

# Hitachi Command Suite Hitachi Automation Director

8.5.4

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## REST API User and Reference Guide

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

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# Preface

This document describes how to use the Hitachi Automation Director 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 Automation Director 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 Automation Director v8.5.4-00 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 Hitachi Vantara Support Connect: <https://knowledge.hitachivantara.com/Documents>.

## Referenced documents

Hitachi Automation Director documents:

- *Hitachi Automation Director User Guide*, MK- 92HC205
- *Hitachi Automation Director API Use Case Reference*, MK- 92HC232





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

## 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: <code>pairdisplay -g group</code></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: <code>Status-&lt;report-name&gt;&lt;file-version&gt;.csv</code></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 important or additional information.
	Tip	Provides helpful information, guidelines, or suggestions for performing tasks more effectively.
	Caution	Warns the user of adverse conditions and/or consequences (for example, disruptive operations, data loss, or a system crash).
	WARNING	Warns the user of a hazardous situation which, if not avoided, could result in death or serious injury.

## Conventions for storage capacity values

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

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

Logical capacity unit	Value
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

## Accessing product documentation

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**Thank you!**



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# Chapter 1: About Hitachi Automation Director API

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

Hitachi Automation Director is a software solution that provides the necessary tools to automate and simplify the end-to-end storage provisioning process 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, Automation Director integrates with existing Hitachi Command Suite applications to automate common infrastructure management tasks by utilizing your existing infrastructure services.

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

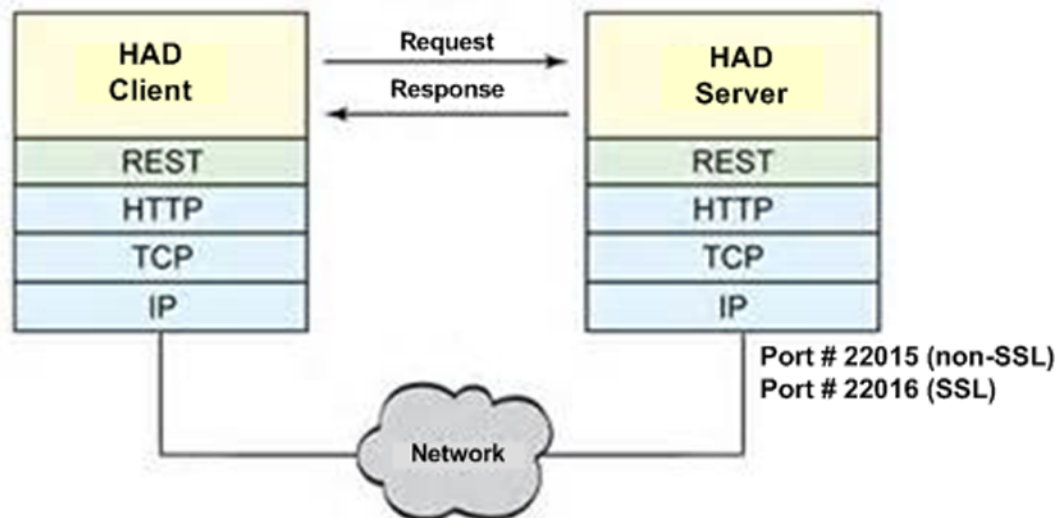
## REST architecture

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 provides 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 Automation Director API functionality

The Hitachi Automation Director REST API provides easy integration of smart provisioning to other tools.

You can use the following API functions to support the smart provisioning tasks of existing third-party tools or proprietary applications:

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

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

## API prerequisites

Hitachi Automation Director requires the following setup to be in place before operation:

- 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 Automation Director User Guide, MK-92HC205*.
- A target service must be created.

## Resources managed through the API

Each entity that you can manage independently in the HAD API is referred to as a resource. The HAD 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 has been configured to perform your provisioning tasks. 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, HAD creates a corresponding task that you can monitor, start, stop, and archive.
TaskHistory	Objects	The task history is a log of run tasks.
PropertyDefinition	Objects	<p>A service is an instance of a service template that has been configured to perform your provisioning tasks. 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 an Exchange 2010 or Oracle ASM server).</p> <p><b>Note:</b> Property definitions are created and added through Service Builder, which is part of the Hitachi Automation Director 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 operations in Hitachi Automation Director.

Resource	Domain	Description
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 provides the log information for a specified task.
Tag group	Objects	A tag group provides 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.
External server connection	Objects	An external server connection is the connection type for the Hitachi Automation Director server.
Host	Objects	The host provides the ID for external server connection.
UserInfo	Other	User information provides information of the user that is currently logged in.
VersionInfo	Other	The Version information is the current HAD version information.

## Identifying a resource

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

All URLs for the Automation Director 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 Automation Director 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 Automation Director APIs
- *version* is the version of the Automation Director API
- *domain* is where the resources exist. Most Automation Director 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:

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

Method	Description
POST	<p>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, cancelling a service or suspending a schedule).</p> <p>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.</p> <p>POST is an asynchronous operation.</p>
PUT	<p>Edits a resource.</p> <p>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.</p> <p>PUT is an asynchronous operation.</p>
DELETE	<p>Deletes a resource.</p> <p>DELETE is an asynchronous operation.</p>

POST, PUT, and DELETE are asynchronous operations. When a request is submitted for one of these methods, you can only tell whether or not 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 Automation Director 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 Automation Director supports both HTTP and HTTPS protocols. For security purposes, use the HTTPS protocol.

## 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 require 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

Header	Description	Supported value	Default
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> or Basic <i>user information</i>	No default value
<p><b>Notes:</b></p> <p>* Only UTF-8 is supported as a character code.</p> <p>** Only a specific URL is effective.</p>			

### 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.	--



Header	Description	Default
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 may 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 Automation Director API.



**Note:** For additional information on roles, see the *Hitachi Command Suite Automation Director User Guide*, MK-92HC205.

**Table 1 Service**

Request	Method	URI	Minimum Role
<a href="#">Getting a list of services (on page 173)</a>	GET	Automation/v1/objects/Services	Submit
<a href="#">Selecting a service (on page 177)</a>	GET	Automation/v1/objects/Services/{id}	Submit
<a href="#">Editing a service (on page 179)</a>	PUT	Automation/v1/objects/Services/{id}	Submit
<a href="#">Deleting a service (on page 183)</a>	DELETE	Automation/v1/objects/Services/{id}	Modify
<a href="#">Getting a list of service actions (on page 184)</a>	GET	Automation/v1/objects/Services/{id}/actions	Submit
<a href="#">Preparing to submit a service (on page 188)</a>	GET	Automation/v1/objects/Services/{id}/actions/submit	Submit

Request	Method	URI	Minimum Role
<a href="#">Submitting a service (on page 190)</a>	POST	Automation/v1/objects/Services/{id}/actions/submit/invoke	Submit
<a href="#">Preparing to reset a service (on page 194)</a>	GET	Automation/v1/objects/Services/{id}/actions/reset	Modify
<a href="#">Resetting the counter of a service (on page 196)</a>	POST	Automation/v1/objects/Services/{id}/actions/reset/invoke	Modify
<a href="#">Preparing to release a service (on page 198)</a>	GET	Automation/v1/objects/Services/{id}/actions/release	Modify
<a href="#">Releasing a service (on page 200)</a>	POST	Automation/v1/objects/Services/{id}/actions/release/invoke	Modify
<a href="#">Preparing to change the configuration type of a service to maintenance (on page 202)</a>	GET	Automation/v1/objects/Services/{id}/actions/maintenance	Modify
<a href="#">Changing the configuration type of a service to maintenance (on page 204)</a>	POST	Automation/v1/objects/Services/{id}/actions/maintenance/invoke	Modify
<a href="#">Preparing to disable a service (on page 207)</a>	GET	Automation/v1/objects/Services/{id}/actions/disable	Modify
<a href="#">Disabling a service (on page 208)</a>	POST	Automation/v1/objects/Services/{id}/actions/disable/invoke	Modify
<a href="#">Getting service help (on page 211)</a>	GET	Automation/v1/objects/Services/{id}/actions/detailhelp	Submit
<a href="#">Preparing to apply a service template (on page 212)</a>	GET	Automation/v1/objects/Services/{id}/actions/applyTemplate	Modify

Request	Method	URI	Minimum Role
<a href="#">Applying a service template (on page 215)</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 218)</a>	GET	Automation/v1/objects/Schedules	Submit
<a href="#">Selecting a targeted service schedule (on page 221)</a>	GET	Automation/v1/objects/Schedules/{id}	Submit
<a href="#">Getting a list of scheduled actions (on page 223)</a>	GET	Automation/v1/objects/Schedules/{id}/actions	Submit
<a href="#">Preparing to cancel a scheduled service (on page 226)</a>	GET	Automation/v1/objects/Schedules/{id}/actions/cancel	Submit
<a href="#">Canceling a scheduled service (on page 228)</a>	POST	Automation/v1/objects/Schedules/{id}/actions/cancel/invoke	Submit
<a href="#">Preparing to suspend a scheduled service (on page 230)</a>	GET	Automation/v1/objects/Schedules/{id}/actions/suspend	Submit
<a href="#">Suspending a scheduled service (on page 232)</a>	POST	Automation/v1/objects/Schedules/{id}/actions/suspend/invoke	Submit
<a href="#">Preparing to resume a scheduled service (on page 235)</a>	GET	Automation/v1/objects/Schedules/{id}/actions/resume	Submit
<a href="#">Resuming a scheduled service (on page 237)</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 239)</a>	GET	Automation/v1/objects/Tasks	Submit
<a href="#">Selecting a task (on page 242)</a>	GET	Automation/v1/objects/Tasks/{id}	Submit
<a href="#">Getting a list of task actions (on page 245)</a>	GET	Automation/v1/objects/Tasks/{id}/actions	Submit
<a href="#">Preparing to stop a task (on page 248)</a>	GET	Automation/v1/objects/Tasks/{id}/actions/stop	Submit
<a href="#">Stopping a task (on page 250)</a>	POST	Automation/v1/objects/Tasks/{id}/actions/stop/invoke	Submit
<a href="#">Preparing to force stop a task (on page 252)</a>	GET	Automation/v1/objects/Tasks/{id}/actions/forcestop/	Submit
<a href="#">Force stopping a task (on page 254)</a>	POST	Automation/v1/objects/Tasks/{id}/actions/forcestop/invoke	Submit
<a href="#">Preparing to resubmit a task (on page 257)</a>	GET	Automation/v1/objects/Tasks/{id}/actions/resubmit	Submit
<a href="#">Resubmitting a task (on page 259)</a>	POST	Automation/v1/objects/Tasks/{id}/actions/resubmit/invoke	Submit
<a href="#">Guide to archiving a task (on page 263)</a>	DELETE	Automation/v1/objects/Tasks/{id}	Modify
<a href="#">Retrieving information to archive a task (on page 264)</a>	GET	Automation/v1/objects/Tasks/{id}/actions/archive	Modify
<a href="#">Archiving a task (on page 266)</a>	POST	Automation/v1/objects/Tasks/{id}/actions/archive/invoke	Modify
<a href="#">Preparing to rerun a task from the failed step (on page 268)</a>	GET	Automation/v1/objects/Tasks/{id}/actions/rerunStart	Submit
<a href="#">Rerunning a task from the failed step (on page 270)</a>	POST	Automation/v1/objects/Tasks/{id}/actions/rerunStart/invoke	Submit

Request	Method	URI	Minimum Role
<a href="#">Preparing to rerun a task after the failed step (on page 272)</a>	GET	Automation/v1/objects/Tasks/{id}/actions/rerunStepStart	Submit
<a href="#">Rerunning a task after the failed step (on page 273)</a>	POST	Automation/v1/objects/Tasks/{id}/actions/rerunStepStart/invoke	Submit
<a href="#">Updating a task (on page 276)</a>	PUT	Automation/v1/objects/Tasks/{id}	Submit
<a href="#">Preparing to respond to a task (on page 279)</a>	GET	Automation/v1/objects/Tasks/{id}/actions/response	Submit
<a href="#">Responding to a task (on page 281)</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 283)</a>	GET	Automation/v1/objects/TaskHistories	Submit
<a href="#">Deleting task histories (on page 286)</a>	DELETE	Automation/v1/objects/TaskHistories	Modify
<a href="#">Selecting a task history (on page 288)</a>	GET	Automation/v1/objects/TaskHistories/{id}	Submit
<a href="#">Deleting a task history (on page 291)</a>	DELETE	Automation/v1/objects/TaskHistories/{id}	Modify
<a href="#">Getting a list of task history actions (on page 292)</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 294)</a>	GET	Automation/v1/objects/PropertyDefinitions	Submit
<a href="#">Getting a property definition (on page 296)</a>	GET	Automation/v1/objects/PropertyDefinitions/{id}	Submit
<a href="#">Getting a list of property definitions actions (on page 298)</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 300)</a>	GET	Automation/v1/objects/PropertyValues	Submit
<a href="#">Getting a property value (on page 302)</a>	GET	Automation/v1/objects/PropertyValues/{id}	Submit
<a href="#">Editing a specified property value (on page 304)</a>	PUT	Automation/v1/objects/PropertyValues/{id}	Modify
<a href="#">Editing multiple instances of a property value (on page 306)</a>	PUT	Automation/v1/objects/PropertyValues	Modify
<a href="#">Getting a list of property values actions (on page 310)</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 312)</a>	GET	Automation/v1/objects/ServiceGroups	Submit

Request	Method	URI	Minimum Role
<a href="#">Creating a service group (on page 314)</a>	POST	Automation/v1/objects/ServiceGroups	Admin
<a href="#">Selecting a service group (on page 316)</a>	GET	Automation/v1/objects/ServiceGroups/{id}	Submit
<a href="#">Editing a service group (on page 317)</a>	PUT	Automation/v1/objects/ServiceGroups/{id}	Admin
<a href="#">Deleting a service group (on page 320)</a>	DELETE	Automation/v1/objects/ServiceGroups/{id}	Admin
<a href="#">Getting a list of service group actions (on page 321)</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 323)</a>	GET	Automation/v1/objects/ServiceGroups/{id}/actions/assign	Admin and User management
<a href="#">Assigning a service group to a user group (on page 325)</a>	POST	Automation/v1/objects/ServiceGroups/{id}/actions/assign/invoke	Admin and User management
<a href="#">Preparing to unassign a service group (on page 328)</a>	GET	Automation/v1/objects/ServiceGroups/{id}/actions/unassign	Admin and User management
<a href="#">Unassigning a service group (on page 330)</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 333)</a>	GET	Automation/v1/objects/ServiceTemplates	Modify



Request	Method	URI	Minimum Role
<a href="#">Selecting a service template (on page 336)</a>	GET	Automation/v1/objects/ServiceTemplates/{id}	Modify
<a href="#">Deleting a service template (on page 338)</a>	DELETE	Automation/v1/objects/ServiceTemplate/{id}	Develop
<a href="#">Getting a list of service template actions (on page 339)</a>	GET	Automation/v1/objects/ServiceTemplates/{id}/actions	Modify
<a href="#">Preparing to import a service template (on page 342)</a>	GET	Automation/v1/services/ServiceTemplates/actions/import	Develop
<a href="#">Importing a service template (on page 343)</a>	POST	Automation/v1/services/ServiceTemplates/actions/import/invoke	Develop
<a href="#">Preparing to export a service template (on page 346)</a>	GET	Automation/v1/objects/ServiceTemplates/{id}/actions/export	Submit
<a href="#">Exporting a service template (on page 347)</a>	POST	Automation/v1/objects/ServiceTemplates/{id}/actions/export/invoke	Develop
<a href="#">Getting service template help (on page 349)</a>	GET	Automation/v1/objects/ServiceTemplates/{id}/actions/detailhelp	Modify
<a href="#">Preparing to bind and run a service template (on page 350)</a>	GET	Automation/v1/objects/ServiceTemplates/{id}/actions/bind	Modify
<a href="#">Binding and running a service template (on page 353)</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 356)</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 360)</a>	GET	Automation/v1/objects/PropertyGroups	Submit

**Table 11 Task log**

Request	Method	URI	Minimum Role
<a href="#">Getting a task log (on page 362)</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 365)</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 367)</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 371)</a>	GET	Automation/v1/objects/ExternalServerConnections	Submit

**Table 15 Host**

Request	Method	URI	Minimum Role
<a href="#">Getting a list of hosts (on page 373)</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 379)</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.

