information		Description	Range
value <sup>1</sup>			
	hostName	Host Name	1-64 characters. ^[A-Za-z0-9\.\:@_][A-Za-z0-9\.\:@_]*\$
	wwnSettings	WWN Settings	-
	items <sup>1</sup>	WWN Setting	-
	wwn	WWN	16 characters. ^[0-9A-Fa-f]*\$
	wwnNickname	WWN Nickname	max 64 characters. ^[A-Za-z0-9\.\:@_][A-Za-z0-9\.\:@_]*\$
	iScsiSettings	iSCSI Settings	-
	items	iSCSI Setting	-
	iScsiName	iSCSI Name	-
	iScsiNickname	iSCSI Nickname	max 32 characters. ^[A-Za-z0-9\.\:@_][A-Za-z0-9\.\:@_]*\$
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 313 FabricConnections

Data nesting information		Description	Range
value			
	productName	Category	-
	name	Name	-
	ipAddress	IP Address/Host Name	-
	port	Port	-
	protocol	Protocol	-
	userID	User ID	-
	status	Status	-
	connectedTime	Connected Time	-

Table 314 ScriptForHostGroupNaming

Specifications of the script	Description
script	Function that is written in the syntax of ECMAScript 5. The following conditions of arguments and return must be satisfied.
arguments	arguments[0]: The object with the following properties is passed as an argument. <ul style="list-style-type: none"> <li>▪ mold: The ID of the host (Managed Object ID in vCenter)</li> <li>▪ name: The name of the host.</li> <li>▪ clusterName: The name of the cluster to which the host belongs.</li> <li>▪ clusterMold: The ID of the cluster to which the host belongs. (Managed Object ID in vCenter)</li> <li>▪ ipAddresses: The IP addresses for management of the host.</li> <li>▪ wwns: The WWNs of the host (: separated hex value)</li> </ul>
return	Script must return the string that satisfies the following conditions. <ol style="list-style-type: none"> <li>1. Available characters: Only alphanumeric characters and “_”</li> <li>2. The first character is alphabetic</li> <li>3. Host Group Name is up to 64 characters</li> </ol>
example	<pre>function(host) {   /**    * Following attributes are available.    *    * - host.moId: string    *   The ID of the host (Managed Object ID in vCenter)    *    * - host.name: string    *   The name of the host.    *    * - host.clusterName: string    *   The name of the cluster to which the host belongs.    *    * - host.clusterMoId: string    *   The ID of the cluster to which the host belongs.    *   (Managed Object ID in vCenter)    *    * - host.ipAddresses: string    *   The IP addresses for management of the host.    *    * - host.wwns: [string]    *   The WWNs of the host (: separated hex value)    *    */ }</pre>

Specifications of the script	Description
	<pre> */ var hostGroupName = host.name; if (!hostGroupName) {     hostGroupName = "HostGroupForDataStore"; } return hostGroupName; } </pre>

**Table 315 NamingScriptZone / NamingScriptHostZoneAlias / NamingScriptStorageZoneAlias**

Specifications of the script	Description
script	<p>Function that is written in the syntax of ECMAScript 5.</p> <p>The following conditions of arguments and return must be satisfied.</p>
arguments	<p>arguments[0]: The object with the following properties is passed as an argument.</p> <ul style="list-style-type: none"> <li>▪ hostname: Host name</li> <li>▪ hostPortWorldWideName: WWN of HBA. Separator notation is based on BNA.</li> <li>▪ storagePortWorldWideName: WWN of CHA. Separator notation is based on BNA.</li> <li>▪ storageSystemFamily: Display model name of the physical storage system</li> <li>▪ storageSystemName: Name of physical storage system on Configuration Manager</li> <li>▪ storageSystemSerialNumber: Serial number of physical storage system</li> <li>▪ storagePortName: Display port name of the storage system</li> <li>▪ virtualStorageArrayFamily: Display model name of virtual storage (if non-virtual, "-")</li> <li>▪ virtualStorageSystemName: Name of virtual storage on Configuration Manager (if non-virtual, "-")</li> <li>▪ virtualSerialNumber: Serial number of virtual storage (if non-virtual, "-")</li> <li>▪ serviceProperties: List of the service properties passed to the plug-in</li> </ul>



Specifications of the script	Description
return	<p>Script must return the string that satisfies the following conditions.</p> <ol style="list-style-type: none"> <li>1. Available characters: Only alphanumeric characters and “_”</li> <li>2. The first character is alphabetic</li> <li>3. Zone is up to 60 characters</li> <li>4. Zone alias is up to 64 characters</li> <li>5. About Zone, the string starting from "LSAN_", "TI_", "QOSHn+_ ", "QOSMn+_ ", "QOSLn_" is not allowed (case ignored. "n" is number.)</li> </ol>
example	<pre>(function(args) {   var name;   if(! args.virtualSerialNumber    args.virtualSerialNumber == "-") {     name = args.hostName + "_" + args.storageSystemName + "_" + args.storagePortName;   }else{     name = args.hostName + "_" + args.virtualStorageSystemName + "_" + args.storagePortName;   }   if (!(name === null    typeof(name) == "string"    name instanceof String)) {     throw new Error("Zone name must be a string: "+ name);   }   name = name.replace(/[^A-Za-z0-9_]/g, '_');   if(name.length &gt; 60){     throw new Error("Zone name must be within 60 characters: "+ name);   }   if (/^[A-Z]/i.test(name) == false) {     throw new Error("Zone name must start with a alphabet: "+ name);   }   if (/^LSAN_/i.test(name)    /^TI_/i.test(name)    /^QOS[HML] [0-9]+_ /i.test(name)) {     throw new Error("Zone name has the prefix LSAN_, TI_ or QOSxx_ cannot be for normal zone: "+name);   }   return name; })</pre>

## Allocate Volumes with Smart Provisioning (submit)

KeyName	Type	Description	Range	Default Value
ConfigurationManager Connection	file	Specify the Configuration Manager Connection.	See the following File type property list	-
StorageSelection	string	Specify whether to select storage system at volume allocation. If you specify 'Automatic', then a storage system will be selected automatically.	Automatic, Manual	Automatic
SelectFrom	string	Specify where to select from in the automatic selection. "All Storage Systems" selects from all storage systems registered on Configuration Manager. "Virtual Storage Machine" selects the storage system to provision from the storage systems that comprise the specified virtual storage machine.	All Storage Systems, Virtual Storage Machine	All Storage Systems

KeyName	Type	Description	Range	Default Value
VirtualStorageMachine	file	Specify the Virtual Storage Machine. If the "Virtual Storage Machine consists of one Resource Group" column is "No", then the resource group with the minimum ID will be used. If the "Virtual Storage Mapping Definition" column is "None" or "Unnecessary", then revise Virtual Storage Mapping.	See the following File type property list	-
StorageSystem	file	Specify the Storage System.	See the following File type property list	-
ResourceGroupSelection	string	Specify whether to select resource group at volume allocation. If you specify 'Meta resource', then the meta resource group will be selected.	Meta resource, Manual	Meta resource
ResourceGroup	file	Specify the Resource Group.	See the following File type property list	-
PoolSelection	string	Specify whether to select pool at volume allocation. If you specify 'Automatic', then a pool will be selected automatically.	Automatic, Manual	Automatic
Pool	file	Specify the pool.	See the following File type property list	-
CapacityFormat	string	Select the volume capacity format.	Byte, Block	Byte

KeyName	Type	Description	Range	Default Value
VolumeSettings	file	Specify the parameters for creating new volumes.	See the following File type property list	[{"volumeUsage": "OS", "numberOfVolumes": 1, "volumeCapacityInMiB": 153600, "blockCapacity": "314572800", "volumeLabel": "", "diskType": [], "devSetting": {"ldevIdStartsFrom": 0, "virtualLdevIdStartsFrom": 0}, "lunSetting": {"lunStartsFrom": 0}}, {"volumeUsage": "App", "numberOfVolumes": 1, "volumeCapacityInMiB": 204800, "blockCapacity": "419430400", "volumeLabel": "", "diskType": [], "devSetting": {"ldevIdStartsFrom": 0, "virtualLdevIdStartsFrom": 0},

KeyName	Type	Description	Range	Default Value
				"lunSetting": {"lunStartsFrom":0}, {"volumeUsage":"Data","numberOfVolumes":1,"volumeCapacityInMiB":460800,"blockCapacity":"943718400","volumeLabel":"","diskType": [],"devSetting": {"devIdStartsFrom":0,"virtualDevIdStartsFrom":0}, "lunSetting": {"lunStartsFrom":0}}
CapacitySavingFunction	String	Specify the Capacity Saving Function for target volumes.  Refer to your storage system product documentation for the optimal setting.	"None", "Compression", "Deduplication and Compression"	None
CapacitySavingMode	String	Specify the Capacity Saving Mode for target volumes.  Refer to your storage system product documentation for the optimal setting.	"Inline mode", "Post-process mode"	Post-process mode

KeyName	Type	Description	Range	Default Value
ResourceCriteria	file	Specify the resource criteria.	See the following File type property list	-
PerformanceSettingEnabled	string	Select the pool or port based on its capacity, or its capacity and performance history. The performance history consists of BusyRate in the case of pools, and Port Transfer rate in the case of ports.	Capacity, Capacity and Performance history	Capacity
PerformanceProperty	file	Specify the performance property.	See the following File type property list	-
InputType	string	Specify the host input type as Input Host information to add a new host or specify Select Host to use an existing host.	Input Host Information, Select Host	Input Host Information
PortType	string	Specify the port type as Fibre or iSCSI.	Fibre, iSCSI	Fibre
StorageManagementConnection	file	Specify the host input type as Input Host information to add a new host or specify Select Host to use an existing host.	See the following File type property list	-
HostsFilter	file	Use the filters to display only the source hosts that match the specified criteria.	See the following File type property list	-
JoinHostFiltersBy	string	Use the "and" or the "or" operator to join multiple filters.	and, or	and

KeyName	Type	Description	Range	Default Value
HostRowsPerPage	integer	Use the filter to display only the specified number of source hosts.	50-1000	50
HostCurrentPage	integer	Use the filter to display only the specified page number of the rows per page number of source hosts.	-	1
Hosts	file	Select the hosts which allocate volumes.	See the following File type property list	-
HostMode	file	Specify the parameters for creating a new host group.	See the following File type property list	{"hostMode": "WIN_EX", "hostModeOption": []}
NumberOfHosts	string	Select the number of hosts to allocate volumes.	Single, Multiple	Single
MultipleHostsPerStoragePort	boolean	Select to share storage ports with multiple hosts.	true or false	true
MultipleHostsPerHostGroup	boolean	Select to share host groups with multiple hosts.	true or false	true
HostSettingsForSingleHost	file	Specify information about the hosts where the volumes will be allocated.	See the following File type property list	{"hostName": "", "wwnSettings": [], "iScsiSettings": []}
HostSettingsForMultiHost	file	Specify information about the hosts where the volumes will be allocated.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
SelectSameStorage	string	Specify whether to select the same storage system and pool as existing volumes if any volumes have already been allocated to the specified host/WWN/iSCSI name. If "Enabled" is specified, volumes will be created on the same storage system and pool as the existing volumes. If "Disabled" is specified, volumes will be created on a pool with the lowest usage rate.	Disabled, Enabled	Enabled
ZoneConfigurationNameToUpdate	string	To add a zone to a Zone Configuration other than the active configuration, specify the name of the Zone Configuration in which to add the zone.	-	-
NamingScriptZone	file	Specify the naming convention script that determines the Zone name for the path.	-	See the following script example.
NamingScriptHostZoneAlias	file	Specify the naming convention script that determines the Zone Alias name for the host port.	-	See the following script example.
NamingScriptStorageZoneAlias	file	Specify the zone information.	-	See the following script example.



## File type property list

Table 316 ConfigurationManagerConnection

Data nesting information		Description	Range
value			
	productName	Category	-
	name	Name	-
	ipAddress	IP Address/Host Name	-
	port	Port	-
	protocol	Protocol	-
	userID	User ID	-
	status	Status	-
	connectedTime	Connected Time	-
	isOEM	Internal use (Do not change)	-

Table 317 VirtualStorageMachine

Data nesting information		Description	Range
value			
	virtualModel	Virtual model	-
	virtualSerialNumber	Virtual serial number	-
	physicalStorageString	Detected storage systems	-
	virtualStorageMachineConsistsOfOneResourceGroup	Virtual Storage Machine consists of one Resource Group	-
	virtualStorageMappingDefinition	Virtual storage mapping definition	-
	virtualStorageDeviceID	Virtual storage device ID	-
	invalidMessage	Note	-
	physicalStorages	Detected storage information	-

**Table 318 StorageSystem**

Data nesting information		Description	Range
value			
	storageDeviceId	Storage Device ID	-
	model	Model	-
	serialNumber	Serial Number	-
	svplp	SVP IP Address	-

**Table 319 ResourceGroup**

Data nesting information		Description	Range
value			
	resourceGroupId	Resource Group ID	-
	resourceGroupName	Resource Group Name	-
	virtualStorageId	Virtual Storage System ID	-
	virtualStorageMachine	Virtual Storage System	-

**Table 320 Pool**

Data nesting information		Description	Range
value			
	poolId	Pool ID	-
	poolName	Pool name	-
	poolType	Pool type	-
	usedCapacityRate	Used capacity rate (%)	-
	availableVolumeCapacity	Available capacity	-
	totalPoolCapacity	Total capacity	-
	numOfLdevs	Number of volumes	-

**Table 321 VolumeSettings**

Data nesting information		Description	Range
value <sup>1</sup>			
	volumeUsage	Volume Usage	1-64 characters. ^[A-Za-z0-9 ~!@#\\\$%\\ \\^&()_  + - =\\{ \\} \\ \\ \\  \\. ]*\$
	numberOfVolumes	Number of Volumes	1-200
	volumeCapacityInMiB	Volume Capacity	47-268435456
	blockCapacity	Volume Capacity	96000-549755813888
	volumeLabel	Volume Label	max 64 characters. ^[A-Za-z0-9\\.:@_][A-Za-z0-9\\ \\.:@_]*\$
	diskType	Disk type	-
	ldevSetting	LDEV Setting	-
	ldevIdStartsFrom	LDEV ID Starts From	0-16777215
	virtualLdevIdStartsFrom	Virtual LDEV ID Starts From	0-65279
	lunSetting	LUN Setting	-
	lunStartsFrom	LUN Starts From	0-2047
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

**Table 322 ResourceCriteria**

Data nesting information		Description	Range
value			
	volumeUsage	Volume Usage	-
	storagePortCriteria	Storage Port	-
	expressions	Expressions	-
	items	Expression	-
	name	Attribute	[ "Name" ]

Data nesting information		Description	Range
	op	Operator	[ "Equals", "Not Equals", "Starts With", "Ends With" ]
	value	Value	-

Table 323 PerformanceProperty

Data nesting information		Description	Range
value			
	MonitoringConnection	Monitoring Connection	-
	productName	Category	-
	name	Name	-
	ipAddress	IP Address/Host Name	-
	port	Port	-
	protocol	Protocol	-
	userID	User ID	-
	status	Status	-
	connectedTime	Connected Time	-
	BusyRateUpper	Pool BusyRate lower than (%)	1-100
	TransferRateUpper	Port TransferRate lower than (MBps)	1-2147483647
	SamplingSpan	Performance evaluation window (Days)	1-14

Table 324 StorageManagementConnection

Data nesting information		Description	Range
value			
	productName	Category	-
	name	Name	-
	ipAddress	IP Address/Host Name	-
	port	Port	-

Data nesting information		Description	Range
	protocol	Protocol	-
	userID	User ID	-
	status	Status	-
	connectedTime	Connected Time	-

Table 325 HostsFilter

Data nesting information		Description	Range
value <sup>1</sup>			
	key	Key which is used by source volume filter	"Name", "Description", "IP Address", "Protocol", "WWN", "iSCSI Name", "OS Type", "Server Group Name", "Attached Volume Count"
	operator	Operator	""="", ""!="", ""start with"", ""ends with""
	value	Value	-

1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.

Table 326 Hosts

Data nesting information		Description	Range
value			
	serverId	ID	-
	serverName	Name	-
	description	Description	-
	ipAddress	IP Address	-
	protocol	Protocol	-
	wwpns	WWN	-
	iscsiNames	iSCSI Name	-
	osType	OS Type	-
	serverGroupName	Server Group Name	-

Data nesting information		Description	Range
	chapUser	CHAP User	-
	attachedVolumeCount	Attached Volume Count	-

Table 327 HostMode

Data nesting information		Description	Range
value			
	hostMode <sup>1</sup>	Host mode	-
	hostModeOption <sup>1</sup>	Host mode options	-
<p>1. See the Provisioning Guide for your storage system for details about the host mode and host mode options.</p>			

Table 328 HostSettingsForSingleHost / HostSettingsForMultiHost

Data nesting information		Description	Range
value <sup>1</sup>			
	hostName	Host Name	1-64 characters. <sup>^</sup> [A-Za-z0-9\.\:@_][A-Za-z0-9\.\:@_]*\$
	wwnSettings	WWN Settings	-
	items <sup>1</sup>	WWN Setting	-
	wwn	WWN	16 characters. <sup>^</sup> [0-9A-Fa-f]*\$
	wwnNickname	WWN Nickname	max 64 characters. <sup>^</sup> [A-Za-z0-9\.\:@_][A-Za-z0-9\.\:@_]*\$
	iScsiSettings	iSCSI Settings	-
	items	iSCSI Setting	-
	iScsiName	iSCSI Name	-
	iScsiNickname	iSCSI Nickname	max 32 characters. <sup>^</sup> [A-Za-z0-9\.\:@_][A-Za-z0-9\.\:@_]*\$
<p>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.</p>			

**Table 329 ScriptForHostGroupNaming**

Specifications of the script	Description
script	Function that is written in the syntax of ECMAScript 5. The following conditions of arguments and return must be satisfied.
arguments	arguments[0]: The object with the following properties is passed as an argument. <ul style="list-style-type: none"> <li>▪ mold: The ID of the host (Managed Object ID in vCenter)</li> <li>▪ name: The name of the host.</li> <li>▪ clusterName: The name of the cluster to which the host belongs.</li> <li>▪ clusterMold: The ID of the cluster to which the host belongs. (Managed Object ID in vCenter)</li> <li>▪ ipAddresses: The IP addresses for management of the host.</li> <li>▪ wwns: The WWNs of the host (: separated hex value)</li> </ul>
return	Script must return the string that satisfies the following conditions. <ol style="list-style-type: none"> <li>1. Available characters: Only alphanumeric characters and “_”</li> <li>2. The first character is alphabetic</li> <li>3. Host Group Name is up to 64 characters</li> </ol>
example	<pre>function(host) {   /**    * Following attributes are available.    *    * - host.moId: string    *   The ID of the host (Managed Object ID in vCenter)    *    * - host.name: string    *   The name of the host.    *    * - host.clusterName: string    *   The name of the cluster to which the host belongs.    *    * - host.clusterMoId: string    *   The ID of the cluster to which the host belongs.    *   (Managed Object ID in vCenter)    *    * - host.ipAddresses: string    *   The IP addresses for management of the host.    *    * - host.wwns: [string]    *   The WWNs of the host (: separated hex value)    *    */ }</pre>