**Table 18 Service**

Attribute	Type	Description	HQL::filter applicable?
instanceID	long	Instance identifier	Y
name	string	Service display name. Internationalization (i18n) and localization (l10n) 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
iconURL	URLString	Icon image of the URL	N

Attribute	Type	Description	HQL::filter applicable?
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

Attribute	Type	Description	HQL::filter applicable?
supportedScheduleType	enum	Schedule types supported by the service. The types 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>	Y
supportedActionType	string	List of supported actions (such as "forciblyStop" or "retry") of task	Y
submitCount	int	Number of times this service was submitted.	Y
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

Table 19 Schedule

Attribute	Type	Description	HQL::filter applicable?
instanceID	long	ID of the instance of the task	Y
name	string	Task name	Y
submitter	string	Name of the user who submitted the task	Y

Attribute	Type	Description	HQL::filter applicable?
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
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

Attribute	Type	Description	HQL::filter applicable?
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 or not 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
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



**Table 20 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
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

Attribute	Type	Description	HQL::filter applicable?
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 (l10n) of name is supported.	Y
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

Attribute	Type	Description	HQL::filter applicable?
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
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

Attribute	Type	Description	HQL::filter applicable?
serviceID	long	ID of the service to which the task belongs.	Y

Table 21 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
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

Attribute	Type	Description	HQL::filter applicable?
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 DayOfWeek (1:Sun to 7:Sat), csv.	N
recurrenceDayOfMonth	string	Interval of monthly job, run specified DayOfMonth, 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
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

Attribute	Type	Description	HQL::filter applicable?
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
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

Attribute	Type	Description	HQL::filter applicable?
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

Table 22 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



Attribute	Type	Description	HQL::filter applicable?
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 shared with other service instances. If the value is set to <code>local</code> , the property cannot be shared.	Y
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> <code>in</code> is used for <code>submit/config</code> . <code>out</code> for <code>taskdetail</code>	Y
required	Boolean	If <code>True</code> , require that the property be specified during the submit action.	Y

Attribute	Type	Description	HQL::filter applicable?
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
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 check the input through this function.  Function (propertyValue, language):string. Returns error message if a value is invalid. 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

Attribute	Type	Description	HQL::filter applicable?
reference	Boolean	Whether or not the value of the property is referring other property values.	N
serviceTemplateID	long	ID of the related service template	Y

**Table 23 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

Attribute	Type	Description	HQL::filter applicable?
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

**Table 24 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

**Table 25 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

Attribute	Type	Description	HQL::filter applicable?
description	string	Description of a user group	N
groupType	string	Type of group Note: For a built-in user-group, Automation Director shows as "Builtin"	N
distinguishedName	string	A distinctive secondary name	N
domainName	string	Name of the domain	N
role	IRoleVO	User group role	N

**Table 26 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

**Table 27 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

**Table 28 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

**Table 29 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

Attribute	Type	Description	HQL::filter applicable?
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
createTime	List of tag names the template applied.	The registered date time of the service template	N
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

Attribute	Type	Description	HQL::filter applicable?
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)
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

**Table 30 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



Attribute	Type	Description	HQL::filter applicable?
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> <li>▪ password</li> <li>▪ list</li> <li>▪ file</li> </ul>	N
visibility	enum	Visibility of the property that represents access control for a service property. Possible values are: <ul style="list-style-type: none"> <li>▪ exec</li> <li>▪ work</li> <li>▪ config</li> </ul> <p><code>exec</code> parameter is visible for submit user on submit/task details. <code>config</code> parameter is only visible for expert user.</p>	N

Attribute	Type	Description	HQL::filter applicable?
scope	enum	The scope of the property. Possible values are: <ul style="list-style-type: none"> <li>local</li> <li>share</li> </ul> Shared property will share with different service instance.	N
description	string	The description of the property. This value can be localize through resource properties.	Y <b>Note:</b> 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 submit/config. out for taskdetail.	N
required	boolean	Returns <code>True</code> , 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

Attribute	Type	Description	HQL::filter applicable?
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 check their input through the function.  Function(propertyValue, language):string. Return error message if value invalid. Otherwise, return nothing.	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
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

Attribute	Type	Description	HQL::filter applicable?
taskID	long	The related taskID	N
scheduleID	long	The related schedule	N

**Table 31 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
validationScript	string	This is the validate function for input property, in javascript. API calls can check their input through the function. Function(propertyValue[ ], language):string[ ]. Return error messages as string array. if value invalid. Otherwise, return nothing.	N

Attribute	Type	Description	HQL::filter applicable?
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

**Table 32 ResponseInput**

Attribute	Type	Description	HQL::filter applicable?
dialogText	string	Body of input response dialog	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

Attribute	Type	Description	HQL::filter applicable?
labelButton8	string	Choice	N
labelButton9	string	Choice	N
screenURL	string	Relative path to start custom UI	N
taskID	long	The taskID	N

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
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

Table 33 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	

**Table 34 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

**Table 35 ExternalServer Connection**

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

Attribute	Type	Description	HQL::filter applicable?
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
active	boolean	Status flag of linked HRpM in the case of Device Manager	N
connectedTime	ISO8601String	The last connected time	N

Table 36 Host

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



Attribute	Type	Description	HQL::filter applicable?
wwnNickname	string	The WWN nickname acquired from HDvM	N
iscsiName	string	The iSCSI name acquired from HDvM	N
ipAddress	string	The IP address info acquired from HDvM	N
operatingSystem	string	The operation system info acquired from HDvM	N
capacityInKb	long	The capacity in Kb info acquired from HDvM	N
cluster	string	The cluster info acquired from HDvM	N
model	string	The model info acquired from HDvM	N
type	string	The type info acquired from HDvM	N
fileServerType	string	The file server type info acquired from HDvM	N
deviceManagerName	string	The device manager name info acquired from HDvM.	N
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 "HDvM name" behind the host name.	N

Attribute	Type	Description	HQL::filter applicable?
hostInfoID	long	The ID of the host	N
externalServerConnectionID	long	The <code>instanceID</code> of the connection information on HDvM	N

Table 37 StorageSystem

Attribute	Type	Description	HQL::filter applicable?
instanceID	string	Instance identifier	Y
storageArrayID	long	Unique ID of HDvM for the storage device.	Y
name	string	Name of the storage device	Y
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 <code>StorageSystemInfo</code>	Y
externalServerConnectionID	long	The <code>instanceID</code> of the connection to HDvM.	Y

## Query string

The query string describes a resource request from the client side and provides 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
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

Parameter	Description	Value	Default	Range	Target
HQL::sortBy	Sort in a specify column.	<column>[{ASC   DESC}]{, <column>[{ASC   DESC}])*	ASC	N/A	GET Collection
page	Acquire the information on a specify page. It is necessary to specify with <code>pageSize</code> . Priority is given over offset, and it changes into offset 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

Parameter	Description	Value	Default	Range	Target
_method	<p>Call a different method than the specified one.</p> <p>Use when PUT, DELETE, or POST are not supported by proxy or client mounting policies.</p> <p>_method is given priority over X-HTTP-Method-Override.</p>	PUT   POST   DELETE	N/A	N/A	All the methods

### 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 Automation Director 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

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

### Syntax

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

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

\* The HAD API does not support this operation.

## Domain object convention

The domain is one of the main resources in HAD. Most HAD 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 Automation Director
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 operation and its transition URL to a resource.

For example, the following operation:

```
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 provides and describes 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
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><code>queued</code>: Indicates that the operation has not yet begun processing. Allowable action in this state is: stop.</p> <p><code>running</code>: Indicates that the operation is still being run. Allowable action in this state is: stop.</p> <p><code>failed</code>: Indicates that the operation failed to complete successfully.</p> <p><code>success</code>: Indicates that the operation completed successfully .</p> <p><code>stopping</code>: Indicates that the operation is stopping. Allowable action in this state is stop.</p> <p><code>stopped</code>: Indicates that the operation 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 provides 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 Automation Director REST API use cases

### Use case reference table

The following table provides a quick reference list that includes the use case category, name (containing a link), description, and 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, go to <https://community.hitachivantara.com/docs/DOC-1007318>.

Category	Use case	Description	UC# (Folder name of sample program)
Find services	<a href="#">Find service by service name (on page 84)</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 86)</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 88)</a>	Change the state of a service to release.	UC_CHANGE_SERVICE_STATUS_TO_RELEASE
	<a href="#">Change service state to maintenance (on page 91)</a>	Change the state of a service to maintenance.	UC_CHANGE_SERVICE_STATUS_TO_MAINTENANCE

Category	Use case	Description	UC# (Folder name of sample program)
	<a href="#">Delete a service by service name (on page 95)</a>	Delete a service by service Name.	UC_DELETE_SERVICE_BY_NAME
Create and Submit Service Request	<a href="#">Create and submit a service request (Execute immediately) (on page 97)</a>	Search for the Allocate Volumes for Generic Application service, then create a service request to allocate volumes to specified host and submit it.	UC_CREATE_REQUEST
	<a href="#">Create and submit service request (Schedule) (on page 102)</a>	Search for the Allocate Volumes for Generic Application 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 after input validation (on page 106)</a>	Find the Allocate Volumes for Generic Application service by filtering services by name, then create a service request to allocate volumes to the specified host and submit if the user's input is valid.	UC_CREATE_REQUEST_AFTER_INPUT_VALIDATION
	<a href="#">Create and submit service request then get the result after the task is completed (on page 112)</a>	Create service request for Allocate Volumes for Generic Application 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 118)</a>	Get LUN Path Information after the task for the Allocate Volumes for Generic Application service is done by using given task id.	UC_GET_RESULT_BY_TASK_ID

Category	Use case	Description	UC# (Folder name of sample program)
Find tasks	<a href="#">Find long-running tasks (on page 121)</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 123)</a>	Find tasks waiting for user's input by filtering tasks by the status of waitingForInput.	UC_GET_TASKS_WAITING_INPUT
Manage tasks	<a href="#">Stop running all tasks by service name (on page 125)</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 129)</a>	Stop running task by task id.	UC_STOP_RUNNING_TASK
	<a href="#">Archive completed tasks (on page 133)</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 137)</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

Category	Use case	Description	UC# (Folder name of sample program)
	<a href="#">Cancel scheduled task by task ID (on page 141)</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 144)</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 148)</a>	Suspend a scheduled task based on task id.	UC_SUSPEND_SCHEDULED_TASK_BY_TASK_ID
	<a href="#">Resume all suspended tasks by service name (on page 151)</a>	Resume all scheduled tasks based on service name.	UC_RESUME_ALL_SCHEDULED_TASKS_BY_SERVICE_NAME
	<a href="#">Resume a suspended task by task ID (on page 155)</a>	Resume a suspended scheduled task for the specified task id.	UC_RESUME_SCHEDULED_TASK_BY_TASK_ID
	<a href="#">Resubmit a task (on page 158)</a>	Resubmit a task.	UC_RESUBMIT_A_TASK
Run a smart provisioning service	<a href="#">Running a smart provisioning service (on page 161)</a>	Run a smart provisioning service by acquiring the service ID and submitting the service.	N/A

Category	Use case	Description	UC# (Folder name of sample program)
Modifying a smart provisioning service	<a href="#">Modifying a smart provisioning service (on page 165)</a>	Modify a smart provisioning service by editing the property list and submitting an updated service.	N/A

## Use cases for finding and managing services

Learn how to use the Automation Director 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, go to <https://community.hitachivantara.com/docs/DOC-1007318>.

### 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 for Generic Application service by filtering services by name.
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 for Generic Application'
```

- Find Allocate Volumes for Generic Application service by filtering services by name.
- Specify the query string `HQL::filter=name='Allocate Volumes for Generic Application'` 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	<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_TOP10_FREQUENTLY_USED_SERVICES</code>.</p>

### 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

- 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. If you want 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 for Generic Application service by filtering services by name, 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 for Generic Application'`
  - Find the Allocate Volumes for Generic Application service by filtering services by name
  - Specify the query string `HQL::filter=name='Allocate Volumes for Generic Application'` 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 for Generic Application'`
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 uri(s) 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':
    service['serviceState'] = 'release'
    uri = uri_creator.create_put_service_uri(service['instanceID'])
    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(e.message)
        print("URI : " + uri)
        sys.exit("failed to connect to REST API server. Please check URI
parameters.")
    except requests.HTTPError as e:
        print(e.message)
        sys.exit("HTTP error.")
    except Exception as e:
        print(e.message)
        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 for Generic Application service by filtering services by name, then update service state to maintenance

Name	Description
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_MAINTENANCE</p>

### REST APIs to call

1. GET `https://host:port/Automation/v1/objects/Services?`  
`HQL::filter=name='Allocate Volumes for Generic Application'`
  - Find the Allocate Volumes for Generic Application service by filtering services by name
  - Specify the query string `HQL::filter=name='Allocate Volumes for Generic Application'` 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 for Generic Application'`
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

Name	Description
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':
    service['serviceState'] = 'maintenance'
    uri = uri_creator.create_put_service_uri(service['instanceID'])
    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(e.message)
        print("URI : " + uri)
        sys.exit("failed to connect to REST API server. Please check URI
parameters.")
    except requests.HTTPError as e:
        print(e.message)
        sys.exit("HTTP error.")
    except Exception as e:
        print(e.message)
        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 for Generic Application 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 for Generic Application'`
  - Find the Allocate Volumes for Generic Application service by filtering services by name
  - Specify the query string `HQL::filter=name='Allocate Volumes for Generic Application'` 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

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

```

## Use cases for creating and submitting service requests

Learn how to use the Automation Director 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, go to <https://community.hitachivantara.com/docs/DOC-1007318>.

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

#### Overview

Search for the Allocate Volumes for Generic Application 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 Allocate Volumes for Generic Application service by filtering services by name, then create a service request to allocate volumes to the specified host and submit it
Files	sample_code.py, uri_creator.py These files are located in the following sample code download folder: UC_CREATE_REQUEST

### REST APIs to call

1. GET `https://host:port/Automation/v1/objects/Services?HQL::filter=name='Allocate Volumes for Generic Application'`
  - Find the Allocate Volumes for Generic Application service by filtering services by name
  - Specify the query string `HQL::filter=name='Allocate Volumes for Generic Application'` 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

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

Name	Description
TARGET_HOST	Target host to which volumes are allocated
HDVM_NAME	Device Manager name to which the target host is registered

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',
"provisioning.hostSetting.targetHosts.value")
hostSettingValue = {
    "values": {
        "deviceManagerName": HDVM_NAME,
        "hosts" : [
            { "name": TARGET_HOST }
        ]
    }
}
hostSetting['value'] = json.dumps(hostSettingValue)

# Update volume settings
volumeSetting = find(submitForm['parameters'], 'keyName',
"provisioning.volumeSetting.volumeSettings.value")
volumeSettingValue = json.loads(volumeSetting['value'])
usageOS = find(volumeSettingValue['values'], "usage", "OS")

```

```

usageOS.update({
    'ldevLabel' : 'OS',
    'capacity' : '10GB'
})
usageApp = find(volumeSettingValue['values'], "usage", "App")
usageApp.update({
    'ldevLabel' : 'App',
    'capacity' : '10GB'
})
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(e.message)
        print("URI : " + uri)
        sys.exit("failed to connect to REST API server. Please check URI
parameters.")
    except requests.HTTPError as e:
        print(e.message)
        sys.exit("HTTP error.")
    except Exception as e:
        print(e.message)
        sys.exit("failed to request.")

```

## Create and submit service request (schedule)

### Overview

Search for the Allocate Volumes for Generic Application 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 Allocate Volumes for Generic Application 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	sample_code.py, uri_creator.py These files are located in the following sample code download folder: UC_CREATE_REQUEST_SCHEDULE.

### REST APIs to call

1. GET `https://host:port/Automation/v1/objects/Services?`  
`HQL::filter=name='Allocate Volumes for Generic Application'`
  - Find the Allocate Volumes for Generic Application service by filtering services by name
  - Specify the query string `HQL::filter=name='Allocate Volumes for Generic Application'` 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 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',
"provisioning.hostSetting.targetHosts.value")
hostSettingValue = {
    "values": {
        "deviceManagerName": HDVM_NAME,
        "hosts" : [
            { "name": TARGET_HOST }
        ]
    }
}
hostSetting['value'] = json.dumps(hostSettingValue)

# Update volume settings
volumeSetting = find(submitForm['parameters'], 'keyName',
"provisioning.volumeSetting.volumeSettings.value")
volumeSettingValue = json.loads(volumeSetting['value'])
usageOS = find(volumeSettingValue['values'], "usage", "OS")
usageOS.update({
    'ldevLabel' : 'OS',
    'capacity' : '10GB'
})
usageApp = find(volumeSettingValue['values'], "usage", "App")
usageApp.update({
    'ldevLabel' : 'App',
    'capacity' : '10GB'
})
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',
    '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(e.message)
        print("URI : " + uri)
        sys.exit("failed to connect to REST API server. Please check URI
parameters.")
    except requests.HTTPError as e:
        print(e.message)
        sys.exit("HTTP error.")
    except Exception as e:
        print(e.message)
        sys.exit("failed to request.")

```

## Create and submit service request after input validation

### Overview

Find the Allocate Volumes for Generic Application service by filtering services by name, then create a service request to allocate volumes to the specified host and submit if the user's input is valid.

Name	Description
Use case title	Create and submit a service request after input validation

Name	Description
Description	Find the Allocate Volumes for Generic Application service by filtering services by name, then create a service request to allocate volumes to specified host and submit it if user input is valid
Files	sample_code.py, uri_creator.py These files are located in the following sample code download folder: UC_CREATE_REQUEST_AFTER_INPUT_VALIDATION

### REST APIs to call

1. GET `https://host:port/Automation/v1/objects/Services?HQL::filter=name='Allocate Volumes for Generic Application'`
  - Find the Allocate Volumes for Generic Application service by filtering services by name
  - Specify the query string `HQL::filter=name='Allocate Volumes for Generic Application'` 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 service request
3. GET `https://host:port/Automation/v1/objects/PropertyDefinitions/?serviceID=instanceID`
  - Acquire the property definition to validate the user input such as volume label and volume capacity
  - Specify the query string `serviceID=instanceID` to get only property definitions related to the service
4. 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
HDVM_NAME	Device Manager name to which target host is registered

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',
"provisioning.hostSetting.targetHosts.value")
hostSettingValue = {
    "values": {
        "deviceManagerName": HDVM_NAME,
        "hosts" : [
            { "name": TARGET_HOST }
        ]
    }
}

```

```

hostSetting['value'] = json.dumps(hostSettingValue)

# Update volume settings
volumeSetting = find(submitForm['parameters'], 'keyName',
"provisioning.volumeSetting.volumeSettings.value")
volumeSettingValue = json.loads(volumeSetting['value'])
usageOS = find(volumeSettingValue['values'], "usage", "OS")
usageOS.update({
    'ldevLabel' : 'OS',
    'capacity' : '10GB'
})
usageApp = find(volumeSettingValue['values'], "usage", "App")
usageApp.update({
    'ldevLabel' : 'App',
    'capacity' : '10GB'
})
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. Acquire the property definition to validate whether the user input is valid.

```

"""
Get Property Definition to check if input is valid
"""
uri = uri_creator.create_get_property_definitions_uri(instanceID)
r = requests.get(uri, headers=headers, auth=(USER, PASS)).json()
volumeSettingDefinition = find(r['data'], 'keyName',
'provisioning.volumeSetting.volumeSettings.definition')
volumeSettingDefinitionValue =
json.loads(volumeSettingDefinition['defaultValue'])
volumeLabelDefinition = volumeSettingDefinitionValue['items']
['properties']['ldevLabel']
volumeCapacityDefinition = volumeSettingDefinitionValue['items']
['properties']['capacity']

"""
Check if volume label is valid
"""
def checkVolumeLabel(value):
    if volumeLabelDefinition['minLength'] > len(value):
        return False
    if volumeLabelDefinition['maxLength'] < len(value):
        return False
    if re.match(volumeLabelDefinition['pattern'], value) == None:
        return False
    return True

```

```

if checkVolumeLabel(usageApp['ldevLabel']) == False:
    print("Label for Usage App is invalid")
if checkVolumeLabel(usageOS['ldevLabel']) == False:
    print("Label for Usage OS is invalid")
if checkVolumeLabel(usageData['ldevLabel']) == False:
    print("Label for Usage Data is invalid")

"""
Get capacity in MB
"""
def getCapacityInMB(value):
    obj = re.match("^[1-9]+[.]?[0-9]*(MB|GB|TB)$", value)
    num = float(obj.group(1))
    if obj.group(2) == "MB":
        num = num * 1
    if obj.group(2) == "GB":
        num = num * 1024
    if obj.group(2) == "TB":
        num = num * 1024 * 1024
    return num

"""
Check if volume capacity is valid
"""
def checkVolumeCapacity(value):
    capacityInMB = getCapacityInMB(value)
    if getCapacityInMB(volumeCapacityDefinition['minValue']) >
capacityInMB:
        return False
    if getCapacityInMB(volumeCapacityDefinition['maxValue']) <
capacityInMB:
        return False
    return True

if checkVolumeCapacity(usageApp['capacity']) == False:
    print("Capacity for Usage App is invalid")
if checkVolumeCapacity(usageOS['capacity']) == False:
    print("Capacity for Usage OS is invalid")
if checkVolumeCapacity(usageData['capacity']) == False:
    print("Capacity for Usage Data is invalid")

```

#### 4. 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 utilities

#### 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_property_definitions_uri(self, serviceID):
        uri = self.create_url_base() + "/objects/PropertyDefinitions?
serviceID=" + str(serviceID)
        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

```

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

```
"""
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(e.message)
        print("URI : " + uri)
        sys.exit("failed to connect to REST API server. Please check URI
parameters.")
    except requests.HTTPError as e:
        print(e.message)
        sys.exit("HTTP error.")
    except Exception as e:
        print(e.message)
        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 for Generic Application 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



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

Name	Description
Description	Create a service request of Allocate Volumes for Generic Application 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 for Generic Application'`
  - Find the Allocate Volumes for Generic Application service by filtering services by name
  - Specify the query string `HQL::filter=name='Allocate Volumes for Generic Application'` 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 check if 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 `provisioning.taskResultRawData.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
HDVM_NAME	Device Manager name to which the target host is registered
LOOP_TIME	Time interval to check if 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',
"provisioning.hostSetting.targetHosts.value")
hostSettingValue = {
    "values": {
        "deviceManagerName": HDVM_NAME,
        "hosts" : [

```

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

```
        { "name": TARGET_HOST }
      ]
    }
  }
  hostSetting['value'] = json.dumps(hostSettingValue)
  # Update volume settings
  volumeSetting = find(submitForm['parameters'], 'keyName',
    "provisioning.volumeSetting.volumeSettings.value")
  volumeSettingValue = json.loads(volumeSetting['value'])
  usageOS = find(volumeSettingValue['values'], "usage", "OS")
  usageOS.update({
    'ldevLabel' : 'OS',
    'capacity' : '10GB'
  })
  usageApp = find(volumeSettingValue['values'], "usage", "App")
  usageApp.update({
    'ldevLabel' : 'App',
    'capacity' : '10GB'
  })
  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 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)
```

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

```
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("provisioning.taskResultRawData.lunPaths")  
  
elem = findElem(r["data"], propertyValueEndsWith)  
lunPaths = json.loads(elem["value"])["values"]  
for lunPath in lunPaths:  
    print("-----")  
    print("Storage\t"+str(lunPath["storageSystemName"]))  
    print("LDEV#\t"+str(lunPath["volLdevId"]))  
    print("LUN\t"+str(lunPath["volLuNumber"]))  
    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_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) + "/"
```

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

```
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

```
"""
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(e.message)
        print("URI : " + uri)
        sys.exit("failed to connect to REST API server. Please check URI
parameters.")
    except requests.HTTPError as e:
        print(e.message)
        sys.exit("HTTP error.")
    except Exception as e:
        print(e.message)
        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 for Generic Application 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 Allocate Volumes for Generic Application service task is done by using the specified task ID.
Files	sample_code.py, uri_creator.py These files are located in the following sample code download folder: UC_GET_RESULT_BY_TASK_ID

### 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 `provisioning.taskResultRawData.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("provisioning.taskResultRawData.lunPaths")
elem = findElem(r["data"], propertyValueEndsWith)

lunPaths = json.loads(elem["value"])["values"]
for lunPath in lunPaths:
    print("-----")
    print("Storage\t"+str(lunPath["storageSystemName"]))
    print("LDEV#\t"+str(lunPath["volLdevId"]))
    print("LUN\t"+str(lunPath["volLuNumber"]))
    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 Automation Director 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, go to <https://community.hitachivantara.com/docs/DOC-1007318>.

### 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: UC_STOP_ALL_RUNNING_TASKS_BY_NAME</p>

### REST APIs to call

1. GET `https://host:port/Automation/v1/objects/Tasks?HQL::filter=serviceName='Allocate Volumes for Generic Application'%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 for Generic Application'%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.
2. 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 check if 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 check if 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(e.message)
        print("URI : " + uri)

```



```

        sys.exit("failed to connect to REST API server. Please check URI
parameters.")
    except requests.HTTPError as e:
        print(e.message)
        sys.exit("HTTP error.")
    except Exception as e:
        print(e.message)
        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: 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 check if 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 check 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(e.message)
        print("URI : " + uri)
        sys.exit("failed to connect to REST API server. Please check URI
parameters.")
    except requests.HTTPError as e:
        print(e.message)
        sys.exit("HTTP error.")
    except Exception as e:
        print(e.message)
        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:</p> <p>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.
- GET `https://host:port/Automation/v1/objects/Tasks/instanceID/actions/archive`
  - Acquire the task property list to archive
- POST `https://host:port/Automation/v1/objects/Tasks/instanceID/actions/archive/invoke`
  - Submit a stop request with the property list
- 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(e.message)
        print("URI : " + uri)
        sys.exit("failed to connect to REST API server. Please check URI
parameters.")
    except requests.HTTPError as e:
        print(e.message)
        sys.exit("HTTP error.")
    except Exception as e:
        print(e.message)
        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

- GET `https://host:port/Automation/v1/objects/Tasks?HQL::filter=serviceName='Allocate Volumes for Generic Application'%20and%20status='waiting'`
  - Get scheduled tasks for the service `Allocate Volumes for Generic Application` by filtering tasks by service name and task status
  - Specify the query string `HQL::filter=serviceName='Allocate Volumes for Generic Application'%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.
- 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
- POST `https://host:port/Automation/v1/objects/Schedules/instanceID/actions/cancel/invoke`
  - Submit a cancellation request with the property list
- GET `https://host:port/Automation/v1/objects/Tasks/instanceID`
  - Get task to check if the status is canceled

For other actions for the scheduled tasks, you can use same approach as above. 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 check if 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

```

"""
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(e.message)
        sys.exit("failed to connect to REST API server. Please check URI
parameters.")
    except requests.HTTPError as e:
        print(e.message)
        sys.exit("HTTP error.")
    except Exception as e:
        print(e.message)
        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
Files	<p>sample_code.py, uri_creator.py</p> <p>These files are located in the following sample code download folder: 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 check if the status is canceled

For other actions for the scheduled tasks, you can use same approach as above. 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 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(task["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 check if 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(e.message)
    print("URI : " + uri)
    sys.exit("failed to connect to REST API server. Please check URI
parameters.")
except requests.HTTPError as e:
    print(e.message)
    sys.exit("HTTP error.")
except Exception as e:
    print(e.message)
    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: 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 for Generic Application'%20and%20status='waiting'`



- Get scheduled tasks for the service `Allocate Volumes for Generic Application` by filtering tasks by service name and task status
  - Specify query string `HQL::filter=serviceName='Allocate Volumes for Generic Application'%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 check if 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 check if 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, schduleID):
    uri = self.create_url_base() + "objects/Schedules/" + str(schduleID)
+ "/actions/suspend"
    return uri

def create_suspend_schedule_task_uri(self, schduleID):
    uri = self.create_url_base() + "objects/Schedules/" + str(schduleID)
+ "/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(e.message)
        sys.exit("failed to connect to REST API server. Please check URI
parameters.")
    except requests.HTTPError as e:
        print(e.message)
        sys.exit("HTTP error.")
    except Exception as e:
        print(e.message)
        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: UC_SUSPEND_SCHEDULED_TASK_BY_TAS K_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 check if 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 check if 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 check if 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, schduleID):
        uri = self.create_url_base() + "objects/Schedules/" + str(schduleID)
        + "/actions/suspend"
        return uri

    def create_suspend_schedule_task_uri(self, schduleID):
        uri = self.create_url_base() + "objects/Schedules/" + str(schduleID)
        + "/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(e.message)
        print("URI : " + uri)
        sys.exit("failed to connect to REST API server. Please check URI
parameters.")
    except requests.HTTPError as e:
        print(e.message)
        sys.exit("HTTP error.")
    except Exception as e:
        print(e.message)
        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

Name	Description
Files	<p>sample_code.py, uri_creator.py</p> <p>These files are located in the following sample code download folder: 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 for Generic Application'%20and%20status='suspended''`
  - Get suspended tasks for the Allocate Volumes for Generic Application service by filtering tasks by service name and task status
  - Specify the query string `HQL::filter=serviceName='Allocate Volumes for Generic Application'%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
- POST `https://host:port/Automation/v1/objects/Schedules/scheduleID/actions/resume/invoke`
  - Submit resume request with property list
- GET `https://host:port/Automation/v1/objects/Tasks/instanceID`
  - Get task to check if 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

- 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 check if 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(e.message)
        sys.exit("failed to connect to REST API server. Please check URI
parameters.")
    except requests.HTTPError as e:
        print(e.message)
        sys.exit("HTTP error.")
    except Exception as e:
        print(e.message)
        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: UC_RESUME_SUSPENDED_TASK_BY_TASK_ID</p>

### REST APIs to call

1. GET `https://host:port/Automation/v1/objects/Tasks/instanceID`
  - Get task by as specified by the task ID
2. 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
3. POST `https://host:port/Automation/v1/objects/Schedules/scheduleID/actions/resume/invoke`
    - Submit a resume request with a property list
  4. GET `https://host:port/Automation/v1/objects/Tasks/instanceID`
    - Get task to check if 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 check if 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(e.message)
        sys.exit("failed to connect to REST API server. Please check URI
parameters.")
    except requests.HTTPError as e:
        print(e.message)
        sys.exit("HTTP error.")
    except Exception as e:
        print(e.message)
        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(e.message)
    print("URI : " + uri)
    sys.exit("failed to connect to REST API server. Please check URI
parameters.")
except requests.HTTPError as e:
    print(e.message)
    sys.exit("HTTP error.")
except Exception as e:
    print(e.message)
    sys.exit("failed to request.")

```

## Running a smart provisioning service

The following use case provides an example of how to run a smart provisioning service.

You can use various tool/program languages to run the Hitachi Automation Director REST APIs. This example uses cURL commands.

In addition, the following values are assumed:

- Target service name is `Allocate Volumes for Microsoft SQL Server`
- host of Hitachi Automation Director `server: vm007223`

These are basic steps to run a smart provisioning service.

### Procedure

1. Acquire the target service ID.
2. Submit the service.
  - a. Acquire a property list for submit.
  - b. Modify the property list.
  - c. Submit service with the modified property list.
3. Check the service run status and result.

## Acquiring the target service ID

Use the following example call to acquire the service ID.

```

curl -v -H "Accept: application/json" -u submituser:submit -X GET
"https://vm007223:22016/Automation/v1/objects/Services"

```

**Run result**

```

{
  "data": [{
    "instanceID": 387,
    "name": "Allocate Like Volumes",
    .....
  }, {
    .....
  }, {
    "instanceID": 4063,
    "name": "Allocate Volumes for Microsoft SQL Server",
    "description": "Intelligent provisioning service that allocates sets of volumes from the
    associated infrastructure group to be consumed by server(s) running Microsoft SQL",
    "tags": "Add New Storage SQL Server",
    .....
    "vendorName": "Hitachi, Ltd.",
    "version": "01.00.00",
    .....
  }
  ]
}

```

In this example, choose "Allocate Volumes for SQL" as a service of submit. The target service ID is "4063".

**Submitting the service**

This major step consists of three substeps:

- Acquiring a property list for submitting.
- Modifying the property list of a service.
- Submitting the service with the modified property list.

**Acquiring a property list for submitting**

Use the following example to acquire the property list.

```

curl -v -H "Accept: application/json" -u submituser:submit -X GET
"https://vm007223:22016/Automation/v1/objects/Services/4063/actions/
submit" >4063submit.json

```



**Note:** In this example, the target service ID is 4063.

**Run result**

```

{
  .....
  "parameters": [{
    "name": "Allocate Volumes for Microsoft SQL Server_20140930185800",
    .....
  }], {
    "instanceID": 4064,
    "type": "file",
    .....
  }, {
    "instanceID": 4064,
    "type": "file",
    "keyName": "provisioning.hostSetting.targetHosts.value",
    "value": "{\r\n \\"values\": {\r\n \\"deviceManagerName\": \"vm007223\", \\"hosts\": [{\\"name\": \"hostSPtest\"}]} \r\n}",
    "readOnly": false,
    "hidden": false,
    "serviceID": 4063
  }
}
    
```

Simple type properties

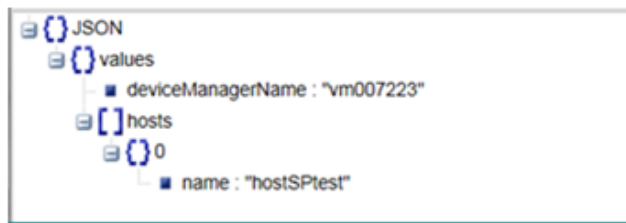
Complex type properties

- ✓All properties (key and value) are listed in the API result.
- ✓You need to check all values are set as what you expect.
- ✓You can change value by editing this list.

### JSON format

```

"keyName": "provisioning.hostSetting.targetHosts.value",
"value": "{\r\n \\"values\": {\r\n \\"deviceManagerName\": \"vm007223\", \\"hosts\": [{\\"name\": \"hostSPtest\"}]} \r\n}",
    
```



### Modifying the property list

This step is done by editing the list with a text editor. However, you can choose any tool or program language.

Here is an example of a modified property list.

```

.....
}, {
  .....
  "instanceID": 4857,
  "type": "file",
  "keyName": "provisioning.hostSetting.targetHosts.value",
  "value": "{\r\n \\"values\": {\r\n \\"deviceManagerName\": \"vm007223\",
  \\"hosts\": [{\\"name\": \"bs2r3-073\"}]} \r\n}",
  "readOnly": false,
  "hidden": false,
  "serviceID": 4870
}, {
  .....
    
```

Change a target host name from "hostSPtest" to "bs2r3-073".

## Submitting the service with the modified property list

Use the following example to submit the service:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u submituser:submit -X POST --data-binary @4063submit.json "https://
vm007223:22016/Automation/v1/objects/Services/4063/actions/submit/invoke"
```



**Note:** The property list is stored as 4063submit.json.

### Run result (excerpt)

```
{
  "instanceID" : "1163cf0a-07df-4a17-bb43-eb58f5964c1",
  "created" : "2014-09-30T19:16:49.402+0900",
  "updated" : "2014-09-30T19:16:49.402+0900",
  "completed" : "2014-09-30T19:16:49.402+0900",
  "state" : "success",
  "affectedResource" : [ "https://vm007223:22016/Automation/v1/objects/
Schedules/23429", "https://vm007223:22016/Automation/v1/objects/Tasks/
23450" ],
  "result" : []
}
```



**Note:** The task ID is 23450 in this example.

## Checking the service results

Use the following example operation to check the results:

```
curl -v -H "Accept: application/json" -u submituser:submit -X GET
"https://vm007223:22016/Automation/v1/objects/PropertyValues?taskID=23450"
```



**Note:** The target task ID is 23450.

### Run results

```
{
  "data" : [ {
    .....
  }, {
    "instanceID" : 23439,
    "type" : "file",
    "keyName" : "provisioning.taskResult.lunPathConfigurationInformation",
    "value" : "{\r\n  \"values\" : [ {\r\n    \"usage\" : \"OS VM\", \r\n
    \"host\" : \"bs2r3-073\", \r\n    \"hostPort\" : \"C0.03.FF.
85.16.90.00.08\", \r\n    \"lun\" : \"2\", \r\n    \"storagePort\" : \"CTL1-B
\", \r\n    \"portType\" : \"FC\", \r\n    \"volume\" : \"445\", \r\n
```

```

\ "dpPool\" : 0, \r\n    \ "storageSystem\" : \ "AMS2100@10.197.73.127\", \r\n
    \ "provisionedCapacity\" : \ "2097152Blocks\", \r\n    \ "capacity\" :
\ "1.0GB\", \r\n    \ "hostGroup\" : \ "bs2r3-073\", \r\n
\ "deviceManagerTaskName\" : \ "Automation_Director_Allocate Volumes for
Microsoft SQL Server_OS_VM_2_0000\", \r\n    \ "deviceManagerName\" :
\ "vm007223\" \r\n }, { \r\n    \ "usage\" : \ "OS VM\", \r\n    \ "host\" :
\ "bs2r3-073\", \r\n    \ "hostPort\" : \ "C0.03.FF.85.16.90.00.0A\",
\ ..... ] \r\n }",
    "readOnly" : false,
    "hidden" : false,
    "taskID" : 23450
}, {
.....
}

```

The example shows the following:

- host: bs2r3-073
- hostPort : C0.03.FF.85.16.90.00.08
- storagePort : CTL1-B
- storageSystem : AMS2100@10.197.73.127

## Modifying a smart provisioning service

The following scenario describes how to edit an existing smart provisioning service, submit the modified service, and verify the related task results.

### Editing the property list of a service

Here are the basic steps to edit the property list:

1. Acquire the target service ID (instance ID).
2. Acquire the property list ID of the service.
3. Acquire the property values.
4. Modify the property values.
5. Save the file.
6. Update the modified property list.

Perform the following detailed steps:

#### Procedure

1. Obtain the instance ID of a provisioning service that you want to edit:

```

curl -v -H "Accept: application/json" -u system:manager -X GET
"https:// <Automation_Director-server-IP-address-or-hostname>:22016/
Automation/v1/objects/Services"

```

The following is an excerpt of an output example.

```
{
  "data" : [ {
    "instanceID" : 11674,
    "name" : "Automation_Director_SERVICE",
    "description" : "Intelligent allocation service that uses sets of
volumes from the associated infrastructure group to be consumed by
server(s) running a generic application",
    "tags" : "Add New Storage",
    "serviceTemplateName" : "Allocate Volumes for Generic Application",
    "createTime" : "2014-11-07T21:22:27.000+09:00",
    "modifyTime" : "2014-11-12T13:03:33.000+09:00",
    "serviceState" : "release",
    "serviceGroupName" : "Default Service Group",
    "iconURL" : "https://10.197.194.100:22016/Automation/icon/
services/com.hitachi.software.dna.cts/SP_GenericApplication/01.00.00",
    "vendorName" : "MyCompany, Ltd.",
    "version" : "01.00.00",
    "lastSubmitTime" : "2014-11-12T12:45:19.000+09:00",
    "favorite" : false,
    "failedCount" : 0,
    "completedCount" : 0,
    "executedCount" : 0,
    "latest" : true,
    "imageURL" : "https://10.197.194.100:22016/Automation/services/
custom/000000000011624/SP_GenericApplication_overview.png",
    "supportedScheduleType" : "immediate,schedule",
    "supportedActionType" : "",
    "submitCount" : 0,
    "serviceTemplateID" : 11624,
    "serviceGroupID" : 3
  } ],
  "count" : 1
}
```



**Note:** The instanceID or serviceID of the service in the example is 11674.

2. Obtain the instance ID of the property list containing the property values that you want to edit (that belong to serviceID "11674").

```
curl -v -H "Accept: application/json" -u system:manager -X GET
"https:// <Automation_Director-server-IP-address-or-hostname>:22016/
Automation/v1/objects/PropertyValues?serviceID=11674"
```

The following is an example of an output excerpt of the property list "11687" with the keyname property

provisioning.volumeSetting.volumeSettings.restriction.