Specifications of the script	Description
	<pre> */ var hostGroupName = host.name; if (!hostGroupName) {     hostGroupName = "HostGroupForDataStore"; } return hostGroupName; }                     </pre>

**Table 330 NamingScriptZone / NamingScriptHostZoneAlias / NamingScriptStorageZoneAlias**

Specifications of the script	Description
script	<p>Function that is written in the syntax of ECMAScript 5.</p> <p>The following conditions of arguments and return must be satisfied.</p>
arguments	<p>arguments[0]: The object with the following properties is passed as an argument.</p> <ul style="list-style-type: none"> <li>▪ hostname: Host name</li> <li>▪ hostPortWorldWideName: WWN of HBA. Separator notation is based on BNA.</li> <li>▪ storagePortWorldWideName: WWN of CHA. Separator notation is based on BNA.</li> <li>▪ storageSystemFamily: Display model name of the physical storage system</li> <li>▪ storageSystemName: Name of physical storage system on Configuration Manager</li> <li>▪ storageSystemSerialNumber: Serial number of physical storage system</li> <li>▪ storagePortName: Display port name of the storage system</li> <li>▪ virtualStorageArrayFamily: Display model name of virtual storage (if non-virtual, "-")</li> <li>▪ virtualStorageSystemName: Name of virtual storage on Configuration Manager (if non-virtual, "-")</li> <li>▪ virtualSerialNumber: Serial number of virtual storage (if non-virtual, "-")</li> <li>▪ serviceProperties: List of the service properties passed to the plug-in</li> </ul>



Specifications of the script	Description
return	<p>Script must return the string that satisfies the following conditions.</p> <ol style="list-style-type: none"> <li>1. Available characters: Only alphanumeric characters and “_”</li> <li>2. The first character is alphabetic</li> <li>3. Zone is up to 60 characters</li> <li>4. Zone alias is up to 64 characters</li> <li>5. About Zone, the string starting from "LSAN_", "TI_", "QOSHn +_", "QOSMn +_", "QOSLn_" is not allowed (case ignored. "n" is number.)</li> </ol>
example	<pre>(function(args) {   var name;   if(! args.virtualSerialNumber    args.virtualSerialNumber == "-") {     name = args.hostName + "_" + args.storageSystemName + "_" + args.storagePortName;   }else{     name = args.hostName + "_" + args.virtualStorageSystemName + "_" + args.storagePortName;   }   if (!(name === null    typeof(name) == "string"    name instanceof String)) {     throw new Error("Zone name must be a string: "+ name);   }   name = name.replace(/[^A-Za-z0-9_]/g, '_');   if(name.length &gt; 60){     throw new Error("Zone name must be within 60 characters: "+ name);   }   if (/^[A-Z]/i.test(name) == false) {     throw new Error("Zone name must start with a alphabet: "+ name);   }   if (/^LSAN_/i.test(name)    /^TI_/i.test(name)    /^QOS[HML] [0-9]_+/i.test(name)) {     throw new Error("Zone name has the prefix LSAN_, TI_ or QOSxx_ cannot be for normal zone: "+name);   }   return name; })</pre>

## Allocate Volumes with Smart Provisioning (task details)

KeyName	Type	Description	Range
LUNPathConfigurationInformation	file	Stores the allocated LUN path information from the volume allocation results.	See the following File type property list
provisioning.taskResult.createdZoneConfigurations	file	Stores the new zone configuration.	See the following File type property list
provisioning.taskResult.createdZones	file	Stores the new zone configuration.	See the following File type property list
provisioning.taskResult.createdZoneAliases	file	Stores the new zone configuration.	See the following File type property list
provisioning.taskResult.updatedZoneConfigurations	file	Stores the updated zone configuration.	See the following File type property list
provisioning.taskResult.updatedZones	file	Stores the updated zone information.	See the following File type property list
provisioning.taskResult.updatedZoneAliases	file	Stores the updated zone aliases.	See the following File type property list

## File type property list

Table 331 LUNPathConfigurationInformation

Data nesting information	Description	Range
value <sup>1</sup>		
hostName	Host Name	-
hostPortName	Host Port WWN	-
portWorldWideName	Storage Port WWN	-
storageDeviceId	Storage Device ID	-
portName	Storage Port Name	-
lun	LUN	-

Data nesting information		Description	Range
	portType	Port Type	-
	capacity	Capacity	-
	ldevId	LDEV ID	-
	hostGroupNameOrIScsiTarget	Host Group Name	-
	hostGroupNumber	Host Group Number	-
	hostMode	Host Mode	-
	hostModeOptions	Host Mode Options	-
	storageSystemModel	Storage System Model	-
	storageSystemSerialNumber	Storage System Serial No.	-
	ldevLabel	LDEV Label	-
	virtualStorageMachineResource GroupName	Resource Group Name	-
	virtualLdevId	Virtual LDEV ID	-
	poolId	Pool ID	-
	asymmetricAccessStatus	Asymmetric Access State	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

**Table 332 provisioning.taskResult.createdZoneConfigurations**

Data nesting information		Description	Range
value <sup>1</sup>			
	name	Name	-
	zoneNames	Zone names	-
	bnaname	Switch Management Server/ FOS_PrimarySwitch	-
	fabricName	Fabric name	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

**Table 333 provisioning.taskResult.createdZones**

Data nesting information		Description	Range
value <sup>1</sup>			
	name	Name	-
	displayName	Type	-
	aliasNames	Alias names	-
	memberNames	Member names	-
	bnaname	Switch Management Server/ FOS_PrimarySwitch	-
	fabricName	Fabric name	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

**Table 334 provisioning.taskResult.createdZoneAliases**

Data nesting information		Description	Range
value <sup>1</sup>			
	name	Name	-
	memberNames	Member names	-
	bnaname	Switch Management Server/ FOS_PrimarySwitch	-
	fabricName	Fabric name	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

**Table 335 provisioning.taskResult.updatedZoneConfigurations**

Data nesting information		Description	Range
value <sup>1</sup>			
	name	Name	-
	zoneNames	Zone names	-
	bnaname	Switch Management Server/ FOS_PrimarySwitch	-
	fabricName	Fabric name	-

Data nesting information	Description	Range
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.		

Table 336 provisioning.taskResult.updatedZones

Data nesting information	Description	Range
value <sup>1</sup>		
	name	Name -
	displayName	Type -
	aliasNames	Alias names -
	memberNames	Member names -
	bnaname	Switch Management Server/ FOS_PrimarySwitch -
	fabricName	Fabric name -
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.		

Table 337 provisioning.taskResult.updatedZoneAliases

Data nesting information	Description	Range
value <sup>1</sup>		
	name	Name -
	memberNames	Member names -
	bnaname	Switch Management Server/ FOS_PrimarySwitch -
	fabricName	Fabric name -
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.		

## Clean up Online Migration Pair service properties

Use the following properties to modify or create values for the Clean up Online Migration Pair service.

## Clean up Online Migration Pair service properties (edit)

keyName	Type	Description	Range	Default value
taskRowsPerPage	integer	Specify the number of tasks displayed on the window at one time.	100, 200, 500, 1000	1000
taskCurrentPage	integer	Specify the number of tasks per page displayed in the window.	1 or more	1
targetTaskInfo	file	Select the clean up target task.	See the following File type property list	-
storage_lock_total_wait_time	integer	Specify the lock waiting time upper limit when acquiring the storage lock while changing the configuration.	305 - 630720000	604800
responseTimeOut	integer	Specifies the maximum wait time for the response in minutes.	1 - 20160	20160

## File type property list

Table 338 targetTaskInfo

Data nesting information		Description	Range
values			
	instanceID	-	-
	name	-	-
	toDo	-	-
	status	-	-

Data nesting information		Description	Range
	startTime	-	-
	completionTime	-	-
	serviceName	-	-
	serviceState	-	-
	submitter	-	-
	notes	-	-

### Clean up Online Migration Pair service properties (submit)

keyName	Type	Description	Range	Default value
taskRowsPerPage	integer	Specify the number of tasks displayed on the window at one time.	100, 200, 500, 1000	1000
taskCurrentPage	integer	Specify the number of tasks per page displayed in the window.	1 or more	1
targetTaskInfo	file	Select the clean up target task.	See the following File type property list	-

#### File type property list

Table 339 targetTaskInfo

Data nesting information		Description	Range
values			
	instanceID	-	-
	name	-	-
	toDo	-	-

Data nesting information		Description	Range
	status	-	-
	startTime	-	-
	completionTime	-	-
	serviceName	-	-
	serviceState	-	-
	submitter	-	-
	notes	-	-

### Clean up Online Migration Pair service properties (task details)

keyName	Type	Description	Range	Default value
TargetCopyGroupInformation	File	Stores deleted target copy group information.	See the following File type property list	-
TargetCopyPairInformation	File	Stores deleted target copy pairs information.	See the following File type property list	-
TargetDisklessQuorumInformation	File	Stores deleted target diskless quorum information.	See the following File type property list	-
TargetLunInformation	File	Stores deleted target LUNs information.	See the following File type property list	-
TargetWWNs/iSCSIsInformation	File	Stores deleted target WWNs/iSCSIs information.	See the following File type property list	-
TargetHostGroupsInformation	File	Stores deleted target host groups information.	See the following File type property list	-



keyName	Type	Description	Range	Default value
TargetVolumesInformation	File	Stores deleted target volumes information.	See the following File type property list	-
SplitFailedCopyPairInformation	File	Stores split failed copy pairs information.	See the following File type property list	-
DeletionFailedCopyGroupInformation	File	Stores deletion failed copy group information.	See the following File type property list	-
DeletionFailedCopyPairInformation	File	Stores deletion failed copy pairs information.	See the following File type property list	-
DeletionFailedDisklessQuorumInformation	File	Stores deletion failed diskless quorum information.	See the following File type property list	-
DeletionFailedLunInformation	File	Stores deletion failed LUNs information.	See the following File type property list	-
DeletionFailedWWNsISCSIInformation	File	Stores deletion failed WWNs/iSCSI names information.	See the following File type property list	-
RemovalFailedHostGroupsResourceGroupInformation	File	Stores removal information of failed host groups/iSCSI targets from resource group.	See the following File type property list	-
DeletionFailedHostGroupsInformation	File	Stores deletion failed host groups/iSCSI targets information.	See the following File type property list	-

keyName	Type	Description	Range	Default value
UnassignFailedVirtualLDEVsInformation	File	Stores virtual LDEV IDs information for which unassignment failed.	See the following File type property list	-
RemovalFailedLDEVsResourceGroupInformation	File	Stores removal information of failed volumes from resource group.	See the following File type property list	-
SetFailedVirtualLDEVIDsInformation	File	Stores virtual LDEV IDs information for which re-assignment failed.	See the following File type property list	-
DeletionFailedVolumesInformation	File	Stores deletion failed volumes information.	See the following File type property list	-

**File type property list**

**Table 340 TargetCopyGroupInformation**

Data nesting information		Description	Range
values			
	copyGroupName	-	-
	objectId	-	-
	remoteStorageDeviceId	-	-
	localDeviceGroupName	-	-
	remoteDeviceGroupName	-	-

**Table 341 TargetCopyPairInformation**

Data nesting information		Description	Range
values			
	copyPairName	-	-
	objectId	-	-
	remoteStorageDeviceId	-	-
	copyGroupName	-	-
	localDeviceGroupName	-	-
	remoteDeviceGroupName	-	-
	primaryLdevId	-	-
	secondaryLdevId	-	-
	quorumDiskId	-	-
	storageId	-	-

**Table 342 TargetDisklessQuorumInformation**

Data nesting information		Description	Range
values			
	quorumDiskId	-	-
	sourceStorageSerial	-	-
	targetStorageSerial	-	-

**Table 343 TargetLunInformation**

Data nesting information		Description	Range
values			
	objectId	-	-
	portId	-	-

Data nesting information		Description	Range
	hostGroupNumber	-	-
	lun	-	-
	ldevId	-	-
	storageId	-	-

Table 344 TargetWWNsiSCSIsInformation

Data nesting information		Description	Range
values			
	portId	-	-
	hostGroupNumber	-	-
	hostWwnOrScsiName	-	-
	storageDeviceId	-	-

Table 345 TargetHostGroupsInformation

Data nesting information		Description	Range
values			
	portId	-	-
	hostGroupNumber	-	-
	hostGroupName	-	-
	storageDeviceId	-	-

Table 346 TargetVolumesInformation

Data nesting information		Description	Range
values			
	ldevId	-	-

Data nesting information		Description	Range
	storageDeviceId	-	-

Table 347 SplitFailedCopyPairInformation

Data nesting information		Description	Range
values			
	copyPairName	-	-
	objectId	-	-
	remoteStorageDeviceId	-	-
	copyGroupName	-	-
	localDeviceGroupName	-	-
	remoteDeviceGroupName	-	-
	primaryLdevId	-	-
	secondaryLdevId	-	-
	quorumDiskId	-	-
	storageId	-	-
	message	-	-

Table 348 DeletionFailedCopyGroupInformation

Data nesting information		Description	Range
values			
	copyGroupName	-	-
	objectId	-	-
	remoteStorageDeviceId	-	-
	localDeviceGroupName	-	-

Data nesting information		Description	Range
	remoteDeviceGroup	-	-
	storageId	-	-
	message	-	-

Table 349 DeletionFailedCopyPairInformation

Data nesting information		Description	Range
values			
	copyPairName	-	-
	objectId	-	-
	remoteStorageDeviceId	-	-
	copyGroupName	-	-
	localDeviceGroupName	-	-
	remoteDeviceGroup	-	-
	primaryLdevId	-	-
	secondaryLdevId	-	-
	quorumDiskId	-	-
	storageId	-	-
	message	-	-

Table 350 DeletionFailedDisklessQuorumInformation

Data nesting information		Description	Range
values			
	quorumDiskId	-	-
	sourceStorageSerial	-	-

Data nesting information		Description	Range
	targetStorageSerial	-	-
	message	-	-

Table 351 DeletionFailedLunInformation

Data nesting information		Description	Range
values			
	objectId	-	-
	portId	-	-
	hostGroupNumber	-	-
	lun	-	-
	ldevId	-	-
	storageId	-	-
	message	-	-

Table 352 DeletionFailedWWNsiSCSIsInformation

Data nesting information		Description	Range
values			
	portId	-	-
	hostGroupNumber	-	-
	hostWwnOrIscsiName	-	-
	storageDeviceId	-	-
	message	-	-

**Table 353 RemovalFailedHostGroupsResourceGroupInformation**

Data nesting information		Description	Range
values			
	resourceGroupId	-	-
	portId	-	-
	hostGroupNumber	-	-
	storageDeviceId	-	-
	message	-	-

**Table 354 DeletionFailedHostGroupsInformation**

Data nesting information		Description	Range
values			
	portId	-	-
	hostGroupNumber	-	-
	hostGroupName	-	-
	storageDeviceId	-	-
	message	-	-

**Table 355 UnassignFailedVirtualLDEVIDsInformation**

Data nesting information		Description	Range
values			
	ldevId	-	-
	virtualLdevId	-	-
	storageDeviceId	-	-
	message	-	-



**Table 356 RemovalFailedLDEVsResourceGroupInformation**

Data nesting information		Description	Range
values			
	resourceGroupld	-	-
	ldevld	-	-
	storageDeviceId	-	-
	message	-	-

**Table 357 SetFailedVirtualLDEVsInformation**

Data nesting information		Description	Range
values			
	ldevld	-	-
	virtualLdevld	-	-
	storageDeviceId	-	-
	message	-	-

**Table 358 DeletionFailedVolumesInformation**

Data nesting information		Description	Range
values			
	ldevld	-	-
	storageDeviceId	-	-
	message	-	-

## Create Online Migration Pair service properties

Use the following properties to modify or create values for the Create Online Migration Pair service.