```
"instanceID" : 11687,
"type" : "file",
"keyName" :
"provisioning.volumeSetting.volumeSettings.restriction",
"value" : "{\n  \"type\": \"array\",\n  \"visibility\": \"exec\",
```

```

\n  \"readOnly\": true,\n  \"itemInstances\": [\n    {\n      \"type
\": \"object\", \n      \"properties\": {\n        \"usage\": {\n
  \"type\": \"string\", \n        \"visibility\": \"exec\", \n
  \"readOnly\": true, \n        \"defaultValue\": \"OS\" \n      },
\n      \"numberOfVolumes\": {\n        \"type\": \"integer\", \n
  \"visibility\": \"exec\", \n        \"optionValues\": {}, \n
  \"defaultValue\": \"1\" \n      }, \n      \"capacity\": {\n
  \"type\": \"capacity\", \n        \"visibility\": \"exec\", \n
  \"optionValues\": {}, \n        \"defaultValue\": \"150.0GB
\n      }, \n      \"storageProfile\": {\n        \"type\":
\"list\", \n        \"visibility\": \"exec\", \n        \"readOnly
\": true, \n        \"defaultValue\": \"Gold Write\" \n      }, \n
  \"ldevLabel\": {\n        \"type\": \"string\", \n
  \"visibility\": \"exec\", \n        \"defaultValue\": \"\" \n      },
\n      \"ldevSetting\": {\n        \"type\": \"object\", \n
  \"hidden\": true, \n        \"properties\": {\n
  \"fullAllocation\": {\n        \"type\": \"list\", \n
  \"visibility\": \"config\", \n        \"defaultValue\": \"Disable
\n      }, \n      }, \n      \"lunSetting\":
{\n        \"type\": \"object\", \n        \"hidden\": true, \n
  \"properties\": {\n        \"lunStartsFrom\": {\n
  \"type\": \"hex\", \n        \"visibility\": \"config\", \n
  \"defaultValue\": \"0\" \n      }, \n      }, \n
  }, \n    ] \n  },
  \"readOnly\" : true,
  \"hidden\" : true,
  \"serviceID\" : 11674
}

```



**Note:** To edit the property of a service (in steps 3 and 4), provide new values for the desired parameter(s) and follow these guidelines:

- Property values related to volume settings, must be updated through a pair of keynames as follows:
  - provisioning.volumeSetting.volumeSettings.restriction AND provisioning.volumeSetting.volumeSettings.value
  - allocatelikeyolumes.volumeSetting.volumeSettings.restriction AND allocatelikeyolumes.volumeSetting.volumeSettings.value
  - replication.volumeSetting.volumeSettings.restriction AND replication.volumeSetting.volumeSettings.value
- If the property attribute `type` is a file, and the property is not related to volume settings, edit only the properties of associated keynames that end in `.value`.

3. Run the following command to output the property values from the property list ID 11687 to a file ( `prop11687.json`) that you can later edit.

```

curl -v -H "Accept: application/json" -u system:manager -X GET
"https:// <Automation_Director-server-IP-address-or-hostname>:22016/
Automation/v1/objects/PropertyValues/11687" > prop11687.json

```



**Note:** In this example, the property values will be written to the file `prop11687.json` in your current directory. You can change the directory location (for example), by specifying `C:\Users\YourDirectory\prop11687.json`

4. Use a text editor (such as Notepad) to change the property value `storageProfile` from `Gold` Write to `Silver` (for example).

Your modified file should appear as follows:

```
{
  "instanceID" : 11687,
  "type" : "file",
  "keyName" :
"provisioning.volumeSetting.volumeSettings.restriction",
  "value" : "{\n  \"type\": \"array\", \n  \"visibility\": \"exec\",
\n  \"readOnly\": true, \n  \"itemInstances\": [\n    {\n      \"type
\": \"object\", \n      \"properties\": {\n        \"usage\": {\n
      \"type\": \"string\", \n        \"visibility\": \"exec\", \n
      \"readOnly\": true, \n        \"defaultValue\": \"OS\" \n      },
\n        \"numberOfVolumes\": {\n          \"type\": \"integer\", \n
          \"visibility\": \"exec\", \n          \"optionValues\": {}, \n
          \"defaultValue\": \"1\" \n        }, \n        \"capacity\": {\n
          \"type\": \"capacity\", \n          \"visibility\": \"exec\", \n
          \"optionValues\": {}, \n          \"defaultValue\": \"150.0GB
\n        }, \n        \"storageProfile\": {\n          \"type\":
\"list\", \n          \"visibility\": \"exec\", \n          \"readOnly
\": true, \n          \"defaultValue\": \"Silver\" \n        }, \n
        \"ldevLabel\": {\n          \"type\": \"string\", \n
        \"visibility\": \"exec\", \n          \"defaultValue\": \"\" \n        },
\n        \"ldevSetting\": {\n          \"type\": \"object\", \n
          \"hidden\": true, \n          \"properties\": {\n
        \"fullAllocation\": {\n          \"type\": \"list\", \n
        \"visibility\": \"config\", \n          \"defaultValue\": \"Disable
\n        } \n        }, \n        \"lunSetting\":
{\n          \"type\": \"object\", \n          \"hidden\": true, \n
        \"properties\": {\n          \"lunStartsFrom\": {\n
        \"type\": \"hex\", \n          \"visibility\": \"config\", \n
        \"defaultValue\": \"0\" \n        } \n        } \n      } \n
    } \n  ] \n }",
  "readOnly" : true,
  "hidden" : true,
  "serviceID" : 11674
}
```

5. Save the file.
6. Run the following command to update the values in properties list "11687".

```
curl -v -H "Accept: application/json" -H "Content-Type: application/
json" -u system:manager -X PUT --data-binary @./prop11687.json
"https://<Automation_Director-server-IP-address-or-hostname>:22016/
Automation/v1/objects/PropertyValues/11687"
```



## Submitting an updated service

After you have edited and updated the properties list for a service, you can submit the service to run the related tasks.

The following REST API example modifies the property values of a provisioning service that you can submit through the POST method. The submitted service generates a corresponding task ID that you then can monitor.



**Note:** When you assign new property values to a service, it takes effect when the target service is submitted to run.

### Procedure

1. Run the following command to output the properties of the service you want to submit to the example file, `submit_param11674.json`.

```
curl -v -H "Accept: application/json" -u system:manager -X GET
"https:// <Automation_Director-server-IP-address-or-hostname>:22016/
Automation/v1/objects/Services/11674/actions/submit" >
submit_param11674.json
```

The following is an output excerpt listing the serviceID, 11674.

```
, {
  "instanceID" : 11687,
  "type" : "file",
  "keyName" : "provisioning.volumeSetting.volumeSettings.value",
  "value" : "{\n  \"values\": [\n    {\n      \"usage\": \"OS\",\n      \"numberOfVolumes\": \"1\",\n      \"capacity\": \"150.0GB\",\n      \"storageProfile\": \"Silver\",\n      \"ldevLabel\": \"\",\n      \"lunSetting\": {\n        \"lunStartsFrom\": \"0\"\n      }\n    }\n  ]\n}",
  "readOnly" : false,
  "hidden" : false,
  "serviceID" : 11674
}, {
  "instanceID" : 11673,
  "type" : "file",
  "keyName" : "provisioning.hostSetting.targetHosts.value",
  "value" : "{\r\n  \"values\" : {\r\n  }\r\n}",
  "readOnly" : false,
  "hidden" : false,
  "serviceID" : 11674
} ]
}
```

2. Update the values of the selected properties as in the following example `submit_param11674_edited.json` file:
  - Number of volumes : 1
  - Capacity of volumes: 150GB
  - Allocate host name : "host01"
  - Device Manager name : "Device Manager Machine"

Your modified file must be similar to this:

```

}, {
  "instanceID" : 11687,
  "type" : "file",
  "keyName" : "provisioning.volumeSetting.volumeSettings.value",
  "value" : "{\n  \"values\": [\n    {\n      \"usage\": \"OS\",
\n      \"numberOfVolumes\": \"1\", \n      \"capacity\": \"150.0GB\",
\n      \"storageProfile\": \"Silver\", \n      \"ldevLabel\":
\n      \"\", \n      \"lunSetting\": {\n        \"lunStartsFrom\": \"0\" \n
    } \n  ] \n}",
  "readOnly" : false,
  "hidden" : false,
  "serviceID" : 11674
}, {
  "instanceID" : 11673,
  "type" : "file",
  "keyName" : "provisioning.hostSetting.targetHosts.value",
  "value" : "{\r\n  \"values\" : {\r\n    \"deviceManagerName\" :
\n    \"Device Manager Machine\", \r\n    \"hosts\" : [ {\r\n      \"name
\n      : \"host01\"    } ] \r\n    } \r\n}",
  "readOnly" : false,
  "hidden" : false,
  "serviceID" : 11674
} ]
}

```

### 3. Run the following command to submit the service.

```

curl -v -H "Accept: application/json" -H "Content-Type: application/
json" -u system:manager -X POST --data-binary @submit_param11674.json
"https:// <Automation_Director-server-IP-address-or-hostname>:22016/
Automation/v1/objects/Services/11674/actions/submit/invoke"

```

This is an output example excerpt.

```

{
  "instanceID" : "eb607b90-f17f-48c6-9c24-71df1731537e",
  "created" : "2014-11-12T13:11:50.777+09:00",
  "updated" : "2014-11-12T13:11:50.777+09:00",
  "completed" : "2014-11-12T13:11:50.777+09:00",
  "state" : "success",
  "affectedResource" : [ "https://10.197.194.100:22016/Automation/v1/
objects/Schedules/14273", "https://10.197.194.100:22016/Automation/v1/
objects/Tasks/14293" ]
}

```



**Note:** This example generates a task ID of 14293.

## Confirming the results

After submitting an updated service, you can confirm the results by viewing the associated task ID. Whenever you submit a service, Hitachi Automation Director creates a corresponding task ID.

## Procedure

1. Run the following command by specifying the run task ID (14293) to get the related task information.

```
curl -v -H "Accept: application/json" -u system:manager -X GET
"https://<Automation_Director-server-IP-address-or-hostname>:22016/
Automation/v1/objects/Tasks/14293"
```

This is an example output. The status indicates that the task is completed.

```
{
  "instanceID" : 14293,
  "name" : "Automation_Director_SERVICE_20141112130925",
  "status" : "completed",
  "startTime" : "2014-11-12T13:11:50.000+09:00",
  "completionTime" : "2014-11-12T13:13:52.000+09:00",
  "submitter" : "System",
  "submitTime" : "2014-11-12T13:11:50.000+09:00",
  "modifyTime" : "2014-11-12T13:14:13.000+09:00",
  "serviceState" : "release",
  "scheduleType" : "immediate",
  "description" : "",
  "serviceName" : "Automation_Director_SERVICE",
  "tags" : "Add New Storage",
  "serviceGroupName" : "Default Service Group",
  "toDo" : false,
  "notes" : "",
  "supportedActionType" : "",
  "serviceTemplateID" : 11624,
  "scheduleID" : 14273,
  "serviceGroupID" : 3,
  "serviceID" : 11674
}
```

2. Run following command to get details of a task result.

```
curl -v -H "Accept: application/json" -u system:manager -X GET
"https://<Automation_Director-server-IP-address-or-hostname>:22016/
Automation/v1/objects/PropertyValues?taskID=14293"
```

3. Run the following command to get task schedule information.

```
curl -v -H "Accept: application/json" -u system:manager -X GET
"https://<Automation_Director-server-IP-address-or-hostname>:22016/
Automation/v1/objects/Schedules/14273"
```

This is an example of an output excerpt.

```
{
  "instanceID" : 14273,
```

```
"name" : "Automation_Director_SERVICE_20141112130925",
"submitter" : "System",
"scheduleType" : "immediate",
"createTime" : "2014-11-12T13:11:50.000+09:00",
"modifyTime" : "2014-11-12T13:11:50.000+09:00",
"description" : "",
"serviceState" : "release",
"serviceID" : 11674
}
```

---

## Chapter 3: Hitachi Automation Director REST API command set

This module describes the Automation Director REST API resource commands, defines the structure and syntax, and also provides code examples.

### Services

A service is an instance of a service template that has been configured to work your provisioning needs through Automation Director. An example is a service that automates volume provisioning for a server (through a submit service action). There are several management operations that are available for the Services resource.

### Getting a list of services

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

#### HTTP request syntax (URI)

```
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: 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 is shown below:

```
{
  "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.
400	Bad request	Invalid query parameter.

Status code	HTTP name	Description
401	Unauthorized	No login privilege.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

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

Request header:

```
GET /Automation/v1/objects/Services?serviceGroupID=5011 HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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_Automation_Director_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_Automation_Director_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

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

### HTTP request syntax (URI)

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

### Request

The body of the request must be empty.

### Response

The response body structure is shown below:

```
{
  "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,
  "serviceTemplateID" : service-template-id,
  "serviceGroupID" : service-group-id
}
```

### Return codes

The table below 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.	Invalid privilege or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -X GET https://host:port/Automation/v1/objects/Services/5185
```

Request header:

```
GET /Automation/v1/objects/Services/5185 HTTP/1.1
Authorization: Basic c3lzdGVtOm1hbmFnZXI=
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 is not blacklisted
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_Automation_Director_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
}

```

## Editing a service

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

### HTTP request syntax (URI)

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

### Request

The request body structure is shown below:

```

{
  "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,
"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 shown below:

```

{
  "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,
"serviceTemplateID" : service-template-id,
"serviceGroupID" : service-group-id
}

```

### Return codes

The table below 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	Invalid query parameter.
401	Unauthenticated	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.

### Example code

Request with cURL command:

```

curl -v -H "Accept: application/json" -H "Content-Type: application/json" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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_Automation_Director_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

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

### HTTP request syntax (URI)

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

### Request

The body of the request must be empty.

### Response

None

### Return codes

The table below 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.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -X DELETE https://host:port/Automation/v1/objects/Services/6021
```

Request header:

```
DELETE /Automation/v1/objects/Services/6021 HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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**

The following URI provides you with a list of actions for the Service resource. This request requires a minimum role of Submit.

**HTTP request syntax (URI)**

```
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 shown below:

```
{
  "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 table below 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	Invalid privilege or no service exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -X GET https://host:port/Automation/v1/objects/Services/5185/actions
```

Request header:

```
GET /Automation/v1/objects/Services/5185/actions HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

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

### HTTP request syntax (URI)

```
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 shown below.

```
{
  "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 table below describes the HTTP status codes that can be returned in response to a request.

Statu s code	HTTP name	Description
200	OK	Success.
401	Unauthor ized	No login privilege.
404	Not found	No privilege to get services or no service exists.
412	Precondit ion failed	The server is not available.
500	Server- side error	Server processing error.

### Example

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -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: Basic c3lzdGVtOm1hbmFnZXI=  
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 is not blacklisted  
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

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

**HTTP request syntax (URI)**

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

**Request**

The request body structure is shown below:

```
{
  "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 tables below 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	recurrenceLastDayOfMont h	1
Schedule	recurrenceStartDate	1
Schedule	recurrenceTime	1

## Response

The response body structure is shown below:

```
{
  "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 table below 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	Invalid argument 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.
500	Server-side error	Server processing error.

## Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
```

```

Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO
bcd3f7285cb238fb7d0dcfc6e74ff67cf95388_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

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

### HTTP request syntax (URI)

```
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 shown below.

```

{
  "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 table below 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.

## Example

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

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

### HTTP request syntax (URI)

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

### Request

The request body structure is shown below.

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

### Response

The response body structure is shown below.

```
{
  "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 table below 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	Invalid argument.
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.
500	Server-side error	Server processing error.

### Example

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -u system:manager -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: Basic c3lzdGVtOm1hbmFnZXI=
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 is not blacklisted
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

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 requires a minimum role of Modify.

**HTTP request syntax (URI)**

```
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 shown below.

```

{
  "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 table below 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.

### Example

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

The following URI allows you to change the configuration type of the service to `release`. This request requires a minimum role of `Modify`.

### HTTP request syntax (URI)

```

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

```

### Request

The request body structure is shown below:

```

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

```

### Response

The response body structure is shown below:

```

{
  "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 table below 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	Invalid argument.
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.
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=
User-Agent: curl/7.36.0
```

## Preparing to change the configuration type of a service to maintenance

```
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 is not blacklisted
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO
bcd3f7285cb238fb7d0dcfc6e74ff67cf95388_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

The following URI is the initial step to changing the configuration type of a service to maintenance. This request requires a minimum role of Modify.

### HTTP request syntax (URI)

```
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 shown below.

```
{
  "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 table below 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.

**Example**

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

The following URI allows you to change the configuration type of a service to maintenance. This request requires a minimum role of Modify.

### HTTP request syntax (URI)

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

### Request

The request body structure is shown below:

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

**Response**

The response body structure is shown below:

```
{
  "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 table below 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	Invalid argument.
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.
500	Server-side error	Server processing error.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO
bcd3f7285cb238fb7d0dcfc6e74ff67cf95388_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

The following URI is the initial step to disable a target service. This request requires a minimum role of Modify.

### HTTP request syntax (URI)

```
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 shown below.

```
{
  "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 table below 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.

**Example**

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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**

The following URI allows you to disable a service. This request requires a minimum role of Modify.

**HTTP request syntax (URI)**

```
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 table below 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	Invalid argument.
401	Unauth orized	No login privilege.
404	Not found	No privilege to get services or no service exists.

Status code	HTTP name	Description
409	Conflict	Cannot change service to disable mode due to current status.
412	Precondition failed	The server is not running.
500	Server-side error	Processing error returned by the server.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=
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

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 requires the minimum role of Submit.

### HTTP request syntax (URI)

```

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 shown below:

```

{
  "name" : "export",
  "href" : "Link-to-the-detail-help",
  "method" : "POST",
  "parameters" : []
}

```

### Return codes

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

Stat us code	HTTP name	Description
200	OK	Success.
401	Unaut horize d	No login privilege.
404	Not found	No privilege to get services or no service exists.

Stat us code	HTTP name	Description
412	Precon dition failed	The server is not running.
500	Server -side error	Processing error returned by the server.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -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: Basic c3lzdGVtOm1hbmFnZXI=  
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**

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 requires a minimum role of Modify.

**HTTP request syntax (URI)**

```
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 shown below.

```
{
  "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 table below 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	No privilege to get services or no service exists.
412	Precondition failed	The server is not running.

Stat us cod e	HTTP name	Description
500	Server -side error	Server processing error.

### Example

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=  
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 is not blacklisted  
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_GenericApplication",  
    "displayName" : "Allocate Volumes for Generic Application",  
    "iconURL" : "https://host:port/Automation/icon/services/
```

```

com.hitachi.software.dna.cts/SP_GenericApplication/01.14.00",
  "vendorID" : "com.hitachi.software.dna.cts",
  "version" : "01.14.00",
  "vendorName" : "Hitachi, Ltd.",
  "tags" : "Add New Storage",
  "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 to be consumed by
server(s) running a generic application",
  "releaseState" : "release",
  "latest" : false,
  "imageUrl" : "https://host:port/Automation/services/custom/
00000000002111/SP_GenericApplication_overview.png",
  "supportedScheduleType" : "immediate,schedule",
  "supportedActionType" : "",
  "needVUP" : false,
  "componentOutdated" : true,
  "usedServices" : 1,
  "usedTemplates" : 0
} ]
}

```

## Applying a service template

The following URI allows you to apply a service template. This request requires a minimum role of Submit.

### HTTP request syntax (URI)

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

### Request

The request body structure is shown below:

```

{
  "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 shown below:

```
{
  "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 table below 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	Invalid argument.
401	Unauthorized	No login privilege.



Status code	HTTP name	Description
404	Not found	No privilege to get services or no resource exists.
409	Conflict	Invalid status of the changed destination of the template.
412	Precondition failed	The server is not running.
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-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: Basic c3lzdGVtOm1hbmFnZXI=
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 is not blacklisted
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO
bcdcf3f7285cb238fb7d0dcfc6e74ff67cf95388_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

Automation Director enables you to schedule tasks and services. There are several management operations that are available for the Schedule resource.

### Getting a list of scheduled services

The following URI provides you with 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 requires a minimum role of `Submit`.

#### HTTP request syntax (URI)

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

#### Request

The body of the request must be empty.

Query Parameters	Filter Condition
serviceID	equal to the value
serviceGroupID	equal to the value

Query Parameters	Filter Condition
serviceTemplateID	equal to the value
scheduleStatus	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 shown below:

```
{
  "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 table below describes the HTTP status codes that can be returned in response to a request.

Statu s code	HTTP name	Description
200	OK	Success.
400	Bad Request	Invalid query parameter.
401	Unauth orized	No login privilege.
412	Precond ition Failed	The server is not available.
500	Server- side Error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -u system:manager -X GET https://host:port/Automation/v1/objects/Schedules
```

Request header:

```
GET /Automation/v1/objects/Schedules HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

The following URI allows you to select a schedule and obtain its detailed information. This request requires a minimum role of Submit.

### HTTP request syntax (URI)

```
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 shown below:

```
{
  "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 table below 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	Invalid privilege or no resource exists.
412	Precon dition failed	The server is not available.
500	Server- side error	Server processing error.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-X GET https://host:port/Automation/v1/objects/Schedules/6188
```

Request header:

```
GET /Automation/v1/objects/Schedules/6188 HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO
elf1c1e2b0e7e0b08f43d71309244dcd0f3d2d_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**

The following URI provides you with a list of actions for the Schedule resource. This request requires a minimum role of Submit.

**HTTP request syntax (URI)**

```
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 shown below:

```
{
  "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 table below describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success.
401	Unauthoriz ed	No login privilege.
404	Not found	Invalid privilege or no resource exists



Status code	HTTP name	Description
412	Precondition Failed	The server is not available.
500	Server-side Error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -u system:manager -X GET https://host:port/Automation/v1/objects/Schedules/6188/actions
```

Request header:

```
GET /Automation/v1/objects/Schedules/6188/actions HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

The following URI is the initial step for canceling a scheduled service. This request requires a minimum role of Submit.

### HTTP request syntax (URI)

```
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 shown below:

```

{
  "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 table below 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	Invalid privilege or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

The following URI allows you to complete the action of canceling a scheduled service. This request requires a minimum role of Submit.

### HTTP request syntax (URI)

```
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 shown below:

```
{
  "name" : "cancel",
  "url" : "https://host:port/Automation/version/objects/Schedules/{id}/
actions/cancel/invoke",
  "method" : "POST",
  "parameters" : []
}
```

### Response

The response body structure is shown below:

```
{
  "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 table below 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	Invalid argument
401	Unauthorized	No login privilege.
404	Not found	Invalid privilege or no resource exists.
409	Conflict	The task is not in waiting or holding status.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

The following URI is the initial step for suspending a scheduled service. This request requires a minimum role of Submit.

**HTTP request syntax (URI)**

```
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 shown below:

```
{
  "name" : "suspend",
  "url" : "https://host:port/Automation/version/objects/Schedules/{id}/
actions/suspend/invoke",
  "method" : "POST",
  "parameters" : []
}
```

To complete this action, you must then suspend the service.

### Return codes

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

Statu s code	HTTP name	Description
200	OK	Success.
401	Unaut horize d	No login privilege.
404	Not found	Invalid privilege or no resource exists.
412	Preco nditio n failed	The server is not available.
500	Server -side error	Server processing error.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

The following URI allows you to suspend a scheduled service. This request requires a minimum role of Submit.

**HTTP request syntax (URI)**

```
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 shown below:

```
{
  "name" : "suspend",
  "url" : "https://host:port/Automation/version/objects/Schedules/{id}/
actions/suspend/invoke",
  "method" : "POST",
  "parameters" : []
}
```

### Response

The response body structure is shown below:

```
{
  "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 table below describes the HTTP status codes that can be returned in response to a request.

Statu s code	HTTP name	Used for
200	OK	Success.
400	Bad reques t	Invalid argument.
401	Unauth orized	No login privilege.
404	Not found	Invalid privilege or no resource exists.
409	Conflict	The task is not in waiting status
412	Precon dition failed	The server is not available.
500	Server- side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-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: Basic c3lzdGVtOm1hbWFnZXI=
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

The following URI is the first step to resume a suspended scheduled service. This request requires a minimum role of Submit.

### HTTP request syntax (URI)

```
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 shown below:

```
{
  "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 table below 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	Invalid privilege or no resource exists.
412	Precon dition failed	The server is not available.
500	Server- side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO
4623c51a6d0e21b84dle933b27db36b2256ff47_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

The following URI allows you to resume a scheduled service that has been suspended. This request requires a minimum role of Submit.

### HTTP request syntax (URI)

```
GET https://host:port/Automation/version/objects/Schedules/id/actions/
resume/invoke
```

### Request

The request body structure is shown below:

```
{
  "name" : "resume",
  "url" : "https://host:port/Automation/version/objects/Schedules/{id}/
actions/resume/invoke",
  "method" : "POST",
  "parameters" : []
}
```

### Response

The response body structure is shown below:

```
{
  "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 table below 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	Invalid argument.
401	Unauthorized	No login privilege.
404	Not found	Invalid privilege, 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.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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 Automation Director creates a corresponding task (ID) that you can monitor, start and stop, and archive.

This module covers the management operations available for the Tasks resource.

### Getting a list of tasks

The following URI provides you with a list of tasks. You can identify the `instanceID` of the target task when operating a task. This request requires a minimum role of Submit.

**HTTP request syntax (URI)**

```
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
schedule ID	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 shown below:

```
{
  "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 table below describes the HTTP status codes that can be returned in response to a request.

Stat us code	HTTP name	Description
200	OK	Success.
400	Bad reque st	Invalid query parameter.
401	Unaut horize d	No login privilege.
412	Preco nditio n failed	The server is not available.
500	Server -side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -X GET https://  
host:port  
/Automation/v1/objects/Tasks?serviceID=3569
```

Request header:

```
GET /Automation/v1/objects/Tasks?serviceID=3569 HTTP/1.1  
Authorization: Basic c3lzdGVtOmlhbmFnZXI=  
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 is not blacklisted
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

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 requires a minimum role of Submit.

## HTTP request syntax (URI)

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

### Request

The body of the request must be empty.

### Response

The response body structure is shown below:

```
{
  "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 table below describes the HTTP status codes that can be returned in response to a request.

Stat us code	HTTP name	Description
200	OK	Success.

Stat us code	HTTP name	Description
401	Unaut horize d	No login privilege.
404	Not found.	Invalid privilege or no resource exists.
412	Preco nditio n failed	The server is not available.
500	Server -side error	Server processing error.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -X GET https://  
host:port  
/Automation/v1/objects/Tasks/6148
```

Request header:

```
GET /Automation/v1/objects/Tasks/6148 HTTP/1.1  
Authorization: Basic c3lzdGVtOm1hbmFnZXI=  
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 is not blacklisted  
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

The following URI provides you with a list of actions for the Task resource. This request requires a minimum role of Submit.

### HTTP request syntax (URI)

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

### Request

The body of the request must be empty.

### Response

The response structure is shown below:

```
{
  "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 table below 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.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -X GET https://
host:port
/Automation/v1/objects/Tasks/6148/actions
```

Request header:

```
GET /Automation/v1/objects/Tasks/6148/actions HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

The following URI is the initial step to stopping a task. This request requires a minimum role of Submit.

### HTTP request syntax (URI)

```
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 shown below:

```
{
  "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 table below 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	Invalid privilege or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

The following URI allows you to confirm the stoppage of a task. This request requires a minimum role of Submit.

### HTTP request syntax (URI)

```
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 shown below:

```
{
  "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 table below 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	Invalid argument.
401	Unauthorized	Invalid authentication/authorization credentials. 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	Invalid privilege 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.
500	Server-side error	Processing error returned by the server.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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**

The following URI is the initial step to forcibly stop a task that could not be stopped by the normal stop action. This request requires a minimum role of Submit.

**HTTP request syntax (URI)**

```
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 shown below:

```
{
  "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 table below 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	Unaut horize d	No login privilege.
404	Not found	Invalid privilege or no resource exists.
412	Precon dition failed	The server is not available.
500	Server- side error	Server processing error.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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" : [ ]
}
```

**Force stopping a task**

The following URI allows you to confirm the forced stoppage of a task. This request requires a minimum role of Submit.

**HTTP request syntax (URI)**

```
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 shown below:

```
{
  "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 table below describes the HTTP status codes that can be returned in response to a request.

Status code	HTTP name	Description
200	OK	Success

Statu s code	HTTP name	Description
401	Unaut horize d	No login privilege
404	Not found	Invalid privilege or no resource exists.
412	Precon dition failed	The server is not running.
500	Server- side error	Processing error returned by the server.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

The following URI is the initial step in resubmitting a task. This request requires a minimum role of Submit.

### HTTP request syntax (URI)

```
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 shown below:

```
{
  "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 table below 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	Invalid privilege or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.

## Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

The following URI allows you to resubmit a task. This request requires a minimum role of Submit.

**HTTP request syntax (URI)**

```
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 tables below 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

- 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	recurrenceLastDayOfMont h	1
Schedule	recurrenceStartDate	1
Schedule	recurrenceTime	1

## Response

The response body structure is shown below:

```
{
  "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 table below 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	Invalid argument.
401	Unauthorized	No login privilege.
404	Not found	Invalid privilege 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.
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

The following URI is the initial step to archiving a task to returning the URL of the targeted task. This request requires a minimum role of Modify.

### HTTP request syntax (URI)

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



**Note:** It may become necessary 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 Automation Director 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 table below 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.

Status code	HTTP name	Description
403	Forbidden	No privilege to delete tasks.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -X DELETE https://
host:port
/Automation/v1/objects/Tasks/6148
```

Request header:

```
DELETE /Automation/v1/objects/Tasks/6148 HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

The following URI is the initial step to archiving a task to returning the URL of the targeted task. This request requires a minimum role of Modify.

### HTTP request syntax (URI)

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





**Note:** It may become necessary 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 Automation Director application exceeds 5,000.

### Request

The body of the request must be empty.

### Response

The response body structure is shown below:

```
{
  "name" : "archive",
  "url" : "https://host:port/Automation/version/objects/Tasks/id/actions/archive/invoke",
  "method" : "POST",
  "parameters" : []
}
```

### Return codes

The table below 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	Invalid privilege or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO
49202ee23d4d9551153ald6e7cb410687624424d_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

The following URI allows you to confirm archiving a task that is no longer needed for reuse. This request requires a minimum role of Modify.

**HTTP request syntax (URI)**

```

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 shown below:

```

{
  "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 table below 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	Invalid argument
401	Unauthorized	No login privilege.
404	Not found	Invalid privilege or no resource exists.
409	Conflict	The task is not in Completed, Failed, or Terminated status.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

```

curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

The following URI is the initial step in rerunning a task (including the failed step). This request requires a minimum role of Submit.

**HTTP request syntax (URI)**

```
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 shown below:

```
{
  "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 table below 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	Invalid privilege or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-X GET https://host:port/Automation/v1/objects/Tasks/6148/actions/
rerunStart
```

Request header:

```
GET /Automation/v1/objects/Tasks/6148/actions/rerunStart
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
Server: Cosminexus HTTP Server
Cache-Control: no-cache
WWW-Authenticate: HSSO
689e8cb78d4da2ca16866864bdf6906988688169_Vlo8Y30JdDBUB3ljJSVPaRtjBSA=_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

The following URI allows you to rerun a task (including the failed step). This request requires a minimum role of Submit.

### HTTP request syntax (URI)

```
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 shown below:

```
{
  "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 table below 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	Invalid argument.
401	Unauthorized	No login privilege.
404	Not found	Invalid privilege 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.
500	Server-side error	Server processing error.

## Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
Server: Cosminexus HTTP Server
Cache-Control: no-cache
WWW-Authenticate: HSSO
fe8ad3b95ae23c985d9dfe6616166d80757fcd_v1o8Y30JdDBUB31jJSVPaRtjBSA=_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

The following URI is the initial step in rerunning a task (after the failed step). This request requires a minimum role of Submit.

### HTTP request syntax (URI)

```
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 shown below:

```
{
  "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 table below 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	Invalid privilege or no resource exists.



Status code	HTTP name	Used for
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

The following URI allows you to rerun a task (after the failed step). This request requires a minimum role of Submit.

**HTTP request syntax (URI)**

```
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 shown below:

```
{
  "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 table below 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	Invalid argument.
401	Unauthorized	No login privilege.

Status code	HTTP name	Description
404	Not found	Invalid privilege 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.
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
Server: Cosminexus HTTP Server
Cache-Control: no-cache
WWW-Authenticate: HSSO
cd134d41893282eb4dba7583ac9443ff8cdec9_Vl08Y30JdDBUB3ljJSVPaRtjBSA=_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

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 requires a minimum role of Submit.

### HTTP request syntax (URI)

```
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 shown below:

```
{
  "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 table below 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	Invalid query parameter.
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.
500	Server-side error	Server processing error.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager 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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

The following URI is the initial step responding to a task. This request requires a minimum role of Submit.

### HTTP request syntax (URI)

```
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 shown below:

```

{
  "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 table below 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	Invalid query parameter.
401	Unauthorized	No login privilege.
404	Not found	Invalid privilege or no resource exists.

Status code	HTTP name	Used for
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.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

The following URI allows you to resubmit a task. This request requires a minimum role of Submit.

### HTTP request syntax (URI)

```
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 tables below 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 shown below:

```
{
  "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 table below 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	Invalid argument.
401	Unauthorized	No login privilege.
404	Not found	Invalid privilege 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.

### Example code

Request with cURL command:

```

curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-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: Basic c3lzdGVtOm1hbmFnZXI=
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 is not blacklisted
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 operations available for the Taskhistory resource:

### Getting a list of task histories

The following URI provides you with a list of task histories. This request requires a minimum role of Submit.

**HTTP request syntax (URI)**

```
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 shown below:

```
{
  "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 table below 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	Invalid query parameter.
401	Unauthorized	No login privilege.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -X GET https://
host:port
/Automation/v1/objects/TaskHistories
```

Request header:

```
GET /Automation/v1/objects/TaskHistories HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

The following URI allows you to delete task histories using parameters. This request requires a minimum role of Modify.

**HTTP request syntax (URI)**

```
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 table below 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	Invalid query parameter.
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.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -X DELETE https://
host:port
/Automation/v1/objects/TaskHistories?serviceGroupID=3
```

Request header:

```
DELETE /Automation/v1/objects/TaskHistories?serviceGroupID=3 HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

The following URI allows you to obtain the detailed information of a task history. This request requires a minimum role of Submit.



**Note:** Obtain the ID of the targeted task history by getting the list of task histories.

**HTTP request syntax (URI)**

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

**Request**

The body of the request must be empty.



## Response

The response structure is shown below:

```
{
  "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 table below 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.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-X GET https://host:port/Automation/v1/objects/TaskHistories/6183
```

Request header:

```
GET /Automation/v1/objects/TaskHistories/2188 HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

The following URI allows you to delete the task history of archived tasks that you no longer need. This request requires a minimum role of Modify.

Obtain the `instanceID` of the targeted task history by getting a list of task histories.

### HTTP request syntax (URI)

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

### Request

The body of the request must be empty.

### Response

None

### Return codes

The table below 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.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -X DELETE https://
host:port
/Automation/v1/objects/TaskHistories/2188
```

Request header:

```
DELETE /Automation/v1/objects/TaskHistories/2188 HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

The following URI provides you with a list of actions for the Taskhistory resource. This request requires a minimum role of Submit.

**HTTP request syntax (URI)**

```
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 below:

```

{
  "data" : [ {
    "name" : "delete",
    "url" : "https://host:port/Automation/version/objects/TaskHistories/
{id}",
    "method" : "DELETE",
    "parameters" : []
  } ],
  "count": 1
}

```

**Return codes**

The table below 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	Invalid authentication/authorization credentials. 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	Invalid privilege 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.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -X GET https://
host:port
/Automation/v1/objects/TaskHistories/2188/actions
```

Request header:

```
GET /Automation/v1/objects/TaskHistories/2188/actions HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO
1595fdeeaafd2cf21b546d4b23ec4257c63e53a5_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 operations available for the PropertyDefinition resource:

### Getting a list of property definitions

The following URI provides you with 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 requires a minimum role of Submit.

#### HTTP request syntax (URI)

```
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
serviceTemplateID	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 shown below:

```
{
  "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 table below 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	Invalid authentication/authorization credentials. 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.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager -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 directory. 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: Basic c3lzdGVtOmlhbmFnZXI=
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

The following URI provides you with a list of property definitions. This request requires a minimum role of Submit.

**HTTP request syntax (URI)**

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

**Request**

The body of the request must be empty.

**Response**

The response body structure is shown below:

```
{
  "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 table below 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.	Invalid privilege or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

```

curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager -X
GET https://host:port/Automation/v1/objects/PropertyDefinitions/1459

```

Request header:

```

GET /Automation/v1/objects/PropertyDefinitions/1459 HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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

The following URI provides you with a list of actions for the PropertyDefinition resource. This request requires a minimum role of Submit.

### HTTP request syntax (URI)

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

### Request

The body of the request must be empty.

### Response

The response structure is shown below:

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

### Return codes

The table below 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	Invalid authentication/authorization credentials.
404	Not found	Invalid privilege 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.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager -X
GET https://host:port/Automation/v1/objects/PropertyDefinitions/1459/
actions
```

Request header:

```
GET /Automation/v1/objects/PropertyDefinitions/1459/actions HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 operations available for the PropertyValue resource:

### Getting a list of property values

The following URI provides you with a list of property values for a property definition of a service or task. This request requires a minimum role of Submit.

#### HTTP request syntax (URI)

```
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:** If you want 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 shown below:

```
{
  "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 table below 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	Invalid authentication/authorization credentials. 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.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-X GET https://host:port/Automation/v1/objects/PropertyValues?
serviceID=3569
```

Request header:

```
GET /Automation/v1/objects/PropertyValues?serviceID=3569 HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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

The following URI allows you to select a property value. This request requires a minimum role of Submit.