## Create Online Migration Pair (edit)

KeyName	Type	Description	Range	Default Value
SourceSelection	string	Specify the source resource as Volumes or Hosts.	"Select Hosts", "Select Volumes"	Select Hosts
SourceSAConnection	file	Specify the Source Ops Center Administrator Connection for selecting migration source hosts.	See the following File type property list	-
SourceHostsFilter	file	Use the filters to display only the source hosts that match the specified criteria.	See the following File type property list	-
JoinHostFiltersBy	string	Use the "and" and the "or" operators to join multiple filters.	"and", "or"	and
HostRowsPerPage	integer	Use the filter to display only the specified number of source hosts.	50, 100, 200, 500, 1000	50
HostCurrentPage	integer	Use the filter to display only the specified page number of the rows per page number of source hosts.	-	1
SourceHosts	file	Specify the source hosts.	See the following File type property list	-
SourceConfigurationManagerConnection	file	Specify the Source Configuration Manager Connection for migration.	See the following File type property list	-
SourceStorageSystem	file	Specify the Source Storage System for migration.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
SourceVolumesFilter	file	Use the filters to display only the source volumes that match the specified criteria.	See the following File type property list	{"resourceGroupFilter":false,"value_RG":"","volumeFilters":[]}
JoinFiltersBy	string	Use the "and" and the "or" operators to join multiple filters.	"and", "or"	and
VolumeRowsPerPage	integer	Use the filter to display only the specified number of source volumes.	50, 100, 200, 500, 1000	200
VolumeCurrentPage	integer	Use the filter to display only the specified page number of the rows per page number of source volumes.	-	1
SourceVolumes	file	Specify the source volumes.	See the following File type property list	-
TargetConfigurationManagerConnection	file	Specify the Target Configuration Manager Connection for migration.	See the following File type property list	-
TargetStorageSystem	file	Specify the Target Storage System for migration.	See the following File type property list	-
TargetResourceGroup	file	Specify the Target Resource Group.	See the following File type property list	-
TargetPool	file	Specify the Target Pool.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
LdevIdRangeStartsFrom	integer	Search for undefined LDEV IDs and allocate target volumes in order from the specified physical LDEV ID. If a physical LDEV ID is not specified, volumes with the same LDEV ID are allocated first.	0-65279	-
LdevIdRangeEndsAt	integer	Specify the last LDEV ID in the LDEV ID range. If the last LDEV ID is not specified, LDEV IDs are used up to the storage system maximum.	0-65279	-
ResourceGroupForPreferentialUseWithLdevIds	string	Specify the resource group to use first when searching for available physical LDEV IDs. If there are not enough available LDEV IDs in the resource group with the specified option, LDEV IDs in the resource group with the unspecified option are also used.	"meta_resource", "Selected Target Resource Group"	meta_resource
Mappings	string	Specify the Storage Port Mappings or Host Mappings.	Storage Port Mappings, Host Mappings	Storage Port Mappings

KeyName	Type	Description	Range	Default Value
PortMappings	file	Specify mappings for the source and target storage ports. Based on the mappings, the system configures the I/O path between the host and the target storage port.	See the following File type property list	-
HostModeHostModeOptions	file	Specify the parameters for creating new Host Mode and Host Mode Options. If a host group/iSCSI Target already exists at the migration target, the existing value will not be changed.	See the following File type property list	-
HostMappings	file	Specify individual migration target ports for each host port (HBA). For hosts or clusters that use the same storage port on the migration source, you can configure each host port to use different storage ports on the migration target.	See the following File type property list	-
CapacitySavingSettingsForTargetVolumes	string	Specify how to apply Capacity Saving settings to target volumes.	"Same as source volumes", "Specify Capacity Saving settings"	Same as source volumes

KeyName	Type	Description	Range	Default Value
		<p>If "Same as source volumes" is specified, the settings will be applied in the same way as the Capacity Saving settings for source volumes.</p> <p>If "Specify Capacity Saving settings" is specified, the settings selected in the following properties will be applied.</p> <p>If you select the storage system with "Compression Acceleration" available in the "Target Storage System", then Compression Acceleration is enabled when the capacity saving function is enabled.</p> <p>If you select a storage system where "Compression Acceleration" is unavailable, then Compression Acceleration is disabled.</p>		
CapacitySavingFunction	string	Specify the Capacity Saving Function for target volumes.	"None", "Compression", "Deduplication and Compression"	None
CapacitySavingMode	string	Specify the Capacity Saving Mode for target volumes.	"Inline mode", "Post-process mode"	Post-process mode

KeyName	Type	Description	Range	Default Value
SetCapacitySaving	string	<p>Specify when to apply capacity saving settings to target volumes.</p> <p>If "Before migration" is specified, the settings are applied before copying from the source volumes to the target volumes. Capacity saving begins at the start of migration, but the time required for migration increases.</p> <p>If "After migration" is specified, the settings are applied after copying from the source volumes to the target volumes is complete. The migration time will not increase, but capacity saving will begin after the migration is complete.</p>	"Before migration", "After migration"	Before migration
CopyPace	integer	Specify the Copy Pace (Slow:3, Medium:8, or Fast:15).	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15	8
PathGroupIDSelection	string	Specify whether to manually select the path group ID.	"Auto Selection", "Manual Selection"	Auto Selection

KeyName	Type	Description	Range	Default Value
PathGroupId	string	Specify the path group ID.	00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B, 0C, 0D, 0E, 0F, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 1A, 1B, 1C, 1D, 1E, 1F, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 2A, 2B, 2C, 2D, 2E, 2F, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 3A, 3B, 3C, 3D, 3E, 3F, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 4A, 4B, 4C, 4D, 4E, 4F, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 5A, 5B, 5C, 5D, 5E, 5F, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 6A, 6B, 6C, 6D, 6E, 6F, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 7A, 7B, 7C, 7D, 7E, 7F, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 8A, 8B, 8C, 8D, 8E, 8F, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 9A, 9B, 9C, 9D, 9E, 9F, A0, A1, A2, A3, A4, A5, A6, A7, A8, A9, AA, AB, AC, AD, AE, AF, B0, B1, B2, B3, B4, B5, B6, B7,	00



KeyName	Type	Description	Range	Default Value
			B8, B9, BA, BB, BC, BD, BE, BF, C0, C1, C2, C3, C4, C5, C6, C7, C8, C9, CA, CB, CC, CD, CE, CF, D0, D1, D2, D3, D4, D5, D6, D7, D8, D9, DA, DB, DC, DD, DE, DF, E0, E1, E2, E3, E4, E5, E6, E7, E8, E9, EA, EB, EC, ED, EE, EF, F0, F1, F2, F3, F4, F5, F6, F7, F8, F9, FA, FB, FC, FD, FE, FF	
UseDisklessQuorum	boolean	Specify whether to use diskless quorum.	true or false	true
QuorumDisk	file	Specify the quorum disk.	See the following File type property list	-
RunZeroPageReclaim	boolean	Specify whether to run zero page reclaim when the online migration is completed.	true or false	true
mailsettings.enable	boolean	Specifies whether to send an email notification when the migration target volume path allocation is complete. This enables you to confirm the path allocation listed in the email, then bring it online.	true or false	false

KeyName	Type	Description	Range	Default Value
mailsettings.to	string	Specifies the primary (TO) email notification addresses.	-	-
mailsettings.cc	string	Specifies additional CC email notification addresses.	-	-
mailsettings.bcc	string	Specifies additional BCC email notification addresses.	-	-
mailsettings.subject	string	Specifies the email subject.	-	Migration task information. (Waiting for Action.)
mailsettings.body	file	Specifies the text of the email body.	-	The "Create Online Migration Pair" service task is complete. %taskDetails%

KeyName	Type	Description	Range	Default Value
				<p>Do the following, and then submit the "Migrate Data for Online Migration Pair" service. Confirm the LUN paths of the target volumes in the Task Details dialog box.</p> <ul style="list-style-type: none"> <li>- On the target hosts, bring all target volumes online.</li> <li>- Take all source volumes offline.</li> <li>- Create target volume clone pairs, if necessary.</li> </ul>

KeyName	Type	Description	Range	Default Value
				- If the source volumes have clone pairs, delete them.  If you want to cancel the migration process and return to the state before migration , submit the "Clean up Online Migration Pair" service.
deleteHostGroupOption	boolean	Select the checkbox to delete the Host Group.	true or false	false
deleteVolumeOption	boolean	Select the checkbox to delete the Volume.	true or false	false
storage_lock_total_wait_time	integer	Specifies the lock waiting time upper limit when acquiring the storage lock while change the configuration.	305 - 630720000	604800
setHMO88Auto	boolean	Specifies whether to set Host Mode Option 88 to Host Groups automatically.	true or false	true

KeyName	Type	Description	Range	Default Value
addMigrationProgressToNotes	boolean	Specifies whether to automatically add the migration progress to the Notes of the Create Online Migration Pair task. If you enable this feature, create the Migrate Data for Online Migration Pair and Clean up Online Migration Pair services in the same service group as the Create Online Migration Pair service.	true or false	false
provisioning.fabricSetting.enabled	boolean	Specifying True enables fabric information collection functionality.	true or false	false
fabricConnectionType	string	Specify the fabric type, either FOS_PrimarySwitch or DCNM to filter the Category in Connections.	FOS_PrimarySwitch, DCNM	FOS_PrimarySwitch
provisioning.fabricSetting.connections	file	Specify the connection defined in the Web Service Connections on the Administration Tab. If this value is omitted, the system uses all connections that are defined for the product name listed in the Web Service Connections.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
provisioning.fabricSetting.fabrics	string	Specify the fabric name. Separate multiple values by commas. If omitted, all fabrics defined as FOS_PrimarySwitch or DCNM in Connections will be used.	-	-
provisioning.fabricSetting.usingExistingZone	boolean	Specifies whether to select a predefined zone or any connectable path. If you specify True, the system selects paths within the range of the existing active Zone setting. If you specify False, the system selects connectable paths regardless of the existing Zone setting.	true or false	false
provisioning.fabricSetting.hops.restriction	boolean	Determines whether the service will fail if there is no path that matches the specified collection range.	true or false	false
provisioning.fabricSetting.hops.range	integer	When using the Host Restriction option, specify the collection range by the number of hops.	-	0
provisioning.zoneSetting.enabled	boolean	Specify True to enable the modify zone settings functionality.	true or false	false

KeyName	Type	Description	Range	Default Value
provisioning.zoneSetting.useExistingZoneAliases	boolean	Specify True to use predefined Zone Aliases regardless of the naming conventions the user specifies. If you specify False, the system selects Zone Aliases that follow the naming conventions. In either case, if there are no existing Zone Aliases, the system creates new Zone Aliases that follow the naming conventions.	true or false	false
provisioning.zoneSetting.updateActiveZoneConfiguration	boolean	Specify True to add a Zone to the active Zone Configuration.	true or false	true
provisioning.zoneSetting.zoneConfigurationName	string	To add a zone to a Zone Configuration other than the active configuration, specify the name of the Zone Configuration in which to add the zone.	-	-
provisioning.zoneSetting.namingScript.zone	file	Specify the naming convention script that determines the Zone name for the path.	-	See the following provisioning.zoneSetting.namingScript.zone example

KeyName	Type	Description	Range	Default Value
provisioning.zoneSetting.namingScript.hostZoneAlias	file	Specify the naming convention script that determines the Zone Alias name for the host port.	-	See the following provisioning.zoneSetting.namingScript.hostZoneAlias example
provisioning.zoneSetting.namingScript.storageZoneAlias	file	Specify the zone information.	-	See the following provisioning.zoneSetting.namingScript.storageZoneAlias example

## File type property list

Table 359 SourceSAConnection

Data nesting information	Description	Range
value		
productName	Category	-
name	Name	-
ipAddress	IP address/host name	-
port	Port	-
protocol	Protocol	-
userID	User ID	-
status	Status	-
connectedTime	Connected time	-



Table 360 SourceHostsFilter

Data nesting information		Description	Range
value*			
	key	Key	-
	operator	Operator	-
	value	Value	-
*: Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 361 SourceHosts

Data nesting information		Description	Range
value			
	serverId	ID	-
	serverName	Name	-
	description	Description	-
	ipAddress	IP address	-
	protocol	Protocol	-
	wwpns	WWN	-
	iscsiNames	iSCSI name	-
	osType	OS type	-
	serverGroupName	Server group name	-
	chapUser	CHAP User	-
	attachedStorageSystem	Attached storage system	-
	attachedVirtualStorageMachine	Attached virtual storage machine	-
	attachedVolumeCount	Attached volume count	-
	storagePortIds	Port ID	-

**Table 362 SourceConfigurationManagerConnection,  
TargetConfigurationManagerConnection**

Data nesting information		Description	Range
value			
	productName	Category	-
	name	Name	-
	ipAddress	IP address/host name	-
	port	Port	-
	protocol	Protocol	-
	userID	User ID	-
	status	Status	-
	connectedTime	Connected time	-

**Table 363 SourceStorageSystem**

Data nesting information		Description	Range
value			
	storageDeviceId	Storage device ID	-
	model	Model	-
	serialNumber	Serial number	-
	svplp	SVP IP address	-

**Table 364 SourceVolumesFilter**

Data nesting information		Description	Range
value			
	resourceGroupFilter	Source volume filter (resource group)	-
	value_RG	Resource group name	-
	volumeFilters	Source volume filter	-
	key	Key	-
	operator	Operator	-

Data nesting information		Description	Range
	value	Value	-

Table 365 SourceVolumes

Data nesting information		Description	Range
	value		
	storageDeviceId	Storage Device ID	-
	ldevId	LDEV ID	-
	label	Label	-
	byteFormatCapacity	Capacity	-
	blockCapacity	Block capacity	-
	poolId	Pool ID	-
	portIds	Port ID	-
	hostGroupNames	Host group name	-
	iSCSINames	iSCSI name	-
	dataReductionMode	Data reduction mode	-
	resourceGroupId	Resource group ID	-
	virtualStorageMachine	Virtual storage machine	-

Table 366 TargetStorageSystem

Data nesting information		Description	Range
	value		
	storageDeviceId	Storage device ID	-
	model	Model	-
	serialNumber	Serial number	-
	svplp	SVP IP address	-
	compressionAcceleration		"available", "unavailable"

Table 367 TargetResourceGroup

Data nesting information		Description	Range
value			
	resourceGroupName	Resource group name	-
	resourceGroupId	Resource group ID	-
	virtualStorageMachine	Virtual storage machine	-
	virtualStorageId	Virtual storage system ID	-
	virtualModel	Virtual model	-
	virtualSerialNumber	Virtual serial number	-
	sourceVirtualStorageMachine	Source virtual storage machine	-

Table 368 TargetPool

Data nesting information		Description	Range
value			
	poolId	Pool ID	-
	poolName	Pool name	-
	poolType	Pool type	-
	usedCapacityRate	Used capacity rate (%)	-
	availableVolumeCapacity	Available capacity	-
	totalPoolCapacity	Total capacity	-
	numOfLdevs	Number of volumes	-

Table 369 PortMappings

Data nesting information		Description	Range
value*			
	sourcePort	Source storage port	-
	targetPort	Target storage ports	-
*: Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 370 HostModeHostModeOptions

HostModeHostModeOptions		Description	Range
value			
	host	Host	-
	hostMode	Host mode	-
	hostModeOption	Host mode options	-

Table 371 HostMappings

HostMappings		Description	Range
value			
	hostWWN	Host WWN/iSCSI name	-
	targetPort	Target storage ports	-

Table 372 QuorumDisk

Data nesting information		Description	Range
value			
	quorumDiskId	Quorum Disk ID	-
	serialNumber	Serial number	-
	storageType	Storage type	-
	primaryStatus	Primary status	-
	secondaryStatus	Secondary status	-

Table 373 provisioning.fabricSetting.connections

Data nesting information		Description	Range
value			
	productName	Category	-
	name	Name	-
	ipAddress	IP Address/Host Name	-
	port	Port	-

Data nesting information		Description	Range
	protocol	Protocol	-
	userID	User ID	-
	status	Status	-
	connectedTime	Connected Time	-

### provisioning.zoneSetting.namingScript examples

#### provisioning.zoneSetting.namingScript.zone example

```
function nameZone(args) {
  var name = args.hostName;
  if (name === null || !(typeof (name) == "string" || name instanceof String))
  { throw new Error(
    "Host name must be a string: " + name); }
  name = name.replace(/^[A-Za-z0-9_]/g, '_');

  var wwn = args.hostPortWorldWideName;
  if (wwn === null || !(typeof (wwn) == "string" || wwn instanceof String)) { throw
new Error(
  "Host port WWN must be a string: " + wwn); }
  name = name + '_' + wwn.replace(/:/g, '_').slice(-4);

  if (/^[A-Z]/i.test(name) === false) {
    name = "IP_" + name;}

  var SERVERALIAS = name;

  var serial = args.storageSystemSerialNumber;
  if (serial === null || !(typeof (serial) == "string" || serial instanceof String))
  { throw new Error(
    "Storage System Serial Number must be a string: " + serial); }

  name = 'SN' + serial;
  name = name.replace(/^[A-Za-z0-9_]/g, '_');

  var PortName = args.storagePortName;
  if (PortName === null || !(typeof (PortName) == "string" || PortName instanceof
String)) { throw new Error(
    "Port Name must be a string: " + PortName); }
  PortName = PortName.replace(/^[A-Za-z0-9_]/g, '_');

  name = name + '_' + PortName;

  var ARRAYALIAS = name;
}
```

```

var name1 = SERVERALIAS + '_' + ARRAYALIAS;

if (name1.length > 64) { throw new Error(
    "Zone name must be within 64 characters: " + name1); }

return name1;
}

name = name.replace(/^[A-Za-z0-9_]/g, '_');
var PortName = args.storagePortName
if (PortName === null || !(typeof(PortName) == "string" || PortName instanceof
String)) {
    throw new Error("Port Name must be a string: " + PortName);
}
PortName = PortName.replace(/^[A-Za-z0-9_]/g, '_');
name = name + '_' + PortName; if (name.length > 64) {
    throw new Error("Zone alias name must be within 64 characters: " + name);
}
if (/^[A-Z]/i.test(name) == false) {
    throw new Error("Zone alias name must start with a alphabet: " + name);
}
var ARRAYALIAS = name; var name1 = SERVERALIAS + '_' + ARRAYALIAS;
if (name1.length > 64) {
    throw new Error("Zone alias name must be within 64 characters: " + name1);
}
if (/^[A-Z]/i.test(name1) == false) {
    throw new Error("Zone alias name must start with a alphabet: " + name1);
}
return name1;
})

```

### provisioning.zoneSetting.namingScript.hostZoneAlias example

```

function nameHostZoneAlias(args) {
    var name = args.hostName;
    if (name === null || !(typeof (name) == "string" || name instanceof String))
    { throw new Error(
        "Host name must be a string: " + name); }
    name = name.replace(/^[A-Za-z0-9_]/g, '_');

    var wwn = args.hostPortWorldWideName;
    if (wwn === null || !(typeof (wwn) == "string" || wwn instanceof String)) { throw
new Error(
        "Host port WWN must be a string: " + wwn); }
    name = name + '_' + wwn.replace(/:/g, '').slice(-4);

    if (/^[A-Z]/i.test(name) === false) {
        name = "IP_" + name;}
    if (name.length > 64) { throw new Error(
        "Zone alias name must be within 64 characters: " + name); }
}

```

```

return name;
}

```

### provisioning.zoneSetting.namingScript.storageZoneAlias example

```

function nameStorageZoneAlias(args) {
  var serial = args.storageSystemSerialNumber;
  if (serial === null || !(typeof (serial) == "string" || serial instanceof String))
  { throw new Error(
    "Storage System Serial Number must be a string: " + serial); }

  var PortName = args.storagePortName;
  if (PortName === null || !(typeof (PortName) == "string" || PortName instanceof
String)) { throw new Error(
    "Port Name must be a string: " + PortName); }
  PortName = PortName.replace(/[^A-Za-z0-9_]/g, '_');

  var name = 'SN' + serial.replace(/:/g, '') + '_' + PortName;
  if (name.length > 64) { throw new Error(
    "Zone alias name must be within 64 characters: " + name); }
  return name;
}
name = name.replace(/[^A-Za-z0-9_]/g, '_');
}
var serial = args.storageSystemSerialNumber;
if (serial === null || !(typeof (serial) == "string" || serial instanceof String)) {
throw new Error("Storage System Serial Number must be a string: " + serial);
}
var PortName = args.storagePortName
if (PortName === null || !(typeof (PortName) == "string" || PortName instanceof
String)) {
throw new Error("Port Name must be a string: "+ PortName);
}
PortName = PortName.replace(/[^A-Za-z0-9_]/g, '_');
if(name){ name = name + '_' + serial.replace(/:/g, '').slice(-4) + '_' + PortName;
}
else {
name = 'SN' + serial.replace(/:/g, '') + '_' + PortName;
}
if (name.length > 64) {
throw new Error("Zone alias name must be within 64 characters: " + name);
}
if (/^[A-Z]/i.test(name) == false) {
throw new Error("Zone alias name must start with a alphabet: " + name);
} return name;
}
}