### HTTP request syntax (URI)

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

**Request**

The body of the request must be empty.

**Response**

The response body structure is shown below:

```
{
  "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 table below 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.	Invalid privilege or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-X GET https://host:port/Automation/v1/objects/PropertyValues/3568
```

Request header:

```
GET /Automation/v1/objects/PropertyValues/3568 HTTP/1.1
Authorization: Basic c3lzdGVtOm1hbmFnZXI=
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 is not blacklisted
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

The following URI allows you to change a property value, after you have edited the property value through an output file. This request requires a minimum role of Modify.



**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`).

**HTTP request syntax (URI)**

```
PUT https://host:port/Automation/version/objects/PropertyValues/id
```

**Request**

The request body structure is shown below:

```

{
  "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 below:

```
{
  "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 table below 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	Invalid property value 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.
500	Server-side error	Server processing error.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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**

The following URI allows you to update multiple instances of the same property value as follows:

- Provides a mass update of the property value to carry out a specific service.

- Updates multiple service share properties.

This request requires 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`).

### HTTP request syntax (URI)

```
PUT https://host:port/Automation/version/objects/PropertyValues
```

### Request

The request body structure is shown below:

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



**Note:** When specifying the `serviceID` as a query, the update about all the non-corresponding resources will be ignored.

Query Parameter	Filter Condition
serviceID	equal to the value



**Note:** 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	instanceID	0..n
PropertyValue	value	0..n

Resource Name	Element Name	Number
PropertyValue	readOnly	0..n
PropertyValue	hidden	0..n



**Note:** The value will not be updated if the `readOnly` attribute is set to true.

### Response

The response body structure is shown below:

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

### Return codes

The table below 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	Invalid query parameter.
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.
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-X PUT --data-binary @./InputParameters.json https://host:port/
Automation/v1/objects
/PropertyValues
```

**Request header:**

```
PUT /Automation/v1/objects/PropertyValues HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

The following URI provides you with a list of actions for the PropertyValue resource. This request requires a minimum role of Submit.

### HTTP request syntax (URI)

```
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 shown below:

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

### Return codes

The table below 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	Invalid privilege or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-X GET https://host:port/Automation/v1/objects/PropertyValues/3568/actions
```

Request header:

```
GET /Automation/v1/objects/PropertyValues/3568/actions HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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 operations in Hitachi Automation Director. This module covers the management operations available for the ServiceGroup resource:

## Getting a list of service groups

The following URI provides you with a list of service groups. This request requires a minimum role of Submit.

### HTTP request syntax (URI)

```
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 shown below:

```
{
  "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 table below 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	Invalid query parameter.
401	Unauthorized	No login privilege.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -X GET https://
host:port/Automation/v1/objects/ServiceGroups
```

Request header:

```
GET /Automation/v1/objects/ServiceGroups HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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" : "Automation_RG_DEFAULT",
    "name" : "Default Service Group",
    "description" : "default service group"
  }, {
    "instanceID" : 2,
```

```

    "objectID" : "Automation_RG_ALL",
    "name" : "All Service Groups",
    "description" : "default service groups which contains all services"
  }, {
    "instanceID" : 2241,
    "objectID" : "RG_14067127004018",
    "name" : "test_Automation_Director_SG_1",
    "description" : "test_Automation_Director_SG_1"
  } ],
  "count" : 3
}

```

## Creating a service 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.



**Note:** After you create a service group, you can assign one or more user groups to this resource group.

### HTTP request syntax (URI)

```
POST https://host:port/Automation/version/objects/ServiceGroups
```

### Request

The request body structure is shown below:

```

{
  "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 shown below:

```

{
  "instanceID" : instance-id,
  "objectID" : "object-id",
  "name" : "name",

```

```
"description" : "description"
}
```

### Return codes

The table below 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	Invalid query parameter 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.
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-X POST --data-binary @./InputParameters.json https://host:port/
Automation/v1
/objects/ServiceGroups
```

Request header:

```
POST /Automation/v1/objects/ServiceGroups HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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_Automation_Director_SG_2",
  "description" : "test_Automation_Director_SG_2"
}
```

## Selecting a service group

The following URI allows you to identify a service group and obtain its detailed information. This request requires a minimum role of Submit.

### HTTP request syntax (URI)

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

### Request

The body of the request must be empty.

### Response

The response body structure is shown below:

```
{
  "instanceID" : instance-id,
  "objectID" : "object-id",
  "name" : "name",
  "description" : "description"
}
```

### Return codes

The table below 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.	Invalid privilege or no resource exists.
412	Precondition failed	The server is not available.

Status code	HTTP name	Description
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -X GET https://
host:port/Automation/v1/objects/ServiceGroups/2255
```

Request header:

```
GET /Automation/v1/objects/ServiceGroups/2255 HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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_Automation_Director_SG_2",
  "description" : "test_Automation_Director_SG_2"
}
```

## Editing a service group

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.

**HTTP request syntax (URI)**

```
PUT https://host:port/Automation/version/objects/ServiceGroups/id
```

**Request**

The request body structure is shown below:

```
{
  "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 shown below:

```
{
  "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 table below 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.
400	Bad request	Invalid argument or the existing service group is specified.
401	Unauthorized	Invalid authentication/authorization credentials.
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.
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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_Automation_Director_SG_3",
  "description" : "test_Automation_Director_SG_3"
}
```

## Deleting a service group

The following URI allows you to delete a service group. The minimum role required to perform this function is Admin.

### HTTP request syntax (URI)

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

### Request

The body of the request must be empty.

### Response

The response structure is shown below:

None

### Return codes

The table below 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.
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.



**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -u system:manager -X DELETE https://host:port/Automation/v1/objects/ServiceGroups/2255
```

Request header:

```
DELETE /Automation/v1/objects/ServiceGroups/2255 HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

The following URI provides you with a list of actions for the ServiceGroup resource. This request requires a minimum role of Submit.

**HTTP request syntax (URI)**

```
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 shown below:

```
{
  "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 table below 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	Invalid privilege or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -X GET https://
host:port/Automation/v1/objects/ServiceGroups/2255/actions
```

Request header:

```
GET /Automation/v1/objects/ServiceGroups/2255/actions HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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**

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.

### HTTP request syntax (URI)

```
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 shown below.

```
{
  "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 table below 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.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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**

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.

**HTTP request syntax (URI)**

```
POST https://host:port/Automation/version/objects/ServiceGroups/id/actions/assign/invoke
```

**Request**

The request body structure is shown below:

```
{
  "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 shown below:

```
{
  "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 table below 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	Invalid argument.
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.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

The following URI is the initial step to unassign a user group. The minimum roles required to perform this function is Admin and UserMgmt.

**HTTP request syntax (URI)**

```
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 shown below.

```
{
  "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 table below 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.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

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.

**HTTP request syntax (URI)**

```
POST https://host:port/Automation/version/objects/ServiceGroups/id/actions/
unassign/invoke
```

**Request**

The request body structure is shown below:

```

{
  "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 shown below:

```
{
  "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 table below 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	Invalid argument.
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.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

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 operation (such as "deleting a service template"). This request requires a minimum role of Modify.

#### HTTP request syntax (URI)

```
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
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 shown below:

```
{
  "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	Invalid query parameter.
401	Unauthorized	No login privilege.
403	Forbidden	No privilege to get service templates.
412	Precondition failed	The server is not running.
500	Server-side error	Server processing error.

## Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -X GET https://host:port/Automation/v1/objects/ServiceTemplates
```

**Request header:**

```
GET /Automation/v1/objects/ServiceTemplates HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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" : 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,Ltd.",
    "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_GenericApplication",
    "displayName" : "Allocate Volumes for Generic Application",
    "iconURL" : "https://host:port/Automation/services/custom/
000000000001116/SP_GenericApplication_overview.png",
```

```

    "supportedScheduleType" : "immediate,schedule",
    "supportedActionType" : "",
    "needVUP" : false,
    "componentOutdated" : false,
    "usedServices" : 0,
    "usedTemplates" : 0
  } ],
  "count" : 2
}

```

## Selecting a service template

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 requires a minimum role of Modify.

### HTTP request syntax (URI)

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

### Request

None

### Response

The response body structure is shown below:

```

{
  "instanceID" : instance-id,
  "keyName" : "key-name",
  "displayName" : "display-name",
  "iconURL" : "icon-URL",
  "vendorID" : "vendor-ID",
  "version" : " version ",
  "vendorName" : "vendor-name",
  "tags" : "tag",
  "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 table below 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.	Invalid privilege or no resource exists.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.

## Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -X GET https://
host:port/Automation/v1/objects/ServiceTemplates/1116
```

Request header:

```
GET /Automation/v1/objects/Services/5185 HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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_GenericApplication",
  "displayName" : "Allocate Volumes for Generic Application",
```

```

"iconURL" : "https://host:port/Automation/icon/services/
com.hitachi.software.dna.cts/SP_GenericApplication/01.20.00",
"vendorID" : "com.hitachi.software.dna.cts",
"version" : "01.20.00",
"vendorName" : "Hitachi, Ltd.",
"tags" : "Add New Storage",
"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 to be consumed by
server(s) running a generic application",
"releaseState" : "release",
"latest" : true,
"imageUrl" : "https://host:port/Automation/services/custom/
000000000001116/SP_GenericApplication_overview.png",
"supportedScheduleType" : "immediate,schedule", "supportedActionType" :
"",
"needVUP" : false,
"componentOutdated" : false,
"usedServices" : 0,
"usedTemplates" : 0
}

```

## Deleting a service template

The following URI allows you to delete a service template. This request requires a minimum role of Develop.

### HTTP request syntax (URI)

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

### Request

The body of the request must be empty.

### Response

None

### Return codes

The table below 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.

Status code	HTTP name	Description
403	Forbidden	This user is not allowed to perform this request. If there is no update privilege, delete the related resource.
409	Conflict	There is a service that is generated from the relevant service template or there is 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.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -X DELETE https://host:port/Automation/v1/objects/ServiceTemplate/6021
```

Request header:

```
DELETE /Automation/v1/objects/ServiceTemplate/6021 HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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

The following URI provides you with a list of actions for the service templates resource. This request requires a minimum role of Modify.

**HTTP request syntax (URI)**

```
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 shown below:

```
{
  "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 table below 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	Invalid privilege or no resource exists.

Status code	HTTP name	Description
412	Precondition failed	The server is not running.
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -X GET https://
host:port/Automation/v1/objects/Services/5185/actions
```

Request header:

```
GET /Automation/v1/objects/Services/5185/actions HTTP/1.1
Authorization: Basic c3lzdGVtOm1hbmFnZXI=
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 is not blacklisted
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

The following URI is the initial step to preparing to import (and copy) the HTML code of a service template from another Hitachi Command Suite server. This request requires a minimum role of Develop.

### HTTP request syntax (URI)

```
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 table below 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	Invalid specification of accept header.
412	Precondition failed	The server is not running.
500	Server-side error	Server processing error.

**Example**

Request with cURL command:

```
curl -v -H "Accept: text/html" -u system:manager -X GET https://host:port/Automation/v1/services/ServiceTemplates/actions/import
```

Request header:

```
GET /Automation/v1/services/ServiceTemplates/actions/import HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

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 requires a minimum role of Develop.

**HTTP request syntax (URI)**

```
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 shown below:

```
{
  "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 table below 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 invalid.
403	Forbidden	No import privilege.
404	Not found	No privilege to get services or no service exists.



Status code	HTTP name	Description
412	Precondition failed	The server is not available or the number of tasks has reached the upper bound.
415	Unsupported media type	Invalid specification of Content-Type header
500	Server-side error	Server-side processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO
bcd3f7285cb238fb7d0dcfc6e74ff67cf95388_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

The following URI is the initial step to preparing to export (and send) a service template to another Hitachi Command Suite server. This request requires a minimum role of Submit.

### HTTP request syntax (URI)

```
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 table below 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 operation, or the Read privilege to the resource is missing.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.

**Example**

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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

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 requires a minimum role of Develop.

**HTTP request syntax (URI)**

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

**Request**

None

**Response**

The response is the ServiceTemplate file.

**Return codes**

The table below 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	Invalid privilege or no resource exists or no export privilege.
406	Not acceptable	Invalid specification of accept header.
412	Precondition failed	The server is not running.
500	Server-side error	Server processing error.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/octet-stream" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO
bcd3f7285cb238fb7d0dcfc6e74ff67cf95388_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

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 requires a minimum role of Modify.

### HTTP request syntax (URI)

```
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 shown below:

```
{
  "name" : "export",
  "href" : "Link-to-the-detail-help",
  "method" : "POST",
  "parameters" : []
}
```

### Return codes

The table below 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 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.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=
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

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 operation (Bind) of the target service template. This request requires a minimum role of Modify.

### HTTP request syntax (URI)

```
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 shown below.

```
{
  "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 table below 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 template exists.
412	Precondition failed	The server is not running.
500	Server-side error	Server processing error.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO
77efd47709df8b7f65468cb4778e804db1e6c_Vl08Y30JdDBUB31jJSVPartjBSA=_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

The following URI allows you to add a service along with the binded/selected property values and then run the service template. This request requires a minimum role of Modify.

### HTTP request syntax (URI)

```
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 shown below.

```
{
  "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 table below 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: - Invalid argument. - The privileges assigned to the service group is invalid. - The existing service name is already specified. - The number of services and number of tags has reached the maximum limit.
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.
500	Server-side error	Server processing error.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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 operations available for the PropertyInformation resource:

### Getting a list of property information

The following URI provides you with 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 requires a minimum role of Submit.

#### HTTP request syntax (URI)

```
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: ? [parameter name] or ? [parameter name]=



**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 shown below:

```
{
  "data": [ {...} ],
  "count" : 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 table below 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.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager -X
GET https://host:port/Automation/v1/objects/PropertyInformations?
serviceID=2004
```

Request header:

```
GET /Automation/v1/objects/PropertyInformations?serviceID=2004 HTTP/1.1
Authorization: Basic c3lzdGVtOm1hbmFnZXI=
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 operations available for the PropertyGroup resource.

### Getting a list of property groups

The following URI provides you with a list of property groups for a service or task. This request requires a minimum role of Submit.

#### HTTP request syntax (URI)

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

#### Request

The body of the request must be empty.

Query Parameters	Filter Condition
serviceTemplateID	equal to the value
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:** If you want 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 shown below:

```
{
  "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 table below 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	Invalid query parameter.
401	Unauthorized	No login privilege.
412	Precondition failed	The server is not running.
500	Server-side error	Processing error returned by the server.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -H "Content-Type: application/json" -
u system:manager
-X GET https://host:port/Automation/v1/objects/PropertyGroups?
serviceID=3134
```

Request header:

```
GET /Automation/v1/objects/PropertyGroups?serviceID=3134 HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 operations available for the TaskLog resource.

### Getting a task log

The following URI provides you with task log for a specified task. You can identify the `instanceID` of the target task when operating a task. This request requires a minimum role of Submit.

#### HTTP request syntax (URI)

```
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: ? [parameter name] or ? [parameter name]=)

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 shown below:

```
{
  "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 table below 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	Invalid query parameter.
401	Unauthorized	No login privilege.
412	Precondition failed	The server is not running.
500	Server-side error	Server processing error.

## Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -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: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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 operations available for the TagGroup resource.

### Getting a list of tag groups

The following URI performs two operations:

- 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 requires a minimum role of Submit.

#### HTTP request syntax (URI)

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

#### Request

None

#### Response

The response body structure is shown below:

```

{
  "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 table below 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.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -X GET https://
host:port
/Automation/v1/objects/TagGroups
```

Request header:

```
GET /Automation/v1/objects/TagGroups HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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,Windows,Linux,Execute Script,Report Volume
Information to Replication Manager"
} ],
"count" : 4
}

```

## Tags

This module covers the management operations available for the Tag resource.

### Getting a list of tags for a resource

The following URI provides you with a list of tags that correspond to one of the following resource types:

- ServiceTemplate
- Service
- Task
- TaskHistory

This request requires 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: ? [parameter name] or ? [parameter name]=
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 shown below:

```
{
  "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 table below 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.



**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -X GET https://
host:port
/Automation/v1/objects/Tags
```

Request header:

```
GET /Automation/v1/objects/Tags HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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 operations available for the ExternalServerConnection resource.

### Getting a list of external server connections

The following URI allows you to obtain a list of service connections (such as HCSCConnection, vCenterConnection, and so on). This request requires a minimum role of Submit.

#### HTTP request syntax (URI)

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

#### Request

The body of the request must be empty.

#### Response

The response body structure is shown below:

```
{
  "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	Invalid query parameter.
401	Unauthorized	No login privilege.
403	Forbidden	No reference privilege
412	Precondition failed	The server is not running.

Status code	HTTP name	Description
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -X GET https://
host:port/Automation/v1/objects/ExternalServerConnections
```

Request header:

```
GET /Automation/v1/objects/ExternalServerConnections HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO
34dfb124a5fcefc089f853d1391341dfbee4cb_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 operations available for the Host resource:

### Getting a list of hosts

The following URI provides you with a list of hosts. This request requires a minimum role of Submit.

#### HTTP request syntax (URI)

```
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 shown below:

```
{
  "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 table below 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	Invalid query parameter.
401	Unauthorized	No login privilege.
412	Precondition failed	The server is not available.
500	Server-side error	Server processing error.

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -X GET https://
host:port/Automation/v1/objects/Hosts
```

Request header:

```
GET /Automation/v1/objects/Hosts HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
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" : "00.00.00.00.00.00.06, 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" : "00.00.00.00.00.00.10, 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 operations available for the StorageSystem resource.

### Getting a list of storage systems

The following URI allows you to obtain a list of storage systems. This request requires a minimum role of Submit.

**HTTP request syntax (URI)**

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

**Request**

The body of the request must be empty.

**Response**

The response body structure is shown below:

```
{
  "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	Invalid query parameter.
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.

**Example code**

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -X GET https://
host:port/Automation/v1/objects/StorageSystems
```



**Request header:**

```
GET /Automation/v1/objects/StorageSystems HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO
34dfb124a5fcefc089f853d1391341dfbee4cb_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

The following URI provides you with information about the current user. This resource requires a minimum role of Submit.

**HTTP request syntax (URI)**

```
GET https://host:port/Automation/version/user
```

**Request**

The body of the request must be empty.

**Response**

The response body structure is shown below:

```
{
  "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" -u system:manager -X GET https://
host:port/Automation/v1/user
```

Request header:

```
GET /Automation/v1/user HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
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 is not blacklisted
Server: Cosminexus HTTP Server
Access-Control-Expose-Headers: WWW-Authenticate
WWW-Authenticate: HSSO
2367971783cfae1f2041f3fffd4866da75763_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

The following URI provides you with information about the current product and API versions. This resource requires a minimum role of Submit.

### HTTP request syntax (URI)

```
GET https://host:port/Automation/version/configuration/version
```

### Request

The body of the request must be empty.

### Response

The response structure is shown below:

```
{
  "productName" : "product-name",
  "product Version " : "product-version",
  "apiVersion" : "api-version"
}
```

### Example code

Request with cURL command:

```
curl -v -H "Accept: application/json" -u system:manager -X GET https://
host:port/Automation/v1/configuration/version
```

Request header:

```
GET /Automation/v1/configuration/version HTTP/1.1
Authorization: Basic c3lzdGVtOmlhbmFnZXI=
User-Agent: curl/7.36.0
```

```
Host: host:port
Accept: application/json
```

#### Response header:

```
HTTP/1.1 200 OK
Date: Wed, 30 Jul 2014 07:55:28 GMT
* Server Cosminexus HTTP Server is not blacklisted
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 Automation Director",
  "productVersion" : "8.4.1-00",
  "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	Missing or invalid request contents.
401	Unauthorized	Invalid authentication/authorization credentials. 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.



**Note:** The table provides general descriptions of each status code. Specific information and descriptions may 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 HAD API.

The public log (`logs/Server*.log`) contains the error message when an error occurs.

## API resource map

The table below provides 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>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
	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/ <i>&lt;instancel D&gt;</i>.</li> <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;instancel D&gt;</i>.</li> </ol>



GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
			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 PropertyV alues? <code>serviceID=&lt;serviceID&gt;</code>, and acquire a list of PropertyV alues.</li> <li>3. Identify and edit the target <code>instanceID</code> from the list of PropertyV alues.</li> <li>4. Specify the object edited at 3) as an argument, and invoke the PUT method of PropertyV alues/</li> </ol>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
				<instancel D>.
	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;instancel D&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 ID&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 ID&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>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
			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 Task.</li> </ol>
			scheduleID	<ol style="list-style-type: none"> <li>1. Invoke the GET method of Schedule and acquire schedule list.</li> <li>2. Identify the target instance ID from schedule list, specify it as a query, and invoke the GET method of Task.</li> </ol>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
		Display task details dialog.	N/A	Acquire task summary <ol style="list-style-type: none"> <li>1. Invoke the GET method of Task and acquire task list.</li> <li>2. Identify the target <code>instance ID</code> from task list and invoke the GET method of Tasks/ <code>&lt;instanceID&gt;</code>.</li> </ol>
			N/A	Acquire task property <ol style="list-style-type: none"> <li>1. Invoke the GET method of Task and acquire task list.</li> <li>2. Identify the target <code>taskID</code> from task list and invoke the GET method of PropertyV alue? <code>taskID=taskID</code>.</li> </ol>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
		Suspend 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/ <i>&lt;instance/ D&gt;/ actions/ suspend.</i></li> <li>3. Edit the return value of 2) and invoke the POST method of Services/ <i>&lt;instance/ D&gt;/ actions/ suspend/ invoke.</i></li> </ol>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
		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;instanceID&gt;/ actions/ cancel.</li> </ol> <p>) Edit the return value of 2) and invoke the POST method of Services/ &lt;instanceID&gt;/ actions/cancel/ invoke.</p>



GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
		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/ <i>&lt;instance/ D&gt;/ actions/ resume.</i></li> <li>3. Edit the return value of 2) and invoke the POST method of Services/ <i>&lt;instance/ D&gt;/ actions/ resume/ invoke.</i></li> </ol>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
		Resubmit 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 <i>instance ID</i> from task list and invoke the GET method of Tasks/ <i>&lt;instance D&gt;/actions/resubmit</i>.</li> <li>3. Edit the return value of 2) and invoke the POST method of Tasks/ <i>&lt;instance D&gt;/actions/resubmit/invoke</i>.</li> </ol>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
		Archive 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 <i>instance ID</i> from task list and invoke the GET method of Tasks/ <i>&lt;instance ID&gt;/actions/archive</i>.</li> <li>3. Edit the return value of 2) and invoke the POST method of Tasks/ <i>&lt;instance ID&gt;/actions/archive/invoke</i>.</li> </ol>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
		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 <code>instance ID</code> from task list and invoke the GET method of <code>Tasks/&lt;instanceID&gt;/actions/stop</code>.</li> <li>3. Edit the return value of 2) and invoke the POST method of <code>Tasks/&lt;instanceID&gt;/actions/stop/invoke</code>.</li> </ol>
	Task History List	Acquire the task history.	N/A	Invoke the GET method of TaskHistory and acquire task history list.

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
			start	Specify the start date & time (start) as a query, invoke the GET method of TaskHistory, and acquire a task history list.
			end	Specify the end date & 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	There is no method 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 <i>instance ID</i> from resource group list, and invoke the GET method of ServiceGroups/<i>&lt;instanceID&gt;</i>.</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/<i>&lt;instanceID&gt;</i>.</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/<i>&lt;instanceID&gt;</i>.</li> </ol>



GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
	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> <li>2. Identify the target <i>instance ID</i> 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 <i>UserGroupName</i> by confirming it on GUI.</li> <li>4. Specify the object edited at 3) as an argument, and invoke</li> </ol>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
				the POST method of ServiceGroups/ <instanceID>/actions/assign/invoke.

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 <i>instance ID</i> 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 <i>UserGroupName</i> by confirming it on GUI.</li> <li>4. Specify the object edited at 3) as an argument, and invoke</li> </ol>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
				the POST method of ServiceGro ups/ <instance/ D>/ actions/ assign/ invoke.

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
	Edit User Group/Delete Resource Group	Remove the resource group from 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 <i>instance ID</i> from resource group list, and invoke the GET method of ServiceGroups/<i>&lt;instanceID&gt;/actions/unassign</i>.</li> <li>3. Edit the unassign object of the response of 2). Specify the user group name set as <i>UserGroupName</i> by confirming it on GUI.</li> <li>4. Specify the object edited at 3) as an argument, and invoke</li> </ol>

GUI				
Tab	Window	Operation/ Condition	Filter by Query	Resource
				the POST method of ServiceGroups/ <instanceID>/actions/unassign/invoke.

## Appendix B: Service and content properties list

Use these properties to modify or create values for the following services and contents:



**Note:** The term "VSP Gx00" refers to the VSP G200, G400, G600, and G800 product models. The term "VSP Fx00" refers to the VSP F400, F600, and F800 product models.

### Content properties

Use these content properties when modifying or creating values for services.

key Name	display Name	Description
provisioning.volumeSetting .volumeSettings.definition	Definition of Volume Settings	The data structure definition of the [Volume Settings] property is described in this property. Do not change the property. If you change this property, the service might fail when run.
provisioning.advancedOpti on.advancedOptions.defini tion	Definition of Advanced Options for Volume	The data structure definition of the [Advanced Options] property is described in this property. Do not change the property. If you change this property, the service might fail when run.
provisioning.hostSetting.tar getHosts.definition	Definition of Target Hosts	The data structure definition of the [Target Hosts] property is described in this property. Do not change the property. If you change this property, the service might fail when run.

key Name	display Name	Description
provisioning.hostSetting.refVmwareControl	Control of the display items for services with the Create Datastore Plug-in in [Host Settings]	This property displays items for services with the Create Datastore Plug-in in [Host Settings]. Enable the property if you want to run the Create Datastore Plug-in after the Allocate Volumes Plug-in. In other cases, Disable the property.
provisioning.control.vmwareControl	Control of services with the Create Datastore Plug-in	This property runs the Create Datastore Plug-in after using the Allocate Volumes Plug-in. Enable this property if you want to run the Create Datastore Plug-in after the Allocate Volumes Plug-in. In other cases, Disable the property.
provisioning.control.replicationControl	Control of services with the Replication	This property runs the Replication Plug-in after using the Allocate Volumes Plug-in. Enable this property if you want to run the Replication Plug-in after the Allocate Volumes Plug-in. In other cases, Disable the property.
provisioning.volumeSetting.volumeSettings.definition	Definition of Volume Settings	The data structure definition of the [Volume Settings] property is described in this property. Do not change the property. If you change this property, the service might fail when run.
provisioning.advancedOption.advancedOptions.definition	Definition of Advanced Options	The data structure definition of the [Advanced Options] property is described in this property. Do not change the property. If you change this property, the service might fail when run.



key Name	display Name	Description
provisioning.hostSetting.targetHosts.definition	Definition of Target Hosts	The data structure definition of the [Target Hosts] property is described in this property. Do not change the property. If you change this property, the service might fail when run.
provisioning.hostSetting.refVmwareControl	Control of the display items for services with the Create Datastore Plug-in in [Host Settings]	This property displays items for services with the Create Datastore Plug-in in [Host Settings]. Enable the property if you want to run the Create Datastore Plug-in after the Allocate Volumes Plug-in. In other cases, disable the property.
provisioning.control.vmwareControl	Control of services with the Create Datastore Plug-in	This property runs the Create Datastore Plug-in after using the Allocate Volumes Plug-in. Enable this property if you want to run the Create Datastore Plug-in after the Allocate Volumes Plug-in. In other cases, Disable the property.
provisioning.control.replicationControl	Control of services with the Replication	This property runs the Replication Plug-in after using the Allocate Volumes Plug-in. Enable this property if you want to run the Replication Plug-in after the Allocate Volumes Plug-in. In other cases, disable the property.
replication.volumeSetting.secondaryVolumeSettings.definition	Definition of Secondary Volume Settings	The data structure definition of the [Secondary Volume Settings] property is described in this property. Do not change the property. If you change this property, the service might fail when run.

key Name	display Name	Description
replication.advancedOptions.advancedOptions.definition	Definition of Secondary Advanced Options	The data structure definition of the [Secondary Advanced Options] property is described in this property. Do not change the property. If you change this property, the service might fail when run.
replication.hostSetting.targetHosts.definition	Definition of Secondary Target Hosts	The data structure definition of the [Secondary Target Hosts] property is described in this property. Do not change the property. If you change this property, the service might fail when run.
replication.control.vmwareControl	Control of services with the Create Datastore Plug-in	"This property runs the Create Datastore Plug-in after using the Replication Plug-in. Enable this property if you want to run the Create Datastore Plug-in after the Replication Plug-in. In other cases, disable the property."
replication.control.replicationControl	Control of services with the Replication	This property runs the Replication Plug-in after using the Allocate Volumes Plug-in. Enable this property if you want to run the Replication Plug-in after the Allocate Volumes Plug-in. In other cases, Disable the property.
replication.hostSetting.refVmwareControl	Control of the display items for services with the Create Datastore Plug-in in [Host Settings]	This property displays items for services with the Create Datastore Plug-in in [Host Settings]. Enable the property if you want to run the Create Datastore Plug-in after the Replication Volumes Plug-in. In other cases, disable the property.

key Name	display Name	Description
replication.copyPairSetting.numberOfGenerations	Number of Generations	Specify the number of secondary volumes to create for the primary volume. The number of secondary volumes becomes the number of generations. Also, a copy group is created for each generation.
replication.copyPairSetting.initialCopyEnabled	Create Pair and Run Initial Copy	Specify whether or not to create a copy pair and run an initial copy.
replication.copyPairSetting.prefixOfCopyGroupName	Prefix of Copy Group Name	"Specify the prefix of the copy group name to assign when creating the copy group. The copy group name is created by adding the prefix to the serial number of the generation."
provisioning.volumeSetting.volumeSettings.definition	Definition of Volume Settings	The data structure definition of the [Volume Settings] property is described in this property. Do not change the property. If you change this property, the service might fail when run.
provisioning.advancedOption.advancedOptions.definition	Definition of Advanced Options for Volume	The data structure definition of the [Advanced Options] property is described in this property. Do not change the property. If you change this property, the service might fail when run.
provisioning.hostSetting.targetHosts.definition	Definition of Target Hosts	The data structure definition of the [Target Hosts] property is described in this property. Do not change the property. If you change this property, the service might fail when run.

key Name	display Name	Description
provisioning.hostSetting.refVmwareControl	Control of the display items for services with the Create Datastore Plug-in in [Host Settings]	This property displays items for services with the Create Datastore Plug-in in [Host Settings]. Enable the property if you want to run the Create Datastore Plug-in after the Allocate Volumes Plug-in. In other cases, Disable the property.
provisioning.advancedOption.refVmwareControl	Control of the display items for services with the Create Datastore Plug-in in [Advanced Options].	This property displays items for services with the Create Datastore Plug-in [Advanced Options]. Enable the property if you want to run the Create Datastore Plug-in after the Allocate Volumes Plug-in. In other cases, Disable the property.
provisioning.control.vmwareControl	Control of services with the Create Datastore Plug-in.	This property runs the Create Datastore Plug-in after using the Allocate Volumes Plug-in. Enable this property if you want to run the Create Datastore Plug-in after the Allocate Volumes Plug-in. In other cases, Disable the property.
provisioning.control.replicationControl	Control of services with the Create Datastore Plug-in.	This property runs the Replication Plug-in after using the Allocate Volumes Plug-in. Enable this property if you want to run the Replication Plug-in after the Allocate Volumes Plug-in. In other cases, Disable the property.

key Name	display Name	Description
createDatastore.control.allocateLikeControl	Control of the display items for services with the Create Datastore Plug-in in [Datastore Environment Settings].	This property displays items for services with the Create Datastore Plug-in [Datastore Environment Settings]. Enable the property if you want to run the Create Datastore Plug-in after the Allocate Like Volumes Plug-in. In other cases, Disable the property.
createDatastore.DatastoreEnvironmentSettings.DatastorePrefix	Datastore Name Prefix.	Specify the prefix of the datastore name.
createDatastore.DatastoreEnvironmentSettings.VMFSVersion	VMFS Version.	Specify the VMFS version for the datastore to create.
createDatastore.DatastoreEnvironmentSettings.Blocksize	Block Size.	Specify the block size for the datastore to create.
createDatastore.DatastoreEnvironmentSettings.StorageIOControl	Storage I/O Control.	Specify whether to enable storage I/O control for the datastore to create.
createDatastore.DatastoreEnvironmentSettings.LatencyThreshold	Latency Threshold.	If you enable storage I/O control, specify the latency threshold.
createDatastore.source.datastore	Referenced Datastore.	Specify the referenced datastore for the datastore that to create. Set this property only if you want to connect with the Allocate Like Volumes Plug-in.
allocatelikevolumes.volumeSource.datastore.value	Referenced VMware Datastore Information.	Specify the information to identify the referenced VMware datastore. Set it only if you want to run the Create Datastore Plug-in after the Allocate Volumes Plug-in.

key Name	display Name	Description
allocatelikevolumes.volumeSource.datastore.definition	Definition of Referenced VMware Datastore.	The data structure definition of the [Referenced VMware Datastore] property is described in this property. Do not change the property. If you change this property, the service might fail when run.
allocatelikevolumes.volumeSource.volumeSource.value	Referenced Volume Information.	Specify the information to identify the referenced volume.
allocatelikevolumes.volumeSource.volumeSource.definition	Definition of Referenced Volume.	The data structure definition of the [Referenced Volume] property is described in this property. Do not change the property. If you change this property, the service might fail when run.
allocatelikevolumes.volumeSetting.volumeSettings.definition	Definition of Volume Settings.	The data structure definition of the [Volume Settings] property is described in this property. Do not change the property. If you change this property, the service might fail when run.
allocatelikevolumes.control.vmwareControl	Control of services with the Create Datastore Plug-in.	This property runs the Create Datastore Plug-in after using the Allocate Like Volumes Plug-in. Enable this property if you want to run the Create Datastore Plug-in after the Allocate Like Volumes Plug-in. In other cases, Disable the property.
allocatelikevolumes.volumeSource.datastore.value	Referenced VMware Datastore Information.	Specify values for the referenced VMware datastore.

key Name	display Name	Description
allocatelikevolumes.volumeSource.datastore.definition	Definition of Referenced VMware Datastore.	The data structure definition of the [Referenced VMware Datastore] property is described in this property. Do not change the property. If you change this property, the service might fail when run.
allocatelikevolumes.volumeSource.refVmwareControl	Control of the display items for services with the Create Datastore Plug-in in [Host Settings].	This property displays items for services with the Create Datastore Plug-in [Volume Source]. Enable the property if you want to run the Create Datastore Plug-in after the Allocate Like Volumes Plug-in. In other cases, Disable the property.
allocatelikevolumes.volumeSetting.volumeSettings.internal.capacity	Allocate Volume Capacity.	A value is specified for this property automatically. You are not required to specify a value. If you specify a value for the property, this service might fail to run.
allocatelikevolumes.volumeSource.volumeSource.internal.capacity	Referenced Volume Capacity.	A value is specified for this property automatically. You are not required to specify a value. If you specify a value for the property, this service might fail to run.
allocatelikevolumes.volumeSource.volumeSource.value	Referenced Volume Information.	Specify values for the referenced volume.
allocatelikevolumes.volumeSource.volumeSource.definition	Definition of Referenced Volume.	The data structure definition of the [Referenced Volume] property is described in this property. Do not change the property. If you change this property, the service might fail when run.

key Name	display Name	Description
allocatelikevolumes.volumeSetting.volumeSettings.definition	Definition of Volume Settings.	The data structure definition of the [Volume Settings] property is described in this property. Do not change the property .If you change this property, the service might fail when run.
allocatelikevolumes.control.vmwareControl	Control of services with the Create Datastore Plug-in.	This property runs the Create Datastore Plug-in after using the Allocate Like Volumes Plug-in. Enable this property if you want to run the Create Datastore Plug-in after the Allocate Like Volumes Plug-in. In other cases, Disable the property.
createDatastore.DatastoreEnvironmentSettings.allocatelizeControl	Control of the display items for services with the Create Datastore Plug-in in [Datastore Environment Settings].	This property displays items for services with the Create Datastore Plug-in [Datastore Environment Settings]. Enable the property if you want to run the Create Datastore Plug-in after the Allocate Like Volumes Plug-in. In other cases, Disable the property.
createDatastore.control.allocateLikeControl	Control of the display items for services with the Create Datastore Plug-in in [Datastore Environment Settings].	This property displays items for services with the Create Datastore Plug-in [Datastore Environment Settings]. Enable the property if you want to run the Create Datastore Plug-in after the Allocate Like Volumes Plug-in. In other cases, Disable the property.
createDatastore.DatastoreEnvironmentSettings.DatastorePrefix	Datastore Name Prefix.	Specify the prefix of the datastore name.
createDatastore.DatastoreEnvironmentSettings.VMFSVersion	VMFS Version.	Specify the VMFS version for the datastore to create.



key Name	display Name	Description
createDatastore.DatastoreEnvironmentSettings.Blocksize	Block Size.	Specify the VMFS version for the datastore to create.
createDatastore.DatastoreEnvironmentSettings.StorageIOControl	Storage I/O Control.	Specify whether to enable storage I/O control for the datastore to create.
createDatastore.DatastoreEnvironmentSettings.LatencyThreshold	Latency Threshold.	If you enable storage I/O control, specify the latency threshold.
createDatastore.source.datastore	Referenced Datastore.	Specify the referenced datastore for the datastore to create. Set this property only if you want to connect with the Allocate Like Volumes Plug-in.
createDatastore.taskResult.RawData.Datastores	Results of the datastore creation.	Information about the created datastore is stored.
service.errorMessage	Summary message of the task run results.	A summary message of the task run results is stored.