```



## Create Online Migration Pair (submit)

KeyName	Type	Description	Range	Default Value
SourceSelection	string	Specify the source resource as volumes or hosts.	Select Hosts, Select Volumes	Select Hosts
SourceSAConnection	file	Specify the source storage management connection for selecting migration source hosts.	See the following File type property list	-
SourceHostsFilter	file	Use the filters to display only the source hosts that match the specified criteria.	See the following File type property list	-
JoinHostFiltersBy	string	Use the "and" and the "or" operators to join multiple filters.	"and", "or"	and
HostRowsPerPage	integer	Use the filter to display only the specified number of source hosts.	50, 100, 200, 500, 1000	50
HostCurrentPage	integer	Use the filter to display only the specified page number of the rows per page number of source hosts.	-	1
SourceHosts	file	Specify the source hosts.	See the following File type property list	-
SourceConfigurationManagerConnection	file	Specify the source Configuration Manager Connection for migration.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
SourceStorageSystem	file	Specify the source storage system for migration.	See the following File type property list	-
SourceVolumesFilter	file	Use the filters to display only the source volumes that match the specified criteria.	See the following File type property list	{"resourceGroupFilter":false,"value_RG":"","volumeFilters":[]}
JoinFiltersBy	string	Use the "and" and the "or" operators to join multiple filters.	"and", "or"	and
VolumeRowsPerPage	integer	Use the filter to display only the specified number of source volumes.	50, 100, 200, 500, 1000	200
VolumeCurrentPage	integer	Use the filter to display only the specified page number of the rows per page number of source volumes.	-	1
SourceVolumes	file	Specify the source volumes.	See the following File type property list	-
TargetConfigurationManagerConnection	file	Specify the target Configuration Manager connection for migration.	See the following File type property list	-
TargetStorageSystem	file	Specify the target storage system for migration.	See the following File type property list	-
TargetResourceGroup	file	Specify the target resource group.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
TargetPool	file	Specify the target pool.	See the following File type property list	-
LdevIdRangeStartsFrom	integer	Search for undefined LDEV IDs and allocate target volumes in order from the specified physical LDEV ID. If a physical LDEV ID is not specified, volumes with the same LDEV ID are allocated first.	0-65279	-
LdevIdRangeEndsAt	integer	Specify the last LDEV ID in the LDEV ID range. If the last LDEV ID is not specified, LDEV IDs are used up to the storage system maximum.	0-65279	-
ResourceGroupForPreferentialUseWithLdevIds	string	Specify the resource group to use first when searching for available physical LDEV IDs. If there are not enough available LDEV IDs in the resource group with the specified option, LDEV IDs in the resource group with the unspecified option are also used.	"meta_resource", "Selected Target Resource Group"	meta_resource

KeyName	Type	Description	Range	Default Value
Mappings	string	Specify the Storage Port Mappings or Host Mappings.	Storage Port Mappings, Host Mappings	Storage Port Mappings
PortMappings	file	Specify mappings for the source and target storage ports. Based on the mappings, the system configures the I/O path between the host and the target storage ports.	See the following File type property list	-
HostModeHostModeOptions	file	Specify the parameters for creating new Host Mode and Host Mode Options. If a host group/iSCSI Target already exists at the migration target, the existing value will not be changed.	See the following File type property list	-
HostMappings	file	Specify individual migration target ports for each host port (HBA). For hosts or clusters that use the same storage port on the migration source, you can configure each host port to use different storage ports on the migration target.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
CapacitySavingSettingsForTargetVolumes	string	<p>Specify how to apply Capacity Saving settings to target volumes.</p> <p>If "Same as source volumes" is specified, the settings will be applied in the same way as the Capacity Saving settings for source volumes.</p> <p>If "Specify Capacity Saving settings" is specified, the settings selected in the following properties will be applied.</p> <p>If you select the storage system with "Compression Acceleration" available in the "Target Storage System", then Compression Acceleration is enabled when the capacity saving function is enabled.</p> <p>If you select a storage system where "Compression Acceleration" is unavailable, then Compression Acceleration is disabled.</p>	Same as source volumes, Specify capacity saving settings	Same as source volumes

KeyName	Type	Description	Range	Default Value
CapacitySavingFunction	string	Specify the Capacity Saving Function for target volumes.  Refer to your storage system product documentation for the optimal setting.	None, Compression, Deduplication and Compression	None
CapacitySavingMode	string	Specify the Capacity Saving Mode for target volumes.  Refer to your storage system product documentation for the optimal setting.	Inline mode, Post-process mode	Post-process mode

KeyName	Type	Description	Range	Default Value
SetCapacitySaving	string	<p>Specify when to apply capacity saving settings to target volumes.</p> <p>If "Before migration" is specified, the settings are applied before copying from the source volumes to the target volumes. Capacity saving begins at the start of migration, but the time required for migration increases.</p> <p>If "After migration" is specified, the settings are applied after copying from the source volumes to the target volumes is complete. The migration time will not increase, but capacity saving will begin after the migration is complete.</p>	"Before migration", "After migration"	Before migration
CopyPace	integer	Specify the copy speed. The larger the value you specify, the faster the copy speed will be.	3, 8, 15	8
PathGroupIdSelection	string	Specify whether to select the path group ID manually.	Auto Selection, Manual Selection	Auto Selection

KeyName	Type	Description	Range	Default Value
PathGroupld	string	Specify the path group ID.	00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B, 0C, 0D, 0E, 0F, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 1A, 1B, 1C, 1D, 1E, 1F, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 2A, 2B, 2C, 2D, 2E, 2F, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 3A, 3B, 3C, 3D, 3E, 3F, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 4A, 4B, 4C, 4D, 4E, 4F, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 5A, 5B, 5C, 5D, 5E, 5F, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 6A, 6B, 6C, 6D, 6E, 6F, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 7A, 7B, 7C, 7D, 7E, 7F, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 8A, 8B, 8C, 8D, 8E, 8F, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 9A, 9B, 9C, 9D, 9E, 9F, A0, A1, A2, A3, A4, A5, A6, A7, A8, A9, AA, AB, AC, AD, AE, AF, B0, B1, B2, B3, B4, B5, B6, B7, B8, B9, BA, BB, BC, BD, BE, BF, C0, C1, C2, C3, C4, C5, C6, C7, C8, C9, CA, CB,	00



KeyName	Type	Description	Range	Default Value
			CC, CD, CE, CF, D0, D1, D2, D3, D4, D5, D6, D7, D8, D9, DA, DB, DC, DD, DE, DF, E0, E1, E2, E3, E4, E5, E6, E7, E8, E9, EA, EB, EC, ED, EE, EF, F0, F1, F2, F3, F4, F5, F6, F7, F8, F9, FA, FB, FC, FD, FE, FF	
UseDisklessQuorum	boolean	Specify whether to use automatic diskless volume creation.	true or false	true
QuorumDisk	file	Specify the Quorum disk.	See the following File type property list	-
RunZeroPageReclaim	boolean	Specify whether to run zero page reclaim when the online migration is completed.	true or false	true
mailsettings.enable	boolean	Specify whether to send an email notification when the migration target volume path allocation is complete. This enables you to confirm the path allocation listed in the email, then bring it online.	true or false	false
mailsettings.to	string	Specifies the primary (To) email notification addresses.	-	-

KeyName	Type	Description	Range	Default Value
mailsettings.cc	string	Specify additional Cc email notification addresses.	-	-
mailsettings.bcc	string	Specify additional Bcc email notification addresses.	-	-
mailsettings.subject	string	Specify the email subject.	-	Migration task information . (Waiting for Action.)
mailsettings.body	file	Specify the text of the email body.	-	The "Create Online Migration Pair" service task is complete. %taskDetails% Do the following, and then submit the "Migrate Data for Online Migration Pair" service. Confirm the LUN paths of the target volumes in the Task Details dialog box.

KeyName	Type	Description	Range	Default Value
				<ul style="list-style-type: none"> <li>- On the target hosts, bring all target volumes online.</li> <li>- Take all source volumes offline.</li> <li>- Create target volume clone pairs, if necessary.</li> <li>- If the source volumes have clone pairs, delete them.</li> </ul> <p>If you want to cancel the migration process and return to the state before migration, submit the "Clean up Online Migration Pair" service.</p>
deleteHostGroupOption	boolean	Select the check box to delete the host group.	true or false	false

KeyName	Type	Description	Range	Default Value
deleteVolumeOption	boolean	Select the check box to delete the volume.	true or false	false
setHMO88Auto	boolean	Specifies whether to set Host Mode Option 88 to Host Groups automatically.	true or false	true
addMigrationProgressTo Notes	boolean	Specifies whether to automatically add the migration progress to the Notes of the Create Online Migration Pair task. If you enable this feature, create the Migrate Data for Online Migration Pair and Clean up Online Migration Pair services in the same service group as the Create Online Migration Pair service.	true or false	false

## File type property list

Table 374 SourceSAConnection

Data nesting information		Description	Range
value			
	productName	Category	-
	name	Name	-
	ipAddress	IP address/host name	-
	port	Port	-

Data nesting information		Description	Range
	protocol	Protocol	-
	userID	User ID	-
	status	Status	-
	connectedTime	Connected time	-

Table 375 SourceHostsFilter

Data nesting information		Description	Range
value*			
	key	Key	-
	operator	Operator	-
	value	Value	-

\*: Repeatable. Repeatable items must be repeated and must include all lower layer tags.

Table 376 SourceHosts

Data nesting information		Description	Range
value			
	serverId	ID	-
	serverName	Name	-
	description	Description	-
	ipAddress	IP address	-
	protocol	Protocol	-
	wwpns	WWN	-
	iscsiNames	iSCSI name	-
	osType	OS type	-
	serverGroupName	Server group name	-
	chapUser	CHAP user	-
	attachedStorageSystem	Attached storage system	-
	attachedVirtualStorageMachine	Attached virtual storage machine	-

Data nesting information		Description	Range
	attachedVolumeCount	Attached volume count	-
	storagePortIds	Port ID	-

**Table 377 SourceConfigurationManagerConnection,  
TargetConfigurationManagerConnection**

Data nesting information		Description	Range
value			
	productName	Category	-
	name	Name	-
	ipAddress	IP address/host name	-
	port	Port	-
	protocol	Protocol	-
	userID	User ID	-
	status	Status	-
	connectedTime	Connected time	-

**Table 378 SourceStorageSystem**

Data nesting information		Description	Range
value			
	storageDeviceId	Storage device ID	-
	model	Model	-
	serialNumber	Serial number	-
	svplp	SVP IP address	-

**Table 379 SourceVolumesFilter**

Data nesting information		Description	Range
value			
	resourceGroupFilter	Source volume filter (resource group)	-

Data nesting information		Description	Range
	value_RG	Resource group name	-
	volumeFilters	Source volume filter	-
	key	Key	-
	operator	Operator	-
	value	Value	-

Table 380 SourceVolumes

Data nesting information		Description	Range
value			
	storageDeviceId	Storage device ID	-
	ldevId	LDEV ID	-
	label	Label	-
	byteFormatCapacity	Capacity	-
	blockCapacity	Block capacity	-
	poolId	Pool ID	-
	portIds	Port ID	-
	hostGroupNames	Host group name	-
	iSCSINames	iSCSI Name	-
	dataReductionMode	Data reduction mode	-
	resourceGroupId	Resource group ID	-
	virtualStorageMachine	Virtual storage machine	-

Table 381 TargetStorageSystem

Data nesting information		Description	Range
value			
	storageDeviceId	Storage device ID	-
	model	Model	-
	serialNumber	Serial number	-

Data nesting information		Description	Range
	svplp	SVP IP address	-
	compressionAcceleration		"available", "unavailable"

Table 382 TargetResourceGroup

Data nesting information		Description	Range
value			
	resourceGroupName	Resource group name	-
	resourceGroupId	Resource group ID	-
	virtualStorageMachine	Virtual storage machine	-
	virtualStorageId	Virtual storage system ID	-
	virtualModel	Virtual model	-
	virtualSerialNumber	Virtual serial number	-
	sourceVirtualStorageMachine	Source virtual storage machine	-

Table 383 TargetPool

Data nesting information		Description	Range
value			
	poolId	Pool ID	-
	poolName	Pool name	-
	poolType	Pool type	-
	usedCapacityRate	Used capacity rate (%)	-
	availableVolumeCapacity	Available capacity	-
	totalPoolCapacity	Total capacity	-
	numOfLdevs	Number of volumes	-



**Table 384 PortMappings**

Data nesting information		Description	Range
value*			
	sourcePort	Source storage port	-
	targetPort	Target storage ports	-
*: Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

**Table 385 HostModeHostModeOptions**

HostModeHostModeOptions		Description	Range
value			
	host	Host	-
	hostMode	Host mode	-
	hostModeOption	Host mode options	-

**Table 386 HostMappings**

HostMappings		Description	Range
value			
	hostWWN	Host WWN/iSCSI name	-
	targetPort	Target storage ports	-

**Table 387 QuorumDisk**

Data nesting information		Description	Range
value			
	QuorumDiskId	Quorum disk ID	-
	serialNumber	Serial number	-
	storageType	Storage type	-
	primaryStatus	Primary status	-
	secondaryStatus	Secondary status	-

## Create Online Migration Pair (task details)

KeyName	type	Description	Range
message	File	Describes the required user actions after the Create Online Migration Pair task is completed.	-
PrimarySite_PrimaryVolumesLUNPathConfigurationInformation	File	Stores LUN path information for the Source Site from the specified volumes.	See the following File type property list
SecondarySite_SecondaryVolumesLUNPathConfigurationInformation	File	Stores allocated LUN path information for the target site based on the volume allocation results.	See the following File type property list
CopyGroupConfigurationInformation	File	Stores copy group information.	See the following File type property list
provisioning.taskResult.createdZoneConfigurations	File	Stores the new zone configuration.	See the following File type property list
provisioning.taskResult.createdZones	File	Stores the new zone information.	See the following File type property list
provisioning.taskResult.createdZoneAliases	File	Stores the new zone aliases.	See the following File type property list
provisioning.taskResult.updatedZoneConfigurations	File	Stores the updated zone configuration.	See the following File type property list
provisioning.taskResult.updatedZones	File	Stores the updated zone information.	See the following File type property list
provisioning.taskResult.updatedZoneAliases	File	Stores the updated zone aliases.	See the following File type property list

## File type property list

**Table 388 PrimarySite\_PrimaryVolumesLUNPathConfigurationInformation,  
SecondarySite\_SecondaryVolumesLUNPathConfigurationInformation**

Data nesting information	Description	Range
value		
hostPort	Host port	-
storagePort	Storage port	-
lun	LUN	-
portType	Port type	-
capacity	Capacity	-
ldevId	Volume	-
hostGroupNameOrIscsiTarget	Host group name/iSCSI target alias	-
iscsiTargetName	iSCSI target name	-
model	Model	-
serialNumber	Serial number	-
ldevLabel	LDEV Label	-
resourceGroupName	Resource group	-
virtualLdevId	Virtual LDEV ID	-
virtualModel	Virtual model	-
virtualSerialNumber	Virtual serial number	-
configurationManager	Configuration Manager	-
poolId	Pool	-
tcpPort	TCP port	-
ipv4Address	IPv4 address	-
ipv6LinkLocalAddress	IPv6 link local address	-
ipv6GlobalAddress	IPv6 global address	-

**Table 389 CopyGroupConfigurationInformation**

Data nesting information	Description	Range
value		

Data nesting information		Description	Range
	muNumber	MU number	-
	quorumDiskId	Quorum disk ID	-
	siteInformation*	Site information	-
	primaryOrSecondary	Primary/secondary	-
	model	Model	-
	serialNumber	Serial number	-
	virtualSerialNumber	Virtual serial number	-
	configurationManager	Configuration Manager	-
	createdCopyPairs*		-
	primaryLdevId	Primary volume	-
	primaryModel	Primary model	-
	primarySerialNumber	Primary serial number	-
	secondaryLdevId	Secondary volume	-
	secondaryModel	Secondary model	-
	secondarySerialNumber	Secondary serial number	-
	virtualSerialNumber	Virtual serial number	-
	fenceLevel	Fence level	-
	primaryConfigurationManager	Primary Configuration Manager	-
	secondaryConfigurationManager	Secondary Configuration Manager	-
* Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 390 provisioning.taskResult.createdZoneConfigurations

Data nesting information		Description	Range
	values*	List of new zone configurations	-
	name	Name of new zone configuration name	-
	bnaname	Name of Switch Management Server/ FOS_PrimarySwitch	-
	fabricName	Name of fabric where the settings exist	-

Data nesting information		Description	Range
	zoneNames!	Zone to be added to the created zone configuration	-
* Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 391 provisioning.taskResult.createdZones

Data nesting information		Description	Range
values*		List of new zones	-
	name	Name of new zone	-
	bnaname	Name of Switch Management Server/ FOS_PrimarySwitch	-
	fabricName	Name of fabric where the settings exist	-
	aliasNames!	Zone alias to be added to the created zone	-
	memberNames!	WWN of the port added to the created zone	-
* Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 392 provisioning.taskResult.createdZoneAliases

Data nesting information		Description	Range
values*		List of new zone aliases	-
	name	Name of new zone alias	-
	bnaname	Name of Switch Management Server/ FOS_PrimarySwitch	-
	fabricName	Name of fabric where the settings exist	-
	memberNames!	WWN of the port added to the created zone alias	-
* Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 393 provisioning.taskResult.updatedZoneConfigurations

Data nesting information		Description	Range
values*		List of zone configurations where the settings were updated	-

Data nesting information		Description	Range
	name	Name of zone configuration where the settings were updated	-
	bnaname	Name of Switch Management Server/ FOS_PrimarySwitch	-
	fabricName	Name of fabric where the settings exist	-
	zoneNames*	Name of added zone	-
* Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 394 provisioning.taskResult.updatedZones

Data nesting information		Description	Range
values*		List of zones where the settings were updated	-
	name	Name of zone where the settings were updated.	-
	bnaname	Name of Switch Management Server/ FOS_PrimarySwitch	-
	fabricName	Name of fabric where the settings exist	-
	aliasNames*	Name of added zone alias	-
	memberNames*	WWN of added port	-
* Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 395 provisioning.taskResult.updatedZoneAliases

Data nesting information		Description	Range
values*		List of zone aliases where the settings were updated	-
	name	Name of zone alias where the settings were updated	-
	bnaname	Name of Switch Management Server/ FOS_PrimarySwitch	-
	fabricName	Name of fabric where the settings exist	-
	memberNames	WWN of added port	-
* Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

## Create Online Migration Pairs for Multiple Hosts service properties

Use the following properties to modify or create values for the Create Online Migration Pairs for Multiple Hosts service.

### Create Online Migration Pairs for Multiple Hosts (edit)

KeyName	Type	Description	Range	Default Value
SourceSACconnection	file	Specify the Source Ops Center Administrator Connection for selecting migration source hosts.	See the following File type property list	-
SourceHostsFilter	file	Use the filters to display only the source hosts that match the specified criteria.	See the following File type property list	-
JoinHostFiltersBy	string	Use the "and" and the "or" operators to join multiple filters.	"and", "or"	and
HostRowsPerPage	integer	Use the filter to display only the specified number of source hosts.	50, 100, 200, 500, 1000	50
HostCurrentPage	integer	Use the filter to display only the specified page number of the rows per page number of source hosts.	-	1
SourceHosts	file	Specify the source hosts.	See the following File type property list	-
SourceConfigurationManagerConnection	file	Specify the Source Configuration Manager Connection for migration.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
TargetConfigurationManagerConnection	file	Specify the Target Configuration Manager Connection for migration.	See the following File type property list	-
TargetStorageSystem	file	Specify the Target Storage System for migration.	See the following File type property list	-
TargetResourceGroup	file	Specify the Target Resource Group.	See the following File type property list	-
TargetPool	file	Specify the Target Pool.	See the following File type property list	-
LdevIdRangeStartsFrom	integer	Search for undefined LDEV IDs and allocate target volumes in order from the specified physical LDEV ID. If a physical LDEV ID is not specified, volumes with the same LDEV ID are allocated first.	0-65279	-
LdevIdRangeEndsAt	integer	Specify the last LDEV ID in the LDEV ID range. If the last LDEV ID is not specified, LDEV IDs are used up to the storage system maximum.	0-65279	-



KeyName	Type	Description	Range	Default Value
ResourceGroupForPreferentialUseWithLdevIds	string	Specify the resource group to use first when searching for available physical LDEV IDs. If there are not enough available LDEV IDs in the resource group with the specified option, LDEV IDs in the resource group with the unspecified option are also used.	"meta_resource", "Selected Target Resource Group"	meta_resource
PortMappings	file	Specify mappings for the source and target storage ports. Based on the mappings, the system configures the I/O path between the host and the target storage port.	See the following File type property list	-
CapacitySavingSettingsForTargetVolumes	string	Specify how to apply Capacity Saving settings to target volumes.  If "Same as source volumes" is specified, the settings will be applied in the same way as the Capacity Saving settings for source volumes.  If "Specify Capacity Saving settings" is specified, the settings selected in the following properties will be applied.	"Same as source volumes", "Specify Capacity Saving settings"	Same as source volumes

KeyName	Type	Description	Range	Default Value
		<p>If you select the storage system with "Compression Acceleration" available in the "Target Storage System", then Compression Acceleration is enabled when the capacity saving function is enabled.</p> <p>If you select a storage system where "Compression Acceleration" is unavailable, then Compression Acceleration is disabled.</p>		
CapacitySavingFunction	string	Specify the Capacity Saving Function for target volumes.	"None", "Compression", "Deduplication and Compression"	None
CapacitySavingMode	string	Specify the Capacity Saving Mode for target volumes.	"Inline mode", "Post-process mode"	Post-process mode

KeyName	Type	Description	Range	Default Value
SetCapacitySaving	string	Specify when to apply capacity saving settings to target volumes.  If "Before migration" is specified, the settings are applied before copying from the source volumes to the target volumes. Capacity saving begins at the start of migration, but the time required for migration increases.  If "After migration" is specified, the settings are applied after copying from the source volumes to the target volumes is complete. The migration time will not increase, but capacity saving will begin after the migration is complete.	"Before migration", "After migration"	Before migration
CopyPace	integer	Specify the Copy Pace (Slow:3, Medium:8, or Fast:15).	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15	8
PathGroupIDSelection	string	Specify whether to manually select the path group ID.	"Auto Selection", "Manual Selection"	Auto Selection

KeyName	Type	Description	Range	Default Value
PathGroupId	string	Specify the path group ID.	00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B, 0C, 0D, 0E, 0F, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 1A, 1B, 1C, 1D, 1E, 1F, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 2A, 2B, 2C, 2D, 2E, 2F, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 3A, 3B, 3C, 3D, 3E, 3F, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 4A, 4B, 4C, 4D, 4E, 4F, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 5A, 5B, 5C, 5D, 5E, 5F, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 6A, 6B, 6C, 6D, 6E, 6F, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 7A, 7B, 7C, 7D, 7E, 7F, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 8A, 8B, 8C, 8D, 8E, 8F, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 9A, 9B, 9C, 9D, 9E, 9F, A0, A1, A2, A3, A4, A5, A6, A7, A8, A9, AA, AB, AC, AD, AE, AF, B0, B1, B2, B3, B4, B5, B6, B7,	00

KeyName	Type	Description	Range	Default Value
			B8, B9, BA, BB, BC, BD, BE, BF, C0, C1, C2, C3, C4, C5, C6, C7, C8, C9, CA, CB, CC, CD, CE, CF, D0, D1, D2, D3, D4, D5, D6, D7, D8, D9, DA, DB, DC, DD, DE, DF, E0, E1, E2, E3, E4, E5, E6, E7, E8, E9, EA, EB, EC, ED, EE, EF, F0, F1, F2, F3, F4, F5, F6, F7, F8, F9, FA, FB, FC, FD, FE, FF	
UseDisklessQuorum	boolean	Specify whether to use diskless quorum.	true or false	true
QuorumDisk	file	Specify the quorum disk.	See the following File type property list	-
RunZeroPageReclaim	boolean	Specify whether to run zero page reclaim when the online migration is completed.	true or false	true
mailsettings.enable	boolean	Specifies whether to send an email notification when the migration target volume path allocation is complete. This enables you to confirm the path allocation listed in the email, then bring it online.	true or false	false

KeyName	Type	Description	Range	Default Value
mailsettings.to	string	Specifies the primary (TO) email notification addresses.	-	-
mailsettings.cc	string	Specifies additional CC email notification addresses.	-	-
mailsettings.bcc	string	Specifies additional BCC email notification addresses.	-	-
mailsettings.subject	string	Specifies the email subject.	-	Migration task information. (Waiting for Action.)
mailsettings.body	file	Specifies the text of the email body.	-	The "Create Online Migration Pair" service task is complete. %taskDetails%

KeyName	Type	Description	Range	Default Value
				<p>Do the following, and then submit the "Migrate Data for Online Migration Pair" service. Confirm the LUN paths of the target volumes in the Task Details dialog box.</p> <ul style="list-style-type: none"> <li>- On the target hosts, bring all target volumes online.</li> <li>- Take all source volumes offline.</li> <li>- Create target volume clone pairs, if necessary.</li> </ul>

KeyName	Type	Description	Range	Default Value
				- If the source volumes have clone pairs, delete them.  If you want to cancel the migration process and return to the state before migration , submit the "Clean up Online Migration Pair" service.
deleteHostGroupOption	boolean	Select the checkbox to delete the Host Group.	true or false	false
deleteVolumeOption	boolean	Select the checkbox to delete the Volume.	true or false	false
storage_lock_total_wait_time	integer	Specifies the lock waiting time upper limit when acquiring the storage lock while change the configuration.	305 - 630720000	604800
setHMO88Auto	boolean	Specifies whether to set Host Mode Option 88 to Host Groups automatically.	true or false	true



KeyName	Type	Description	Range	Default Value
addMigrationProgressToNotes	boolean	Specifies whether to automatically add the migration progress to the Notes of the Create Online Migration Pair task. If you enable this feature, create the Migrate Data for Online Migration Pair and Clean up Online Migration Pair services in the same service group as the Create Online Migration Pairs for Multiple Hosts service.	true or false	false
provisioning.fabricSetting.enabled	boolean	Specifying True enables fabric information collection functionality.	true or false	false
fabricConnectionType	string	Specify the fabric type, either FOS_PrimarySwitch or DCNM to filter the Category in Connections.	FOS_PrimarySwitch, DCNM	FOS_PrimarySwitch
provisioning.fabricSetting.connections	file	Specify the connection defined in the Web Service Connections on the Administration Tab. If this value is omitted, the system uses all connections that are defined for the product name listed in the Web Service Connections.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
provisioning.fabricSetting .fabrics	string	Specify the fabric name. Separate multiple values by commas. If omitted, all fabrics defined as FOS_PrimarySwitch or DCNM in Connections will be used.	-	-
provisioning.fabricSetting .usingExistingZone	boolean	Specifies whether to select a predefined zone or any connectable path. If you specify True, the system selects paths within the range of the existing active Zone setting. If you specify False, the system selects connectable paths regardless of the existing Zone setting.	true or false	false
provisioning.fabricSetting .hops.restriction	boolean	Determines whether the service will fail if there is no path that matches the specified collection range.	true or false	false
provisioning.fabricSetting .hops.range	integer	When using the Host Restriction option, specify the collection range by the number of hops.	-	0
provisioning.zoneSetting. enabled	boolean	Specify True to enable the modify zone settings functionality.	true or false	false

KeyName	Type	Description	Range	Default Value
provisioning.zoneSetting.useExistingZoneAliases	boolean	Specify True to use predefined Zone Aliases regardless of the naming conventions the user specifies. If you specify False, the system selects Zone Aliases that follow the naming conventions. In either case, if there are no existing Zone Aliases, the system creates new Zone Aliases that follow the naming conventions.	true or false	false
provisioning.zoneSetting.updateActiveZoneConfiguration	boolean	Specify True to add a Zone to the active Zone Configuration.	true or false	true
provisioning.zoneSetting.zoneConfigurationName	string	To add a zone to a Zone Configuration other than the active configuration, specify the name of the Zone Configuration in which to add the zone.	-	-
provisioning.zoneSetting.namingScript.zone	file	Specify the naming convention script that determines the Zone name for the path.	-	See the following provisioning.zoneSetting.namingScript.zone example

KeyName	Type	Description	Range	Default Value
provisioning.zoneSetting.namingScript.hostZoneAlias	file	Specify the naming convention script that determines the Zone Alias name for the host port.	-	See the following provisioning.zoneSetting.namingScript.hostZoneAlias example
provisioning.zoneSetting.namingScript.storageZoneAlias	file	Specify the zone information.	-	See the following provisioning.zoneSetting.namingScript.storageZoneAlias example
AutoGenerateTaskName	boolean	Specify whether to set the task name automatically for auto-registered tasks.	true or false	true
TaskName	string	Specify the task name for auto-registered tasks.	128 characters or less	-
MarkTasksAsToDo	boolean	Specify whether to mark the auto-registered tasks as To Do.	true or false	false

**File type property list**

**Table 396 SourceSACConnection**

Data nesting information		Description	Range
value			
	productName	-	-
	name	-	-

Data nesting information		Description	Range
	ipAddress	-	-
	port	-	-
	protocol	-	-
	userID	-	-
	status	-	-
	connectedTime	-	-

**Table 397 SourceHostsFilter**

Data nesting information		Description	Range
value*			
	key	-	-
	operator	-	-
	value	-	-
*: Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

**Table 398 SourceHosts**

Data nesting information		Description	Range
value			
	serverId	-	-
	serverName	-	-
	description	-	-
	ipAddress	-	-
	protocol	-	-
	wwpns	-	-
	iscsiNames	-	-
	osType	-	-
	serverGroupName	-	-
	chapUser	-	-

Data nesting information		Description	Range
	attachedStorageSystem	-	-
	attachedVirtualStorageMachine	-	-
	attachedVolumeCount	Attached volume count	-
	storagePortIds	Port ID	-

**Table 399 SourceConfigurationManagerConnection, TargetConfigurationManagerConnection**

Data nesting information		Description	Range
value			
	productName	-	-
	name	-	-
	ipAddress	-	-
	port	-	-
	protocol	-	-
	userID	-	-
	status	-	-
	connectedTime	-	-

**Table 400 TargetStorageSystem**

Data nesting information		Description	Range
value			
	storageDeviceId	Storage device ID	-
	model	Model	-
	serialNumber	Serial number	-
	svplp	SVP IP address	-
	compressionAcceleration		"available", "unavailable"

**Table 401 TargetResourceGroup**

Data nesting information		Description	Range
value			
	resourceGroupName	-	-
	resourceGroupId	-	-
	virtualStorageMachine	-	-
	virtualStorageId	-	-
	virtualModel	-	-
	virtualSerialNumber	-	-
	sourceVirtualStorageMachine	-	-

**Table 402 TargetPool**

Data nesting information		Description	Range
value			
	poolId	-	-
	poolName	-	-
	poolType	-	-
	usedCapacityRate	-	-
	availableVolumeCapacity	-	-
	totalPoolCapacity	-	-
	numOfLdevs	-	-

**Table 403 PortMappings**

Data nesting information		Description	Range
value			
	sourcePort	-	-
	targetPort	-	-

Table 404 QuorumDisk

Data nesting information		Description	Range
value			
	quorumDiskId	-	-
	serialNumber	-	-
	storageType	-	-
	primaryStatus	-	-
	secondaryStatus	-	-

Table 405 provisioning.fabricSetting.connections

Data nesting information		Description	Range
value			
	productName	Category	-
	name	Name	-
	ipAddress	IP Address/Host Name	-
	port	Port	-
	protocol	Protocol	-
	userID	User ID	-
	status	Status	-
	connectedTime	Connected Time	-

**provisioning.zoneSetting.namingScript examples**

## provisioning.zoneSetting.namingScript.zone example

```
function nameZone(args) {
  var name = args.hostName;
  if (name === null || !(typeof (name) == "string" || name instanceof String))
  { throw new Error(
    "Host name must be a string: " + name); }
  name = name.replace(/^[A-Za-z0-9_]/g, '_');

  var wwn = args.hostPortWorldWideName;
  if (wwn === null || !(typeof (wwn) == "string" || wwn instanceof String)) { throw
  new Error(
    "Host port WWN must be a string: " + wwn); }
```



```

name = name + '_' + wwn.replace(/:/g, '').slice(-4);

if (/^[A-Z]/i.test(name) === false) {
  name = "IP_" + name;}

var SERVERALIAS = name;

var serial = args.storageSystemSerialNumber;
if (serial === null || !(typeof (serial) == "string" || serial instanceof String))
{ throw new Error(
  "Storage System Serial Number must be a string: " + serial); }

name = 'SN' + serial;
name = name.replace(/^[A-Za-z0-9_]/g, '_');

var PortName = args.storagePortName;
if (PortName === null || !(typeof (PortName) == "string" || PortName instanceof
String)) { throw new Error(
  "Port Name must be a string: " + PortName); }
PortName = PortName.replace(/^[A-Za-z0-9_]/g, '_');

name = name + '_' + PortName;

var ARRAYALIAS = name;

var name1 = SERVERALIAS + '_' + ARRAYALIAS;

if (name1.length > 64) { throw new Error(
  "Zone name must be within 64 characters: " + name1); }

return name1;
}

```

#### provisioning.zoneSetting.namingScript.hostZoneAlias example

```

function nameHostZoneAlias(args) {
  var name = args.hostName;
  if (name === null || !(typeof (name) == "string" || name instanceof String))
{ throw new Error(
  "Host name must be a string: " + name); }
name = name.replace(/^[A-Za-z0-9_]/g, '_');

var wwn = args.hostPortWorldWideName;
if (wwn === null || !(typeof (wwn) == "string" || wwn instanceof String)) { throw
new Error(
  "Host port WWN must be a string: " + wwn); }
name = name + '_' + wwn.replace(/:/g, '').slice(-4);

if (/^[A-Z]/i.test(name) === false) {

```

```

        name = "IP_" + name;}
    if (name.length > 64) { throw new Error(
        "Zone alias name must be within 64 characters: " + name); }
    return name;
}

```

provisioning.zoneSetting.namingScript.storageZoneAlias example

```

function nameStorageZoneAlias(args) {
    var serial = args.storageSystemSerialNumber;
    if (serial === null || !(typeof (serial) == "string" || serial instanceof String))
    { throw new Error(
        "Storage System Serial Number must be a string: " + serial); }

    var PortName = args.storagePortName;
    if (PortName === null || !(typeof (PortName) == "string" || PortName instanceof
String)) { throw new Error(
        "Port Name must be a string: " + PortName); }
    PortName = PortName.replace(/[^A-Za-z0-9_]/g, '_');

    var name = 'SN' + serial.replace(/:/g, '') + '_' + PortName;
    if (name.length > 64) { throw new Error(
        "Zone alias name must be within 64 characters: " + name); }
    return name;
}
if (/^[A-Z]/i.test(name) == false) {
throw new Error("Zone alias name must start with a alphabet: " + name);
} return name;
}
})

```

## Create Online Migration Pairs for Multiple Hosts (submit)

KeyName	Type	Description	Range	Default Value
SourceSAConnection	file	Specify the Source Ops Center Administrator Connection for selecting migration source hosts.	See the following File type property list	-
SourceHostsFilter	file	Use the filters to display only the source hosts that match the specified criteria.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
JoinHostFiltersBy	string	Use the "and" and the "or" operators to join multiple filters.	"and", "or"	and
HostRowsPerPage	integer	Use the filter to display only the specified number of source hosts.	50, 100, 200, 500, 1000	50
HostCurrentPage	integer	Use the filter to display only the specified page number of the rows per page number of source hosts.	-	1
SourceHosts	file	Specify the source hosts.	See the following File type property list	-
SourceConfigurationManagerConnection	file	Specify the Source Configuration Manager Connection for migration.	See the following File type property list	-
TargetConfigurationManagerConnection	file	Specify the Target Configuration Manager Connection for migration.	See the following File type property list	-
TargetStorageSystem	file	Specify the Target Storage System for migration.	See the following File type property list	-
TargetResourceGroup	file	Specify the Target Resource Group.	See the following File type property list	-
TargetPool	file	Specify the Target Pool.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
LdevIdRangeStartsFrom	integer	Search for undefined LDEV IDs and allocate target volumes in order from the specified physical LDEV ID. If a physical LDEV ID is not specified, volumes with the same LDEV ID are allocated first.	0-65279	-
LdevIdRangeEndsAt	integer	Specify the last LDEV ID in the LDEV ID range. If the last LDEV ID is not specified, LDEV IDs are used up to the storage system maximum.	0-65279	-
ResourceGroupForPreferentialUseWithLdevIds	string	Specify the resource group to use first when searching for available physical LDEV IDs. If there are not enough available LDEV IDs in the resource group with the specified option, LDEV IDs in the resource group with the unspecified option are also used.	"meta_resource", "Selected Target Resource Group"	meta_resource
PortMappings	file	Specify mappings for the source and target storage ports. Based on the mappings, the system configures the I/O path between the host and the target storage port.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
CapacitySavingSettingsForTargetVolumes	string	<p>Specify how to apply Capacity Saving settings to target volumes.</p> <p>If "Same as source volumes" is specified, the settings will be applied in the same way as the Capacity Saving settings for source volumes.</p> <p>If "Specify Capacity Saving settings" is specified, the settings selected in the following properties will be applied.</p> <p>If you select the storage system with "Compression Acceleration" available in the "Target Storage System", then Compression Acceleration is enabled when the capacity saving function is enabled.</p> <p>If you select a storage system where "Compression Acceleration" is unavailable, then Compression Acceleration is disabled.</p>	"Same as source volumes", "Specify Capacity Saving settings"	Same as source volumes

KeyName	Type	Description	Range	Default Value
CapacitySavingFunction	string	Specify the Capacity Saving Function for target volumes.	"None", "Compression", "Deduplication and Compression"	None
CapacitySavingMode	string	Specify the Capacity Saving Mode for target volumes.	"Inline mode", "Post-process mode"	Post-process mode
SetCapacitySaving	string	Specify when to apply capacity saving settings to target volumes.  If "Before migration" is specified, the settings are applied before copying from the source volumes to the target volumes. Capacity saving begins at the start of migration, but the time required for migration increases.  If "After migration" is specified, the settings are applied after copying from the source volumes to the target volumes is complete. The migration time will not increase, but capacity saving will begin after the migration is complete.	"Before migration", "After migration"	Before migration
CopyPace	integer	Specify the Copy Pace (Slow:3, Medium:8, or Fast:15).	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15	8

KeyName	Type	Description	Range	Default Value
PathGroupIdSelection	string	Specify whether to manually select the path group ID.	"Auto Selection", "Manual Selection"	Auto Selection

KeyName	Type	Description	Range	Default Value
PathGroupId	string	Specify the path group ID.	00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B, 0C, 0D, 0E, 0F, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 1A, 1B, 1C, 1D, 1E, 1F, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 2A, 2B, 2C, 2D, 2E, 2F, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 3A, 3B, 3C, 3D, 3E, 3F, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 4A, 4B, 4C, 4D, 4E, 4F, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 5A, 5B, 5C, 5D, 5E, 5F, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 6A, 6B, 6C, 6D, 6E, 6F, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 7A, 7B, 7C, 7D, 7E, 7F, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 8A, 8B, 8C, 8D, 8E, 8F, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 9A, 9B, 9C, 9D, 9E, 9F, A0, A1, A2, A3, A4, A5, A6, A7, A8, A9, AA, AB, AC, AD, AE, AF, B0, B1, B2, B3, B4, B5, B6, B7,	00



KeyName	Type	Description	Range	Default Value
			B8, B9, BA, BB, BC, BD, BE, BF, C0, C1, C2, C3, C4, C5, C6, C7, C8, C9, CA, CB, CC, CD, CE, CF, D0, D1, D2, D3, D4, D5, D6, D7, D8, D9, DA, DB, DC, DD, DE, DF, E0, E1, E2, E3, E4, E5, E6, E7, E8, E9, EA, EB, EC, ED, EE, EF, F0, F1, F2, F3, F4, F5, F6, F7, F8, F9, FA, FB, FC, FD, FE, FF	
UseDisklessQuorum	boolean	Specify whether to use diskless quorum.	true or false	true
QuorumDisk	file	Specify the quorum disk.	See the following File type property list	-
RunZeroPageReclaim	boolean	Specify whether to run zero page reclaim when the online migration is completed.	true or false	true
mailsettings.enable	boolean	Specifies whether to send an email notification when the migration target volume path allocation is complete. This enables you to confirm the path allocation listed in the email, then bring it online.	true or false	false

KeyName	Type	Description	Range	Default Value
mailsettings.to	string	Specifies the primary (TO) email notification addresses.	-	-
mailsettings.cc	string	Specifies additional CC email notification addresses.	-	-
mailsettings.bcc	string	Specifies additional BCC email notification addresses.	-	-
mailsettings.subject	string	Specifies the email subject.	-	Migration task information. (Waiting for Action.)
mailsettings.body	file	Specifies the text of the email body.	-	The "Create Online Migration Pair" service task is complete. %taskDetails%

KeyName	Type	Description	Range	Default Value
				<p>Do the following, and then submit the "Migrate Data for Online Migration Pair" service. Confirm the LUN paths of the target volumes in the Task Details dialog box.</p> <ul style="list-style-type: none"> <li>- On the target hosts, bring all target volumes online.</li> <li>- Take all source volumes offline.</li> <li>- Create target volume clone pairs, if necessary.</li> </ul>

KeyName	Type	Description	Range	Default Value
				- If the source volumes have clone pairs, delete them.  If you want to cancel the migration process and return to the state before migration , submit the "Clean up Online Migration Pair" service.
deleteHostGroupOption	boolean	Select the checkbox to delete the Host Group.	true or false	false
deleteVolumeOption	boolean	Select the checkbox to delete the Volume.	true or false	false
storage_lock_total_wait_time	integer	Specifies the lock waiting time upper limit when acquiring the storage lock while change the configuration.	305 - 630720000	604800
setHMO88Auto	boolean	Specifies whether to set Host Mode Option 88 to Host Groups automatically.	true or false	true

KeyName	Type	Description	Range	Default Value
addMigrationProgressToNotes	boolean	Specifies whether to automatically add the migration progress to the Notes of the Create Online Migration Pair task. If you enable this feature, create the Migrate Data for Online Migration Pair and Clean up Online Migration Pair services in the same service group as the Create Online Migration Pairs for Multiple Hosts service.	true or false	false
AutoGenerateTaskName	boolean	Specify whether to set the task name automatically for auto-registered tasks.	true or false	true
TaskName	string	Specify the task name for auto-registered tasks.	128 characters or less	-
MarkTasksAsToDo	boolean	Specify whether to mark the auto-registered tasks as To Do.	true or false	false

## File type property list

Table 406 SourceSACconnection

Data nesting information		Description	Range
value			
	productName	-	-
	name	-	-
	ipAddress	-	-

Data nesting information		Description	Range
	port	-	-
	protocol	-	-
	userID	-	-
	status	-	-
	connectedTime	-	-

Table 407 SourceHostsFilter

Data nesting information		Description	Range
value*			
	key	-	-
	operator	-	-
	value	-	-

\*: Repeatable. Repeatable items must be repeated and must include all lower layer tags.

Table 408 SourceHosts

Data nesting information		Description	Range
value			
	serverId	-	-
	serverName	-	-
	description	-	-
	ipAddress	-	-
	protocol	-	-
	wwpns	-	-
	iscsiNames	-	-
	osType	-	-
	serverGroupName	-	-
	chapUser	-	-
	attachedStorageSystem	-	-

Data nesting information		Description	Range
	attachedVirtualStorageMachine	-	-
	attachedVolumeCount	Attached volume count	-
	storagePortIds	Port ID	-

**Table 409 SourceConfigurationManagerConnection,  
TargetConfigurationManagerConnection**

Data nesting information		Description	Range
value			
	productName	-	-
	name	-	-
	ipAddress	-	-
	port	-	-
	protocol	-	-
	userID	-	-
	status	-	-
	connectedTime	-	-

**Table 410 TargetStorageSystem**

Data nesting information		Description	Range
value			
	storageDeviceId	Storage device ID	-
	model	Model	-
	serialNumber	Serial number	-
	svplp	SVP IP address	-
	compressionAcceleration		"available", "unavailable"

**Table 411 TargetResourceGroup**

Data nesting information		Description	Range
value			
	resourceGroupName	-	-
	resourceGroupId	-	-
	virtualStorageMachine	-	-
	virtualStorageId	-	-
	virtualModel	-	-
	virtualSerialNumber	-	-
	sourceVirtualStorageMachine	-	-

**Table 412 TargetPool**

Data nesting information		Description	Range
value			
	poolId	-	-
	poolName	-	-
	poolType	-	-
	usedCapacityRate	-	-
	availableVolumeCapacity	-	-
	totalPoolCapacity	-	-
	numOfLdevs	-	-

**Table 413 PortMappings**

Data nesting information		Description	Range
value			
	sourcePort	-	-
	targetPort	-	-



Table 414 QuorumDisk

Data nesting information		Description	Range
value			
	quorumDiskId	-	-
	serialNumber	-	-
	storageType	-	-
	primaryStatus	-	-
	secondaryStatus	-	-

## Create Online Migration Pairs for Multiple Hosts (task details)

KeyName	Type	Description	Range
createdDisklessQuorumId	string	Stores created Diskless Quorum ID.	-
AutoRegisteredServiceInformation	File	Stores information of the auto-registered service.	See the following File type property list
AutoRegisteredTaskInformation	File	Stores information of the auto-registered tasks.	See the following File type property list
VolumeSharingHosts	File	Stores information of the hosts sharing the same volume. For migration of these hosts, run the Create Online Migration Pair service after specifying all of them in single task.	See the following File type property list

### File type property list

Table 415 AutoRegisteredServiceInformation

Data nesting information	Description	Range
value		

Data nesting information		Description	Range
	instanceID	-	-
	name	-	-
	favorite	-	-
	description	-	-
	serviceGroupName	-	-
	serviceTemplateName	-	-
	vendorName	-	-
	version	-	-
	tags	-	-
	serviceState	-	-
	createTime	-	-
	modifyTime	-	-
	lastSubmitTime	-	-

Data nesting information		Description	Range
value*			
	instanceID	-	-
	name	-	-
	toDo	-	-
	status	-	-
	submitTime	-	-
	startTime	-	-
	completionTime	-	-
	scheduleType	-	-
	description	-	-
	serviceName	-	-
	serviceGroupName	-	-

Data nesting information		Description	Range
	tags	-	-
	serviceState	-	-
	submitter	-	-
	notes	-	-
* Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

**Table 416 VolumeSharingHosts**

Data nesting information		Description	Range
value*			
	serverId	-	-
	serverName	-	-
	description	-	-
	ipAddress	-	-
	protocol	-	-
	wwpns	-	-
	iscsiNames	-	-
	osType	-	-
	serverGroupName	-	-
	chapUser	-	-
	attachedStorageSystem	-	-
	attachedVirtualStorageMachine	-	-
	attachedVolumeCount	-	-
	dkcDataSavingType	-	-
	storagePortIds	-	-
* Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

## Global-Active Device Setup service properties

Use the following properties to modify or create values for the Global-Active Device Setup Service.

### Global-Active Device Setup (edit)

keyName	Type	Description	Range	Default value
SourceConfigurationManagerConnection	file	Specify the Ops Center API Configuration Manager Connection of Primary(Source) Storage for migration.	See the following File type property list	-
SourceStorageSystem	file	Specify the Primary (Source) Storage System for migration.	See the following File type property list	-
TargetConfigurationManagerConnection	file	Specify the Ops Center API Configuration Manager Connection of the Secondary (Target) Storage for migration.	See the following File type property list	-
TargetStorageSystem	file	Specify the Secondary (Target) Storage System for migration.	See the following File type property list	-
ConfigureOrSkipVSM	string	Select whether to create a Virtual Storage Machine or skip this step.	Configure, Skip	Configure

keyName	Type	Description	Range	Default value
ConfigureVsmTo	string	Select a VSM creation type.	Duplicate the primary storage system VSM to the secondary storage system., Create new VSMs on both the primary and secondary storage systems.	Duplicate the primary storage system VSM to the secondary storage system.
ExistingVirtualStorage Machine	file	Specify the virtual storage machine on the primary storage as the migration source.	See the following File type property list	-
VirtualModel	string	Specify the virtual model to create a new user-defined virtual storage machine.	-	-
VirtualSerialNumber	integer	Specify the virtual serial number to create a new user-defined virtual storage machine.	1-999999	-
ResourceGroupName <sup>1</sup>	string	Specify the name of the resource group on the primary and secondary storage for the virtual storage machines.	1-32 characters	-
ConfigureOrSkipQuorum	string	Select whether to configure a Quorum Disk or skip this step.	Configure, Skip	Configure
QuorumDiskId	integer	Specify the Quorum Disk ID.	0-31	-

keyName	Type	Description	Range	Default value
AddQuorumDiskWithoutVolume	boolean	Check this when defining a Quorum disk which does not need external volumes.	true or false	false
SourceVolumesFilter	file	Use the filters to display only the primary volumes that match the specified criteria.	See the following File type property list	-
JoinFiltersBy	string	Use the "and" and the "or" operators to join multiple filters.	and, or	and
SourceVolumes	file	Select the volume to use as the Quorum disk on the primary storage.	See the following File type property list	-
TargetVolumesFilter	file	Use the filters to display only the secondary volumes that match the specified criteria.	See the following File type property list	-
TargetJoinFiltersBy	string	Use the "and" and the "or" operators to join multiple filters.	and, or	and
TargetVolumes	file	Select the volume to use as the Quorum disk on the secondary storage.	See the following File type property list	-
ConfigureOrSkipRemotePaths	string	Select whether to set Remote Path Groups or skip this step.	Configure, Skip	Configure
RemotePathSetting	file		See the following File type property list	-
ConfigureOrSkipPrimaryPairManagementServerConfigurations	string	Select whether to set Pair Management Server Configurations or skip this step.	Configure, Skip	Configure

keyName	Type	Description	Range	Default value
ExistingOrCreateNew	string	Select whether to use an existing Host Group/iSCSI Target or create a new Host Group/iSCSI Target.	"Existing Host Group/iSCSI Target", "New Host Group/iSCSI Target"	Existing Host Group/iSCSI Target
ExistingHostGroupsOriSCSITargets	file	Select an existing Host Group or iSCSI Target.	See the following File type property list	-
PortType	string	Select the Port Type.	Fibre, iSCSI	Fibre
HostGroupSettings	file		See the following File type property list	-
ConfigureOrSkipSecondaryPairManagementServerConfigurations	string	Select whether to set Pair Management Server Configurations or skip this step.	Configure, Skip	Configure
SecondaryExistingOrCreateNew	string	Select whether to use an existing Host Group/iSCSI Target or create a new Host Group/iSCSI Target.	"Existing Host Group/iSCSI Target", "New Host Group/iSCSI Target"	Existing Host Group/iSCSI Target
SecondaryExistingHostGroupsOriSCSITargets	file	Select an existing Host Group or iSCSI Target.	See the following File type property list	-
SecondaryPortType	string	Select the Port Type.	Fibre, iSCSI	Fibre
SecondaryHostGroupSettings	file		See the following File type property list	-
isSecurityEnabled	boolean	Select this option to enable Command Device Security.	true, false	false

keyName	Type	Description	Range	Default value
isUserAuthenticationEnabled	boolean	Select this option to enable User Authentication.	true, false	true
isDeviceGroupDefinitionEnabled	boolean	Select this option to enable Device Group Definitions.	true, false	false
VolumeCapacity	integer	Specify the volume capacity.	47-4194304	-
VolumeLabel <sup>2</sup>	string	Specify the volume label.	0-64 characters	CMD
DPVolumeOrBasicVolume	string	Specify the volume type.	"Basic Volume", "Dynamic Provisioning"	Dynamic Provisioning
Pool	file	Select the pool.	See the following File type property list	-
ParityGroup	file	Select the parity group.	See the following File type property list	-
LDEVIDStartsFrom	integer	Specify the startup LDEV ID as a hexadecimal number for the volume to allocate. If this field is listed as "allocated" in another template, you must change it.	0-16777215	0
LUNStartsFrom	integer	Specify the starting logical unit number assigned to the volume for a host.	0-2047	0



keyName	Type	Description	Range	Default value
SourceCapacitySavingFunction	string	Specify the Capacity Saving Function for target volumes.	"None", "Compression", "Deduplication and Compression"	None
SourceCapacitySavingMode	string	Specify the Capacity Saving Mode for target volumes.	"Inline mode", "Post-process mode"	Post-process mode
SecondaryDPVolumeOrBasicVolume	string	Specify the volume type.	"Basic Volume", "Dynamic Provisioning"	Dynamic Provisioning
SecondaryPool	file	Select the parity group.	See the following File type property list	-
SecondaryParityGroup	file	Select the parity group.	See the following File type property list	-
SecondaryLDEVIDStartsFrom	integer	Specify the startup LDEV ID as a hexadecimal number for the volume to allocate. If this field is listed as "allocated" in another template, you must change it.	0-16777215	0
SecondaryLUNStartsFrom	integer	Specify the starting logical unit number assigned to the volume for a host.	0-2047	0

keyName	Type	Description	Range	Default value
TargetCapacitySavingFunction	string	Specify the Capacity Saving Function for target volumes.	"None", "Compression", "Deduplication and Compression"	None
TargetCapacitySavingMode	string	Specify the Capacity Saving Mode for target volumes.	"Inline mode", "Post-process mode"	Post-process mode
1. <code>^[A-Za-z0-9@_][A-Za-z0-9@_-]*\$</code> 2. <code>^[A-Za-z0-9!#\$%&amp;'()+, -. :=@ [ ] ^ _ { } ~ / \ ]*</code>				

## File type property list

**Table 417 SourceConfigurationManagerConnection, TargetConfigurationManagerConnection**

Data nesting information		Description	Range
value			
	productName	Category	-
	name	Name	-
	ipAddress	IP Address/Host Name	-
	port	Port	-
	protocol	Protocol	-
	userID	User ID	-
	status	Status	-
	connectedTime	Connected Time	-

**Table 418 SourceStorageSystem, TargetStorageSystem**

Data nesting information		Description	Range
value			

Data nesting information		Description	Range
	storageDeviceId	Storage Device ID	-
	model	Model	-
	serialNumber	Serial Number	-
	isSecure	Secure Connection	-
	svplp	SVP IP Address	-
	ctl1lp	Controller 1 IP	-
	ctl2lp	Controller 2 IP	-
	dkcMicroVersion	DKC Micro Version	-

Table 419 ExistingVirtualStorageMachine

Data nesting information		Description	Range
value			
	vsmType	Primary-Secondary Type	-
	virtualModel	Virtual Model	-
	VirtualSerialNumber	Virtual Serial Number	-

Table 420 SourceVolumesFilter, TargetVolumesFilter

Data nesting information		Description	Range
value <sup>1</sup>			
	key	Key used by the source volume filter	"LDEV ID", "Label", "External Volume Id" or "External Volume Id String"

Data nesting information		Description	Range
	operator	Operator	When specify "LDEV ID", the following operators can be specified: "=", "<", ">", "<=", ">=", "!=".  When specify "Label", "External Volume Id" or "External Volume Id String", the following operators can be specified: "=", "!=", "starts with", "ends with".
	value	Value	
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 421 SourceVolumes, TargetVolumes

Data nesting information		Description	Range
value			
	ldevId	Volume	0-16777215
	label	LDEV Label	-
	byteFormatCapacity	Capacity	-
	status	Status	-
	attributes	Attributes	-
	numOfPorts	Number of Ports	-
	externalVolumeld	External Volume ID	-
	externalVolumeldString	External Volume ID String	-

Table 422 RemotePathSetting

Data nesting information		Description	Range
value <sup>1</sup>			
	sourceMCUInitiatorPort	Primary Storage MCU Initiator Port	-

Data nesting information		Description	Range
	sourceRCUTargetPort	Primary Storage RCU Target Port	-
	targetMCUInitiatorPort	Secondary Storage MCU Initiator Port	-
	targetRCUTargetPort	Secondary Storage RCU Target Port	-
	pathGroupId	Path Group ID	0-255
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

**Table 423 ExistingHostGroupsOriSCSITargets, SecondaryExistingHostGroupsOriSCSITargets**

Data nesting information		Description	Range
value <sup>1</sup>			
	storageDeviceId	Storage Device ID	-
	portId	Port	-
	hostGroupNumber	Host Group Number	-
	hostGroupName	Host Group Name	-
	iscsiName	iSCSI Name	-
	hostMode	Host Mode	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

**Table 424 HostGroupSettings, SecondaryHostGroupSettings**

Data nesting information		Description	Range
value <sup>1</sup>			
	port	Port	
	hostGroupName <sup>2</sup>	Host Group Name / iSCSI Target Alias	A maximum of 64 characters can be entered.
	iScsiTargetName <sup>3</sup>	iSCSI Target Name	A maximum of 32 characters can be entered.

Data nesting information		Description	Range
	wwnSettings <sup>1, 4</sup>		WWN Settings
		wwn	WWN
		wwnNickname	WWN Nickname
	iScsiSettings <sup>1, 5</sup>		iSCSI Settings
		iScsiName	iSCSI Name
		iScsiNickname	iSCSI Nickname
	hostMode		Host Mode
	hostModeOptions		Host Mode Options
<p>Remarks</p> <ol style="list-style-type: none"> <li>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.</li> <li>2. When "PortType" is "Fibre", hostGroupName can be specified.</li> <li>3. When "PortType" is "iSCSI", iScsiTargetName can be specified.</li> </ol>			

Data nesting information	Description	Range
4. When "PortType" is "Fibre", wwnSettings can be specified.		
5. When "PortType" is "iSCSI", iScsiSettings can be specified.		

Table 425 Pool, SecondaryPool

Data nesting information	Description	Range
value		
poolId	Pool ID	-
poolName	Pool name	-
poolType	Pool Type	-
usedCapacityRate	Used capacity rate	-
availableVolumeCapacity	Available Volume capacity	-
totalPoolCapacity	Total Pool capacity	-
numOfLdevs	Number of LDEVs	-

Table 426 ParityGroup, SecondaryParityGroup

Data nesting information	Description	Range
value		
parityGroupId	Parity Group ID	-
raidLevel	Raid Level	-
raidType	Raid Type	-
clprId	CLPR	-
availableVolumeCapacity	Available Capacity	-
totalCapacity	Total Capacity	-
isAcceleratedCompressionEnabled	Is Accelerated Compression Enabled	-
numOfLdevs	Number of Volumes	-

## Global-Active Device Setup (submit)

keyName	Type	Description	Range	Default value
SourceConfigurationManagerConnection	file	Specify the Ops Center API Configuration Manager Connection of Primary(Source) Storage for migration.	See the following File type property list	-
SourceStorageSystem	file	Specify the Primary (Source) Storage System for migration.	See the following File type property list	-
TargetConfigurationManagerConnection	file	Specify the Ops Center API Configuration Manager Connection of the Secondary (Target) Storage for migration.	See the following File type property list	-
TargetStorageSystem	file	Specify the Secondary (Target) Storage System for migration.	See the following File type property list	-
ConfigureOrSkipVSM	string	Select whether to create a Virtual Storage Machine or skip this step.	Configure, Skip	Configure
ConfigureVsmTo	string	Select a VSM creation type.	Duplicate the primary storage system VSM to the secondary storage system., Create new VSMs on both the primary and secondary storage systems.	Duplicate the primary storage system VSM to the secondary storage system.



keyName	Type	Description	Range	Default value
ExistingVirtualStorage Machine	file	Specify the virtual storage machine on the primary storage as the migration source.	See the following File type property list	-
VirtualModel	string	Specify the virtual model to create a new user-defined virtual storage machine.	-	-
VirtualSerialNumber	integer	Specify the virtual serial number to create a new user-defined virtual storage machine.	1-999999	-
ResourceGroupName <sup>1</sup>	string	Specify the name of the resource group on the primary and secondary storage for the virtual storage machines.	1-32 characters	-
ConfigureOrSkipQuorum	string	Select whether to configure a Quorum Disk or skip this step.	Configure, Skip	Configure
QuorumDiskId	integer	Specify the Quorum Disk ID.	0-31	-
AddQuorumDiskWithoutVolume	boolean	Check this when defining a Quorum disk which does not need external volumes.	true or false	false
SourceVolumesFilter	file	Use the filters to display only the primary volumes that match the specified criteria.	See the following File type property list	-
JoinFiltersBy	string	Use the "and" and the "or" operators to join multiple filters.	and, or	and

keyName	Type	Description	Range	Default value
SourceVolumes	file	Select the volume to use as the Quorum disk on the primary storage.	See the following File type property list	-
TargetVolumesFilter	file	Use the filters to display only the secondary volumes that match the specified criteria.	See the following File type property list	-
TargetJoinFiltersBy	string	Use the "and" and the "or" operators to join multiple filters.	and, or	and
TargetVolumes	file	Select the volume to use as the Quorum disk on the secondary storage.	See the following File type property list	-
ConfigureOrSkipRemotePaths	string	Select whether to set Remote Path Groups or skip this step.	Configure, Skip	Configure
RemotePathSetting	file		See the following File type property list	-
ConfigureOrSkipPrimaryPairManagementServerConfigurations	string	Select whether to set Pair Management Server Configurations or skip this step.	Configure, Skip	Configure
ExistingOrCreateNew	string	Select whether to use an existing Host Group/iSCSI Target or create a new Host Group/iSCSI Target.	"Existing Host Group/iSCSI Target", "New Host Group/iSCSI Target"	Existing Host Group/iSCSI Target
ExistingHostGroupsOrISCSITargets	file	Select an existing Host Group or iSCSI Target.	See the following File type property list	-
PortType	string	Select the Port Type.	Fibre, iSCSI	Fibre

keyName	Type	Description	Range	Default value
HostGroupSettings	file		See the following File type property list	-
ConfigureOrSkipSecondaryPairManagementServerConfigurations	string	Select whether to set Pair Management Server Configurations or skip this step.	Configure, Skip	Configure
SecondaryExistingOrCreateNew	string	Select whether to use an existing Host Group/iSCSI Target or create a new Host Group/iSCSI Target.	"Existing Host Group/iSCSI Target", "New Host Group/iSCSI Target"	Existing Host Group/iSCSI Target
SecondaryExistingHostGroupsOriSCSITargets	file	Select an existing Host Group or iSCSI Target.	See the following File type property list	-
SecondaryPortType	string	Select the Port Type.	Fibre, iSCSI	Fibre
SecondaryHostGroupSettings	file		See the following File type property list	-
isSecurityEnabled	boolean	Select this option to enable Command Device Security.	true, false	false
isUserAuthenticationEnabled	boolean	Select this option to enable User Authentication.	true, false	true
isDeviceGroupDefinitionEnabled	boolean	Select this option to enable Device Group Definitions.	true, false	false
VolumeCapacity	integer	Specify the volume capacity.	47-4194304	-
VolumeLabel <sup>3</sup>	string	Specify the volume label.	0-64 characters	CMD

keyName	Type	Description	Range	Default value
DPVolumeOrBasicVolume	string	Specify the volume type.	"Basic Volume", "Dynamic Provisioning"	Dynamic Provisioning
Pool	file	Select the pool.	See the following File type property list	-
ParityGroup	file	Select the parity group.	See the following File type property list	-
LDEVIDStartsFrom	integer	Specify the startup LDEV ID as a hexadecimal number for the volume to allocate. If this field is listed as "allocated" in another template, you must change it.	0-16777215	0
LUNStartsFrom	integer	Specify the starting logical unit number assigned to the volume for a host.	0-2047	0
SourceCapacitySavingFunction	string	Specify the Capacity Saving Function for target volumes.	"None", "Compression", "Deduplication and Compression"	None
SourceCapacitySavingMode	string	Specify the Capacity Saving Mode for target volumes.	"Inline mode", "Post-process mode"	Post-process mode
SecondaryDPVolumeOrBasicVolume	string	Specify the volume type.	"Basic Volume", "Dynamic Provisioning"	Dynamic Provisioning

keyName	Type	Description	Range	Default value
SecondaryPool	file	Select the parity group.	See the following File type property list	-
SecondaryParityGroup	file	Select the parity group.	See the following File type property list	-
SecondaryLDEVIDStartsFrom	integer	Specify the startup LDEV ID as a hexadecimal number for the volume to allocate. If this field is listed as "allocated" in another template, you must change it.	0-16777215	0
SecondaryLUNStartsFrom	integer	Specify the starting logical unit number assigned to the volume for a host.	0-2047	0
TargetCapacitySavingFunction	string	Specify the Capacity Saving Function for target volumes.	"None", "Compression", "Deduplication and Compression"	None
TargetCapacitySavingMode	string	Specify the Capacity Saving Mode for target volumes.	"Inline mode", "Post-process mode"	Post-process mode
<ol style="list-style-type: none"> <li>1. <code>^[A-Za-z0-9@_][A-Za-z0-9@_-]*\$</code></li> <li>2. This property cannot be updated.</li> <li>3. <code>^[A-Za-z0-9!#\$%&amp;'()+,.-:=@[ ]^`{ }~/\]*</code></li> </ol>				

## File type property list

**Table 427 SourceConfigurationManagerConnection, TargetConfigurationManagerConnection**

Data nesting information		Description	Range
value			
	productName	Category	-
	name	Name	-
	ipAddress	IP Address/Host Name	-
	port	Port	-
	protocol	Protocol	-
	userID	User ID	-
	status	Status	-
	connectedTime	Connected Time	-

**Table 428 SourceStorageSystem, TargetStorageSystem**

Data nesting information		Description	Range
value			
	storageDeviceId	Storage Device ID	-
	model	Model	-
	serialNumber	Serial Number	-
	isSecure	Secure Connection	-
	svplp	SVP IP Address	-
	ctl1lp	Controller 1 IP	-
	ctl2lp	Controller 2 IP	-
	dkcMicroVersion	DKC Micro Version	-

**Table 429 ExistingVirtualStorageMachine**

Data nesting information	Description	Range
value <sup>1</sup>		

Data nesting information		Description	Range
	key	Key used by the source volume filter	"LDEV ID", "Label", "External Volume Id" or "External Volume Id String"
	operator	Operator	When specify "LDEV ID", the following operators can be specified: "=", "<", ">", "<=", ">=", "!=".  When specify "Label", "External Volume Id" or "External Volume Id String", the following operators can be specified: "=", "!=", "starts with", "ends with".
	value	Value	
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 430 SourceVolumesFilter, TargetVolumesFilter

Data nesting information		Description	Range
value <sup>1</sup>			
	key	Key used by the source volume filter.	"LDEV ID", "Label" or "Pool ID"
	operator	Operator	When specifying "LDEV ID", the following operators can be specified: "=", "<", ">", "<=", ">=", "!=".  When specifying "Label", the following operators can be specified: "=", "!=", "starts with", "ends with".  When specifying "Pool ID", the following operators can be specified: "=", "<", ">", "<=", ">=", "!=".
	value	Value	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

**Table 431 SourceVolumes, TargetVolumes**

Data nesting information		Description	Range
value			
	ldevId	Volume	0-16777215
	label	LDEV Label	-
	byteFormatCapacity	Capacity	-
	status	Status	-
	attributes	Attributes	-
	numOfPorts	Number of Ports	-
	externalVolumeld	External Volume ID	-
	externalVolumeldString	External Volume ID String	-

**Table 432 RemotePathSetting**

Data nesting information		Description	Range
value	<sup>1</sup>		
	sourceMCUInitiatorPort	Primary Storage MCU Initiator Port	-
	sourceRCUTargetPort	Primary Storage RCU Target Port	-
	targetMCUInitiatorPort	Secondary Storage MCU Initiator Port	-
	targetRCUTargetPort	Secondary Storage RCU Target Port	-
	pathGroupId	Path Group ID	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

**Table 433 ExistingHostGroupsOriSCSITargets, SecondaryExistingHostGroupsOriSCSITargets**

Data nesting information		Description	Range
value	<sup>1</sup>		



Data nesting information		Description	Range
	storageDeviceId	Storage Device ID	-
	portId	Port	-
	hostGroupNumber	Host Group Number	-
	hostGroupName	Host Group Name	-
	iscsiName	iSCSI Name	-
	hostMode	Host Mode	-

1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.

Table 434 HostGroupSettings, SecondaryHostGroupSettings

Data nesting information		Description	Range	
value <sup>1</sup>				
	port	Port		
	hostGroupName <sup>2</sup>	Host Group Name / iSCSI Target Alias	A maximum of 64 characters can be entered.	
	iScsiTargetName <sup>3</sup>	iSCSI Target Name	A maximum of 32 characters can be entered.	
	wwnSettings <sup>1, 4</sup>	WWN Settings		
		wwn	WWN	A maximum of 16 characters is allowed in hexadecimal.
		wwnNickname	WWN Nickname	A maximum of 64 characters can be entered.
	iScsiSettings <sup>1, 5</sup>	iSCSI Settings		

Data nesting information		Description	Range
	iScsiName	iSCSI Name	Specify in iqn format or eui format. -iqn format: Specify 5-223 characters by using the following characters: a-z,0-9,.,-,: -eui format: Specify 20 characters in hexadecimal.
	iScsiNickname	iSCSI Nickname	A maximum of 32 characters can be entered.
hostMode		Host Mode	See the Provisioning Guide for your storage system for details about the host mode.
hostModeOptions		Host Mode Options	See the Provisioning Guide for your storage system for details about host mode options.
<p>Remarks</p> <ol style="list-style-type: none"> <li>1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.</li> <li>2. When "PortType" is "Fibre", hostGroupName can be specified.</li> <li>3. When "PortType" is "iSCSI", iScsiTargetName can be specified.</li> <li>4. When "PortType" is "Fibre", wwnSettings can be specified.</li> <li>5. When "PortType" is "iSCSI", iScsiSettings can be specified.</li> </ol>			

Table 435 Pool, SecondaryPool

Data nesting information		Description	Range
value			
poolId		Pool ID	-

Data nesting information		Description	Range
	poolName	Pool name	-
	poolType	Pool Type	-
	usedCapacityRate	Used capacity rate	-
	availableVolumeCapacity	Available Volume capacity	-
	totalPoolCapacity	Total Pool capacity	-
	numOfLdevs	Number of LDEVs	-

Table 436 ParityGroup, SecondaryParityGroup

Data nesting information		Description	Range
value			
	parityGroupId	Parity Group ID	-
	raidLevel	Raid Level	-
	raidType	Raid Type	-
	clprId	CLPR	-
	availableVolumeCapacity	Available Capacity	-
	totalCapacity	Total Capacity	-
	isAcceleratedCompressionEnabled	Is Accelerated Compression Enabled	-
	numOfLdevs	Number of Volumes	-

## Global-Active Device Setup (task details)

KeyName	Type	Description	Range
PrimaryVSMInformation	file	Stores the created Virtual Storage information for Primary Storage.	See the following File type property list

KeyName	Type	Description	Range
SecondaryVSMInformation2	file	Stores the created Virtual Storage information for Secondary Storage.	See the following File type property list
PrimaryQuorumDiskInformation	file	Stores the defined Quorum Disk information for Primary Storage.	See the following File type property list
SecondaryQuorumDiskInformation	file	Stores the defined Quorum Disk information for Secondary Storage.	See the following File type property list
RemotePathConfigurations	file	Stores the Defined Remote Path information for Primary Storage and Secondary Storage.	See the following File type property list
/ ConfigurePairManagementServers/ AllocatePrimaryCommandDevice/ LUNPathConfigurationInformation	file	Stores the allocated LUN path information from the volume allocation results.	See the following File type property list
/ ConfigurePairManagementServers/ AllocateSecondaryCommandDevice/ LUNPathConfigurationInformation	file	Stores the allocated LUN path information from the volume allocation results.	See the following File type property list

### File type property list

Table 437 DataFlowInformation

Data nesting information		Description	Range
value			
	name	Name	-
	description	Description	-
	active	Status	-
	sourceNode	Source node ID	-

Data nesting information		Description	Range
	id	ID	-

**Table 438 PrimarySite\_PrimaryVolumesLUNPathConfigurationInformation,  
SecondarySite\_SecondaryVolumesLUNPathConfigurationInformation**

Data nesting information		Description	Range
value			
	hostPort	Host Port	-
	storagePort	Storage Port	-
	lun	LUN	-
	portType	Port Type	-
	capacity	Capacity	-
	ldevId	Volume	-
	hostGroupNameOrIscsiTarget	Host Group Name/iSCSI Target Alias	-
	iscsiTargetName	iSCSI Target Name	-
	model	Model	-
	serialNumber	Serial No.	-
	ldevLabel	LDEV Label	-
	resourceGroupName	Resource Group	-
	virtualLdevId	Virtual LDEV ID	-
	virtualModel	Virtual Model	-
	virtualSerialNumber	Virtual Serial No.	-
	configurationManager	Configuration Manager	-
	poolId	Pool	-
	tcpPort	TCP Port	-
	ipv4Address	IPv4 Address	-
	ipv6LinkLocalAddress	IPv6 Link Local Address	-
	ipv6GlobalAddress	IPv6 Global Address	-

Table 439 CopyGroupConfigurationInformation

Data nesting information		Description	Range
value			
	ctgId	CTG ID	-
	muNumber	MU Number	-
	quorumDiskName	Quorum Disk Name	-
	siteInformation <sup>1</sup>	Site Information	-
		primaryOrSecondary	Primary/Secondary
		model	Model
		serialNumber	Serial No.
		virtualSerialNumber	Virtual Serial No.
		configurationManager	Configuration Manager
	createdCopyPairs <sup>1</sup>		-
		primaryLdevId	Primary Volume
		primaryModel	Primary Model
		primarySerialNumber	Primary Serial No.
		secondaryLdevId	Secondary Volume
		secondaryModel	Secondary Model
		secondarySerialNumber	Secondary Serial No.
		virtualSerialNumber	Virtual Serial No.
		fenceLevel	Fence Level
		primaryConfigurationManager	Primary Configuration Manager
		secondaryConfigurationManager	Secondary Configuration Manager
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

**Table 440 DeletedCopyPairsInformation**

Data nesting information		Description	Range
value			
	ldevId	Volume	-
	label	LDEV Label	-
	byteFormatCapacity	Capacity	-
	status	Status	-
	attributes	Attributes	-
	numOfPorts	Number of Ports	-
	externalVolumeld	External Volume Id	-
	externalVolumeldString	External Volume Id String	-

**Table 441 DeletedHostGroupsInformation**

Data nesting information		Description	Range
value <sup>1</sup>			
	sourcePort	Source storage port	-
	targetPort	Target storage port	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

**Table 442 provisioning.taskResult.zoneConfiguration**

Data nesting information		Description	Range
value <sup>1</sup>		List of new zone configurations	
	task	Name of new zone configuration	-
	bnaname	Name of BNA that manages the settings	-
	fabricName	Name of the fabric in which the settings exist	-
	zoneNames <sup>1</sup>	Zone to be added to the created zone configuration	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 443 provisioning.taskResult.createdZones

Data nesting information		Description	Range
value <sup>1</sup>		List of new zones	
	name	Name of the new zone	-
	bnaname	Name of the BNA that manages the settings	-
	fabricName	Name of the fabric in which the settings exist	-
	aliasNames <sup>1</sup>	Zone Alias to be added to the created zone	-
	memberNames <sup>1</sup>	WWN of the port added to the created zone	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 444 provisioning.taskResult.createdZoneAliases

Data nesting information		Description	Range
value <sup>1</sup>		List of new zone aliases	
	name	Name of the new zone alias	-
	bnaname	Name of the BNA that manages the settings	-
	fabricName	Name of the fabric in which the settings exist	-
	memberNames <sup>1</sup>	WWN of the port added to the created zone	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 445 provisioning.taskResult.updatedZoneConfigurations

Data nesting information		Description	Range
value <sup>1</sup>		List of zone configurations in which the settings were updated	
	name	Name of the zone configuration in which the settings were updated	-



Data nesting information		Description	Range
	bnaName	Name of the BNA that manages the settings	-
	fabricName	Name of the fabric in which the settings exist	-
	zoneNames <sup>1</sup>	Name of the added zone	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 446 provisioning.taskResult.updatedZones

Data nesting information		Description	Range
value <sup>1</sup>		List of zones in which the settings were updated	
	name	Name of the zone in which the settings were updated	-
	bnaName	Name of the BNA that manages the settings	-
	fabricName	Name of the fabric in which the settings exist	-
	aliasNames <sup>1</sup>	Name of the added zone alias	-
	memberNames <sup>1</sup>	WWN of the added port	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 447 provisioning.taskResult.updatedZoneAliases

Data nesting information		Description	Range
value <sup>1</sup>		List of zone aliases in which the settings were updated	
	name	Name of the zone alias in which the settings were updated	-
	bnaName	Name of the BNA that manages the settings	-
	fabricName	Name of the fabric in which the settings exist	-
	memberNames <sup>1</sup>	WWN of the added port	-

Data nesting information	Description	Range
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.		

## Migrate Data for Online Migration Pair service properties

Use the following properties to modify or create values for the Migrate Data for Online Migration Pair service.

### Migrate Data for Online Migration Pair (edit)

KeyName	Type	Description	Range	Default Value
taskRowsPerPage	integer	Specify the number of tasks displayed on the window at one time.	100, 200, 500, 1000	1000
taskCurrentPage	integer	Specify the page number of tasks displayed in the window.	1 or more	1
targetTaskInfo	file	Select the cutover target task.	See the following File type property list	-
storage_lock_total_wait_time	integer	Specify the lock waiting time upper limit when acquiring the storage lock while change the configuration.	305 - 630720000	604800
responseTimeOut	integer	Specifies the maximum wait time for the response in minutes.	1 - 20160	20160

## File type property list

Table 448 targetTaskInfo

Data nesting information		Description	Range
value			
	instanceID	-	
	name	-	
	toDo	-	
	status	-	
	startTime	-	
	completionTime	-	
	serviceName	-	
	serviceState	-	
	submitter	-	
	notes	-	

## Migrate Data for Online Migration Pair (submit)

KeyName	Type	Description	Range	Default Value
taskRowsPerPage	integer	Specify the number of tasks displayed on the window at one time.	100, 200, 500, 1000	1000
taskCurrentPage	integer	Specify the page number of tasks displayed in the window.	1 or more	1
targetTaskInfo	file	Select the cutover target task.	See the following File type property list	-

## File type property list

Table 449 targetTaskInfo

Data nesting information		Description	Range
value			
	instanceID	-	
	name	-	
	toDo	-	
	status	-	
	startTime	-	
	completionTime	-	
	serviceName	-	
	serviceState	-	
	submitter	-	
	notes	-	

## Migrate Data for Online Migration Pair (task details)

KeyName	Type	Description	Range	Default Value
PrimarySite_PrimaryVolumesLUNPathConfigurationInformation	File	Stores LUN path information for the Source Site from the specified volumes.	See the following File type property list	-
SecondarySite_SecondaryVolumesLUNPathConfigurationInformation	File	Stores allocated LUN path information for the Target Site based on the volume allocation results.	See the following File type property list	-
CopyGroupConfigurationInformation	File	Stores copy group information.	See the following File type property list	-

KeyName	Type	Description	Range	Default Value
DeletedCopyPairsInformation	File	Stores deleted copy pair information.	See the following File type property list	-
DeletedHostGroupsInformation	File	Stores deleted host group/iSCSI target information.	See the following File type property list	-
provisioning.taskResult.createdZoneConfigurations	File	Stores the newly created zone configuration.	See the following File type property list	-
provisioning.taskResult.createdZones	File	Stores the newly created zone information.	See the following File type property list	-
provisioning.taskResult.createdZoneAliases	File	Stores the newly created zone aliases.	See the following File type property list	-
provisioning.taskResult.updatedZoneConfigurations	File	Stores the updated zone configuration.	See the following File type property list	-
provisioning.taskResult.updatedZones	File	Stores the updated zone information.	See the following File type property list	-
provisioning.taskResult.updatedZoneAliases	File	Stores the updated zone aliases.	See the following File type property list	-

## File type property list

**Table 450 PrimarySite\_PrimaryVolumesLUNPathConfigurationInformation,  
SecondarySite\_SecondaryVolumesLUNPathConfigurationInformation**

Data nesting information		Description	Range	Repeatable
value				
	hostPort	-	-	-
	storagePort	-	-	-
	lun	-	-	-
	portType	-	-	-
	capacity	-	-	-
	ldevId	-	-	-
	hostGroupNameOrIscsiTarget	-	-	-
	iscsiTargetName	-	-	-
	model	-	-	-
	serialNumber	-	-	-
	ldevLabel	-	-	-
	resourceGroupName	-	-	-
	virtualLdevId	-	-	-
	virtualModel	-	-	-
	virtualSerialNumber	-	-	-
	configurationManager	-	-	-
	poolId	-	-	-
	tcpPort	-	-	-
	ipv4Address	-	-	-
	ipv6LinkLocalAddress	-	-	-
	ipv6GlobalAddress	-	-	-

**Table 451 CopyGroupConfigurationInformation**

Data nesting information		Description	Range
value			

Data nesting information			Description	Range
	muNumber		-	-
	quorumDiskId		-	-
	siteInformation*			-
		primaryOrSecondary	-	-
		model	-	-
		serialNumber	-	-
		virtualSerialNumber	-	-
		configurationManager	-	-
	createdCopyPairs*			-
		primaryLdevId	-	-
		primaryModel	-	-
		primarySerialNumber	-	-
		secondaryLdevId	-	-
		secondaryModel	-	-
		secondarySerialNumber	-	-
		virtualSerialNumber	-	-
		fenceLevel	-	-
		primaryConfigurationManager	-	-
		secondaryConfigurationManager	-	-
*: Repeatable. Repeatable items must be repeated and must include all lower layer tags.				

Table 452 DeletedCopyPairsInformation

Data nesting information			Description	Range
value				
	muNumber		-	-
	quorumDiskId		-	-
	siteInformation*		-	-
		primaryOrSecondary	-	-

Data nesting information		Description	Range
	model	-	-
	serialNumber	-	-
	virtualSerialNumber	-	-
	configurationManager	-	-
	deletedCopyPairs*		-
	primaryLdevId	-	-
	primaryModel	-	-
	primarySerialNumber	-	-
	secondaryLdevId	-	-
	secondaryModel	-	-
	secondarySerialNumber	-	-
	virtualSerialNumber	-	-
	fenceLevel	-	-
	primaryConfigurationManager	-	-
	secondaryConfigurationManager	-	-

\*: Repeatable. Repeatable items must be repeated and must include all lower layer tags.

Table 453 DeletedHostGroupsInformation

Data nesting information		Description	Range
value *			
	hostGroupNameOrIscsiTarget	-	-
	storagePort	-	-
	portType	-	-
	hostMode	-	-
	hostModeOptions	-	-
	hostGroupNumber	-	-
	model	-	-
	serialNumber	-	-



Data nesting information	Description	Range
*: Repeatable. Repeatable items must be repeated and must include all lower layer tags.		

Table 454 provisioning.taskResult.createdZoneConfigurations

Data nesting information	Description	Range
values*		
	name	New zone configuration name
	bnaname	Switch management server name
	fabricName	Fabric name
	zoneNames	Added zone names
*: Repeatable. Repeatable items must be repeated and must include all lower layer tags.		

Table 455 provisioning.taskResult.createdZones

Data nesting information	Description	Range
values*		
	name	New zone configuration name
	bnaname	Switch management server name
	fabricName	Fabric name
	aliasNames	Added zone alias names
*: Repeatable. Repeatable items must be repeated and must include all lower layer tags.		

Table 456 provisioning.taskResult.createdZoneAliases

Data nesting information	Description	Range
values*		
	name	New zone configuration name
	bnaname	Switch management server name
	fabricName	Fabric name
	memberNames	Added ports

Data nesting information	Description	Range
*: Repeatable. Repeatable items must be repeated and must include all lower layer tags.		

**Table 457 provisioning.taskResult.updatedZoneConfigurations**

Data nesting information	Description	Range	
values*			
	name	New zone configuration name	
	bnaname	Switch management server name	
	fabricName	Fabric name	
	zoneNames	Added zone names	-
*: Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

**Table 458 provisioning.taskResult.updatedZones**

Data nesting information	Description	Range	
values*			
	name	New zone configuration name	-
	bnaname	Switch management server name	-
	fabricName	Fabric name	-
	aliasNames	Added zone alias names	-
*: Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

**Table 459 provisioning.taskResult.updatedZoneAliases**

Data nesting information	Description	Range	
values*			
	name	New Zone Configuration Name	-
	bnaname	Switch Management Server Name	-
	fabricName	Fabric Name	-
	memberNames	Added ports	-

Data nesting information	Description	Range
*: Repeatable. Repeatable items must be repeated and must include all lower layer tags.		

## Remove host from cluster in vCenter service properties

Use the following properties to modify or create values for the Remove Host from Cluster in vCenter Service.

### Remove host from cluster in vCenter service (edit)

KeyName	Type	Description	Range	Default value
vCenterConnection	File	Specify a vCenter Server that is registered as a Web Service Connection in the Administration Tab.	See Following File type property list.	-
ESXCluster	String	Specify the ESX Cluster name.	-	-
ESXHost	File	Specify the ESX Host name.	See Following File type property list.	-
EnterMaintenanceMode	Boolean	Select the check box to enter maintenance mode.	true or false	true
Timeout	Integer	Specify the timeout value in seconds for entering Maintenance Mode.	0-86400	1800

KeyName	Type	Description	Range	Default value
EvacuatePoweredOffVms	Boolean	Select the check box to move the powered-off virtual machines (and suspended virtual machines) to other ESX hosts in the same ESX cluster. If the check box is not selected, powered-off virtual machines are not moved to other ESX hosts when the ESX host is put into maintenance mode. If the check box is selected, the task will not succeed unless all the powered-off virtual machines are move to other hosts.	true or false	true
UnmountDatastoreOption	Boolean	Select the check box to unmount the VMFS datastores before unprovisioning the storage volume.	true or false	true
DeleteHostGroupOption	Boolean	Select the check box to delete the host group.	true or false	true
RemoveZoningOption	Boolean	Select the check box to remove zoning settings.	true or false	false

## File type property list

Table 460 vCenterConnection

Data nesting information		Description	Range
values			
	productName	Product name of registering to Web Service Connection	"vCenter"
	name	Name	-
	ipAddress	IP address	-
	port	Port	-
	protocol	Protocol	-
	userID	User ID	-
	status	Status of connection	-
	connectedTime	Connected time	-

Table 461 ESXHost

Data nesting information		Description	Range
values			
	mold	Mold	-
	name	Name	-
	ipAddress	IP address	-
	wwns	WWNs	-
	clusterName	Cluster Name	-
	clusterMold	Cluster Mold	-
	datastoreNum	Datastore Number	-
	maintenanceMode	Maintenance Mode	-

## Remove host from cluster in vCenter service (submit)

KeyName	Type	Description	Range	Remark	Default value
vCenterConnection	File	Specify a vCenter Server that is registered as a Web Service Connection in the Administration Tab.	See Following File type property list.	-	-
ESXCluster	String	Specify the ESX Cluster name.	-	-	-
ESXHost	File	Specify the ESX Host name.	See Following File type property list.	-	-
EnterMaintenanceMode	Boolean	Select the check box to enter maintenance mode.	true or false	-	true
Timeout	Integer	Specify the timeout value in seconds for entering Maintenance Mode.	0-86400	-	1800

KeyName	Type	Description	Range	Remark	Default value
EvacuatePoweredOffVms	Boolean	Select the check box to move the powered-off virtual machines (and suspended virtual machines) to other ESX hosts in the same ESX cluster. If the check box is not selected, powered-off virtual machines are not moved to other ESX hosts when the ESX host is put into maintenance mode. If the check box is selected, the task will not succeed unless all the powered-off virtual machines are move to other hosts.	true or false	-	true
UnmountDatastoreOption	Boolean	Select the check box to unmount the VMFS datastores before unprovisioning the storage volume.	true or false	-	true

KeyName	Type	Description	Range	Remark	Default value
DeleteHostGroupOption	Boolean	Select the check box to delete the host group.	true or false	-	true
RemoveZoningOption	Boolean	Select the check box to remove zoning settings.	true or false	-	false

**File type property list**

**Table 462 vCenterConnection**

Data nesting information	Description	Range	Remarks	Repeatable
values				
productName	Product name of registering to Web Service Connection	"vCenter"	-	-
name	Name	-	-	-
ipAddress	IP address	-	-	-
port	Port	-	-	-
protocol	Protocol	-	-	-
userID	User ID	-	-	-
status	Status of connection	-	-	-
connectedTime	Connected time	-	-	-

**Table 463 ESXHost**

Data nesting information	Description	Range	Remarks	Repeatable
values				



Data nesting information		Description	Range	Remarks	Repeatable
	modal	Mold	-	-	-
	name	Name	-	-	-
	ipAddress	IP address	-	-	-
	wwns	WWNs	-	-	-
	clusterName	Cluster Name	-	-	-
	clusterMold	Cluster Mold	-	-	-
	datastoreNumber	Datastore Number	-	-	-
	maintenanceMode	Maintenance Mode	-	-	-

## Remove host from cluster in vCenter service (task details)

Use the following information to remove the Host from the Cluster in vCenter Service.

keyName	Type	Description	Range
TheNumberOfSuccessHostGroupDeletion	String	Stores the number of success deleted host group.	
DeletedHostGroupsInformation	File	Stores the deleted host groups/iSCSI target information.	See the "File type property list" section following this table.
WwnRemovalResult	File	Stores the WWN/iSCSI name removal result.	See the "File type property list" section following this table.
DeletedLUNPathConfigurationInformation	File	Stores the deleted LUN path information from the volume unallocation results.	See the "File type property list" section following this table.

keyName	Type	Description	Range
ZoneConfigurationRemovalRequest	File	List of Zone Configuration Removal Requests.	See the "File type property list" section following this table.
ZoneRemovalRequest	File	List of Zone Removal Requests.	See the "File type property list" section following this table.
ZoneAliasRemovalRequest	File	List of Zones Aliases Removal Requests.	See the "File type property list" section following this table.
ZoneConfigurationUpdateRequest	File	List of Zone Configurations Update Requests.	See the "File type property list" section following this table.
ZoneUpdateRequest	File	List of Zones Update Requests.	See the "File type property list" section following this table.
ZoneAliasUpdateRequest	File	List of Zones Aliases Update Requests.	See the "File type property list" section following this table.

### File type property list

**Table 464 DeletedHostGroupsInformation**

Data nesting information	Description	Range
value <sup>1</sup>		
hostGroupNameOrIscsiTarget	Host Group Name or iSCSI Target	-
storagePort	Storage Port	-
portType	Port Type	-
hostMode	HostMode	-
hostModeOptions	HostModeOptions	-

Data nesting information		Description	Range
	hostGroupNumber	Host Group Number	-
	model	Storage Model	-
	serialNumber	Storage SerialNumber	-
	result	Result of Host Group Deletion	"Success" or "Failed"
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 465 WwnRemovalResult

Data nesting information		Description	Range
values <sup>1</sup>			
	hostPort	Host Port	-
	hostGroupOrIscsiTargetInfo <sup>1</sup>	Host Group Name or iSCSI Target Information	-
	model	Storage Model	-
	serialNumber	Storage SerialNumber	-
	storagePort	Storage Port	-
	hostGroupNameOrIscsiTarget	Host Group Name or iSCSI Target	-
	hostGroupNumber	Host Group Number	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 466 DeletedLUNPathConfigurationInformation

Data nesting information		Description	Range
values <sup>1</sup>			
	hostName	Host Group Name or iSCSI Target	-
	hostPortName	Host Port	-

Data nesting information		Description	Range
	portWorldWideName	Storage Port WWN	-
	storageDeviceId	Storage Device ID	-
	portName	Storage Port	-
	portType	Port Type	-
	capacity	Capacity	-
	ldevId	Ldev ID	-
	hostGroupNameOrIscsiTarget	Host Group Name or iSCSI Target Information	-
	hostGroupNumber	Host Group Number	-
	hostMode	HostMode	-
	hostModeOptions	HostModeOptions	-
	storageSystemModel	Storage Model	-
	storageSystemSerialNumber	Storage SerialNumber	-
	ldevLabel	LDEV Label	-
	virtualStorageMachineResourceGroupName	Resource Group Name	-
	virtualModel	Virtual Model	-
	virtualSerialNumber	Virtual Serial Number	-
	virtualLdevId	Virtual LDEV ID	-
	configurationManager	Configuration Manager	-
	poolId	Pool ID	-

1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.

Table 467 ZoneConfigurationRemovalRequest

Data nesting information		Description	Range
values <sup>1</sup>			
	name	Name	-
	bnaname	FOS_PrimarySwitch Name	-

Data nesting information		Description	Range
	fabricName	Fabric Name	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 468 ZoneRemovalRequest

Data nesting information		Description	Range
values <sup>1</sup>			
	name	Name	-
	bnaname	FOS_PrimarySwitch Name	-
	fabricName	Fabric Name	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 469 ZoneAliasRemovalRequest

Data nesting information		Description	Range
values <sup>1</sup>			
	name	Name	-
	bnaname	FOS_PrimarySwitch Name	-
	fabricName	Fabric Name	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

Table 470 ZoneConfigurationUpdateRequest

Data nesting information		Description	Range
values <sup>1</sup>			
	name	Name	-
	bnaname	FOS_PrimarySwitch Name	-
	fabricName	Fabric Name	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

**Table 471 ZoneUpdateRequest**

Data nesting information		Description	Range
values <sup>1</sup>			
	name	Name	-
	bnaname	FOS_PrimarySwitch Name	-
	fabricName	Fabric Name	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

**Table 472 ZoneAliasUpdateRequest**

Data nesting information		Description	Range
values <sup>1</sup>			
	name	Name	-
	bnaname	FOS_PrimarySwitch Name	-
	fabricName	Fabric Name	-
1. Repeatable. Repeatable items must be repeated and must include all lower layer tags.			

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