## Allocate Volumes service properties

Use the following properties to modify or create values for the Allocate Volumes service.



**Note:** The term "VSP Gx00 models" refers to the Virtual Storage Platform G200, G400, G600, G800 product models. The term "VSP Fx00 models" refers to the Virtual Storage Platform F400, F600, F800 product models.

### Allocate volumes (edit)

key Name	Explanation	Input/Output	Type	Range	Default value
provisioning.advancedOption.advancedOptions.value	Information of Advanced Option.	Input	File	See the "File type property list" section following this table.	

key Name	Explanation	Input/Output	Type	Range	Default value
provisioning.volumeSetting.volumeSettings.value	Information of Volume Setting in Edit service.	Input	File	See the "File type property list" section following this table.	
provisioning.volumeSetting.volumeSettings.restriction	Information of Volume Setting in Edit service.	Input	File	See the "File type property list" section following this table.	
provisioning.resourceCriteria.resourceSelectionCriteria.volumeUsageSpecific.restriction	Information of Criteria in Edit service.	Input	File	See the "File type property list" section following this table.	
provisioning.resourceCriteria.resourceSelectionCriteria.volumeUsageSpecific.value	Information of Criteria in Edit service.	Input	File	See the "File type property list" section following this table.	

### Properties list required to specify in Edit service

- `provisioning.advancedOption.advancedOptions.value`
- `provisioning.volumeSetting.volumeSettings.value`

### File type property list

\*1 : Repeatable items must be repeated and include all lower layer tags.

\*2 : *Hitachi Command Suite CLI Reference Guide*

**Table 38 provisioning.volumeSetting.volumeSettings.value**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		Volume Setting information in edit service	-	-	yes
	usage	Characters of Volume Usage	A maximum of 64 characters can be entered.	-	
	numberOfVolumes	Number of volumes	1 - 500	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	capacity	Volume capacity	<p>Specify the capacity of volumes to allocate.</p> <p>The following storage parameters will be used when the specified capacity is in the range.</p> <p>Refer to the "capacity" raw in the "AddVirtualVolume command parameters" table in the <i>Hitachi Command Suite CLI Reference Guide</i>.</p> <p>Allocate Volume: VSP G1000, VSP G1000, VSP F1500 (microcode 80-03-0X-XX/XX or later) : 48000 ~ 274877906944 KB(=256TB) VSP G1000, VSP G1000, VSP F1500 (microcode earlier than 80-03-0X-XX/XX) : 48000~</p>	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
			64424505600 KB(≒60TB)  VSP Gx00 models(microcode 83-02-0X-XX/XX or later) : 48000 ~ 274877906944 KB(=256TB)  VSP Gx00 models (microcode earlier than 83-02-0X-XX/XX): 48000~ 64424505600 KB (≒60TB)  VSP Fx00 models : 48000~ 274877906944 KB(=256TB)  VSP : 48000~ 64424505600 KB USP V (microcode earlier than 06-03) : 48000~ 3221159680 KB USP V (microcode 06-03 or later) : 48000 ~4294967296 KB HUS VM : 48000 ~ 64424505600 KB HUS : 32768 ~ 137438953472 KB(=128TB) AMS : 32768		

Data nesting information		Explanation	Range	Remarks	Repeatable *1
			~ 6442450944 KB Clone (ShadowImage ) or Snapshot (Thin Image): VSP G1000, VSP G1000, VSP F1500 (microcode 80-03-0X- XX/XX or later) : 48000 ~ 274877906944 KB(=256TB) Virtual Storage Platform G1000, Virtual Storage Platform G1500, Virtual Storage Platform F1500 (microcode 80-02-2X-XX or later) : 48000 ~ 64424505600 KB(=60TB) Virtual Storage Platform G1000, Virtual Storage Platform G1500, Virtual Storage Platform F1500 (microcode earlier than 80-02-2X- XX) : 48000~ 4294967296 KB(=4TB)		

Data nesting information		Explanation	Range	Remarks	Repeatable *1
			VSP Gx00 models (microcode 83-02-0X-XX/XX or later) : 48000 ~ 274877906944 KB(=256TB)  VSP Gx00 models (microcode 83-01-2X-XX/XX or later and earlier than 83-02-0X-XX/XX) : 48000 ~ 64424505600 KB VSP Gx00 models (microcode earlier than 83-01-2X-XX/XX) : 48000~ 4294967296 KB VSP Fx00 models: 48000 ~ 274877906944 KB(=256TB)  VSP: 48000~ 4294967296 KB USP V(microcode earlier than 06-03) : 48000~ 2147483648 KB(=2TB) USP V (microcode 06-03 or later) : 48000 ~4294967296 KB HUS VM :		

Data nesting information		Explanation	Range	Remarks	Repeatable *1
			48000 ~ 64424505600 KB HUS : 32768 ~ 137438953472 KB(=128TB) AMS : 32768 ~ 6442450944 KB  Other combinations : Smaller capacity between above and combined service ex. With Oracle 11g: ~2TB With VMware VMFS-5: ~ 62TB (when VSP G1000, VSP G1000, VSP F1500)		
	storageProfile	Storage Profile name	Storage Profile name that is already defined.	-	
	ldevLabel	Ldev label	A maximum of 64 characters can be entered.	-	
	ldevSetting	ldevSetting	-	-	



Data nesting information		Explanation	Range	Remarks	Repeatable *1
	fullAllocation	Full Allocation	Specify "Enable" to guarantee writing to the full range of the allocated volumes.  Only storage that supports this feature can be allocated.  If "Disable" is specified, writing to the volumes can cause an error, when there is no free space in the pool.	-	
	ldevIdStartsFrom	Starting number of LDEVID	AMS, HUS 100: 0 - 4095  USP V, VSP, VSP G1000, VSP G1000, VSP F1500, HUS VM, VSP Fx00 models, VSP Fx00 models: 00:00:00 - 00:FE:FF	-	
	lunSetting	LUN setting	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	lunStartsFrom	Starting number of LUN	0 - 07FF *Refer to "Remarks".	Specified in hexadecimal ex. 07FF The maximum value of LUNs that is specific in Storage that contains pools which are filled with Storage Profile condition.	

Table 39 provisioning.advancedOption.advancedOptions.value

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		Advanced Option information	-	-	
	numberOfPaths	Number of paths	1 - 65536 *Refer to "Remarks".	If you specify a number more than the number of host ports, a warning message will be shown when the task is run.	
	hostModeSettings	Host mode setting	-	-	yes

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	arrayType	Display array family (Not required to specify. Reference only)	VSP USP V HUS VM VSP G1000 VSP G1500 VSP F1500 HUS AMS VSP Fx00 models VSP Gx00 models	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	hostMode	Host mode	Characters of Host mode name. *2 Refer to "Table 4-5 Values that can be specified in the hostmode parameter" in the <i>Hitachi Command Suite CLI Reference Guide</i> .	If you specified "Auto", the default value will be set. The default value is defined from OS of host and target Storage you specified by Device Manager. If you specified a Host mode that does not exist, the behavior is same as the behavior you specified "Auto".	
	storageProfile	Storage Profile name	Storage Profile name that is already defined.	-	
	ldevLabel	LDEV label	A maximum of 64 characters can be entered.		

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	hostModeOptions	Host mode option setting	Characters or numbers that correspond to Host mode options. *2 Refer to following part of Hitachi Command Suite CLI Reference Guide VSP G1000, VSP G1500, VSP F1500, VSP, VSP G200, G400, G600, G800 and USP V: "Table 4-7 Values that can be specified in the hostmodeoption parameter" HUS and AMS : "Table 4-6 Values that can be specified in the hostmode2 parameter" * In Hitachi Command Suite CLI Reference Guide, hostmode2 is expressed in "List of host connection	-	

Data nesting information			Explanation	Range	Remarks	Repeatable *1
				mode 2", this means hostmode option of HUS and AMS.		

**Table 40 provisioning.volumeSetting.volumeSettings.restriction**

Data nesting information			Explanation	Range	Remarks	Repeatable *1
type			Volume Setting restriction values information of user	-	-	-
visibility			-	-	-	-
readOnly			-	-	-	-
itemInstances			-	-	-	yes
	type		-	-	-	
	properties		-	-	-	
		usage	Volume Usage information (Do not edit.)	-	-	
		type	-	-	-	
		visibility	-	-	-	
		readOnly	-	-	-	
		defaultValue	-	-	-	
		numberOfVolumes	Threshold information of number of volumes	-	-	
		type	-	-	-	

Data nesting information				Explanation	Range	Remarks	Repeatable *1
			visibility	-	-	-	
			optionValues	-	-	-	
			method	Value type of threshold of number of volumes	specific/range	-	
			values	Threshold of number of volumes	If the type is "specific", specify the value list that can be specified. If the type is "range", specify the minimum value and maximum value in order.	-	
			defaultValue	Default values of number of volume	If the type is "specific", specify one of the values. If the type is "range", specify a value in the value range.	-	

Data nesting information				Explanation	Range	Remarks	Repeatable *1
		capacity		Threshold information of volume capacity	-	-	
			type	-	-	-	
			visibility	-	-	-	
			optionValues	-	-	-	
			method	Value type of threshold value of volume capacity	specific/range	-	
			values	Threshold value of volume capacity	If the type is "specific", specify the value list that can be specified. . If the type is "range", specify the minimum value and maximum value in order. "	-	



Data nesting information				Explanation	Range	Remarks	Repeatable *1
			defaultValue	Default values of number of volume capacity	If the type is "specific", specify one of the values.  If the type is "range", specify a value in the value range.	-	
			storageProfile	Storage Profile information (Do not edit.)	-	-	
			type	-	-	-	
			visibility	-	-	-	
			readOnly	-	-	-	
			defaultValue	Default values of Storage Profile	-	-	
			ldevLabel	LDEV label information (Do not edit.)	-	-	
			type	-	-	-	
			visibility	-	-	-	

Data nesting information				Explanation	Range	Remarks	Repeatable *1
			defaultValue	Default values of LDEV label	The character which can be used: A-Za-z0-9~!@#\$%^&*()_+ -= {} []   : ; ' < > . ? / ` length must be less than 64	-	
		ldevSetting					
			type				-
			hidden				-
			properties				-
			fullAllocation		Full Allocation (Do not edit.)		
			type				-
			visibility				-
			defaultValue			Disable	-
			ldevIdStartsFrom		Starting number of LDEVID		
			type				-
			visibility				-
			defaultValue			0	
		lunSetting		LUN information (Do not edit.)	-	-	

Data nesting information				Explanation	Range	Remarks	Repeatable *1
			type	-	-	-	
			hidden	-	-	-	
			properties	-	-	-	
			lunStartsFrom	-	-	-	
			type	-	-	-	
			visibility	-	-	-	
			readOnly	-	-	-	
			defaultValue	Start number of LUN	-	-	

**Table 41**  
**provisioning.resourceCriteria.resourceSelectionCriteria.volumeUsageSpecific.restriction**

Data nesting information		Exp	Range	Rem	Rep *1
type				Resource Criteria user restriction values information	
visibility			-	-	
readOnly			-	-	
itemInstances			-	-	yes
type			-	-	
properties			-	-	

Data nesting information				E x p	R n g e	Re m	Rep *1
		usage				VolumeU sage informati on -	
		type			-		
		visibil ity			-		
		defaultValue			-		
		crit eria				Filte ring crit eria infor mati on	
		type			-		
		properties			-		
		groupCrite ria				Filte ring crit eria of grou p defi nitio n	
		type			-		
		properties			-		

Data nesting information											Exp	Range	Rem	Rep *1
								infrastructureGroupCriteria			F	-		
								type			-			
								properties			-			
								condition			-			
								type			-			
								properties			-			
								join			-			
								type			-			
								visibility			-			
								defaultValue			-			
								expressions			-			
								type			-			
								itemInstances			-		yes	
								type			-			

Data nesting information											Exp	Range	Rem	Rep *1
									pr op ert ies			-		
									op			-		
									type			-		
									visibili ty			-		
									default tValue			Value define d at Value List Com mon for all the resou rces: eq, ne, starts, ends		
									name			-		
									type			-		
									visibili ty			-		

Data nesting information											Exp	Eng	Rem	Rep *1
											defaultValue	Value defined at Value List IG: name RG: name Pool: poolId, name Port: name		
											value	-		
											type	-		
											visibility	-		
											defaultValue -	-		
											resourceGroupCriteria	Filtering criteria of RG	-	

Data nesting information						Exp	Range	Rem	Rep *1
				*Same as infrastructureGroupCriteria			-		
			resourceGroupCriteria				-		
			type				-		
			properties				-		
			storagePortCriteria			Filtering criteria of storage port	-		
			condition				-		
				*Same as infrastructureGroupCriteria					



Data nesting information						E x p	R n g e	Re m	Rep *1
					performanceCondition				
					*Same as infrastructureGroupCriteria				
					dynamicProvisioningPoolCriteria	F i l t e r i n g c r i t e r i a o f H D P / H D T P o o l	-		
					*Same as infrastructureGroupCriteria		-		

**Table 42**  
**provisioning.resourceCriteria.resourceSelectionCriteria.volumeUsageSpecific.value**

Data nesting information					Explanation	Range	Remarks	Repeatable *1
values					ResourceCriteria information in edit service	-	-	yes
	usage				Characters of Volume Usage	Same as volume Setting	-	
	criteria				Filtering criteria	-	-	
		groupCriteria			Filtering criteria of group definition	-	-	
			infrastructureGroupCriteria		Filtering criteria of IG definition	-	-	
				condition	Conditional statement	-	-	
				join	Join	"and" or "or"	-	
				expressions	Identifier	-	-	

Data nesting information						Explan	Range	Remarks	Repeatable *1	
					op	Operator	Value defined at ValueList Common for all the resources: eq, ne, starts, ends	-		
					name	Name	Value defined at ValueList IG: name RG: name Pool: poolId, name Port: name	-		
					value	Value	-	-		
			resourceCriteria				Filtering criteria of RG definition	-	-	
			*Same as infrastructureGroupCriteria				-	-	-	

Data nesting information				Explanation	Range	Remarks	Repeatable *1
		resourceCriteria		Filtering criteria of storage resources	-	-	
		storagePortCriteria		Filtering criteria of storage port	-	-	
			condition	Filtering criteria of port configuration	-	-	
			join	Join	"and" or "or"		
			expressions	Identifier	-		
			op	Operator	"eq", "ne", "starts", or "ends"		
			name	Name	name"		
			value	Value	-		
			performanceCondition	Filtering criteria of port performance	-		

Data nesting information					Explanation	Range	Remarks	Repeatable *1
			join		Join	"and" or "or"		
			expressions		Identifier	-		
				op	Operator	"lt" or "gt"		
				name	Name	"avgXferPerSec" or "avgIoPerSec"		
				value	Value	-		
			dynamicProvisioningPoolCriteria		HDP/HDT Pool criteria	-	-	
			*Same as infrastructureGroupCriteria		-	-	-	

## Allocate volumes (submit)

Use the following property list values when submitting modified allocated volumes.

keyName	Explanation	Input/Output	Type	Range	Default value
provisioning.hostSetting.targetHosts.value	The target host name to allocate volume.	Input	File	See the "File property list" section following this table.	
provisioning.volumeSetting.volumeSettings.value	Information of volumesetting.	Input	File	See <a href="#">Allocating volumes (edit) (on page 417)</a> .	The value specify in Edit window.

## File type property list

Table 43 provisioning.runtime.parameters.hosts

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		Array of host name	-	-	-
	infrastructureGroupName	infrastructureGroupN	-		
	deviceManagerName	Device Manager names that host is registered	The name specified in Device Manager connections		
	hosts	Array of host name	-	-	yes
	newHosts	New host addition flag	"true" or "false". If you specify "true", adds new host.		
	hosts	Array of host information	-		
		name	Host name	-	
		osType	OS type	-	
		hostPorts	Array of host port	-	

\*1 : Repeatable items must be repeated and must include all lower layer tags.

## Allocate volumes (task details)

Use the following information to show the task details of allocated volumes.

There are two Automation Director-specific properties in task detail.

- Input value of a submitted task.
- Run result details of a task.



**Note:** 'Input value in submit task' is same as the properties of submit properties.

keyName	Explanation	Input/Output	Type	Range	Default value
provisioning.taskResult.lunPathConfigurationInformation	The run result information of task.	Output	File	See the "File type property list" section following this table.	
provisioning.taskResult.NumberOfLunPath	The run result information of task.	Output	String	Number of paths that are allocated.	
service.errorMessage	The run result information of task.	Output	String	Summary of error message.	
provisioning.taskResultRawData.ldevs	The run result information of task.	Output	File	See the "File type property list" section following this table.	
provisioning.taskResultRawData.lunPaths	The run result information of task.	Output	File	See the "File type property list" section following this table.	

### File type property list



**Note:** \*1 : Repeatable items must be repeated and must include all lower layer tags.

**Table 44 provisioning.taskResult.lunPathConfigurationInformation**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		Run result.	-	-	Yes.
	usage	Volume Usage name.	-	-	
	host	Host name.	-	-	
	hostPort	Host port name.	-	-	
	lun	LUN.	-	-	
	storagePort	Port ID.	-	-	
	portName	Storage port name.	-	-	
	portType	Port type (FC or iSCSI).	-	-	
	volume	LDEV ID.	-	-	
	dpPool	Pool ID.	-	-	
	dpPoolName	Pool Name.	-	-	
	storageSystem	Storage Array name.	-	-	
	provisionedCapacity	Create volume capacity.	-	-	
	capacity	Volume capacity when you submit.	-	-	
	hostGroup	Host Group name.	-	-	
	deviceManagerTaskName	Task Name of Device Manager.	-	-	
	deviceManagerName	Device Manager that ran the task.	-	-	



Data nesting information		Explanation	Range	Remarks	Repeatable *1
	virtualStorageSystemName	Virtual storage system name.	-	-	
	virtualStorageSystemType	Type of virtual storage system.	-	-	
	virtualSerialNumber	Serial number of virtual storage system.	-	-	
	virtualLdevId	Virtual LDEV ID.	-	-	
	resourceGroupName	Resource Group name.	-	-	
	infrastructureGroupName	Infrastructure Group name.	-	-	

Table 45 provisioning.taskResultRawData.ldevs

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		Result of allocated volume	-	-	yes
	usage	Created DP/DT volume's LDEV ID	-	-	
	deviceId	Created DP/DT volume's LDEV ID	-	-	
	storageSystemType	Display Array Type of the target storage which volume has been allocated.	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	storageSystemSerialNumber	Serial Number of the target storage which volume has been allocated.	-	-	
	deviceManagerName	Device Manager name which manages the storage system that has the created volume.	-	-	
	displayUnit	Unit name string for displaying volume capacity size.	block/KB/MB/GB/TB	-	
	virtualSerialNumber	Virtual serial Number of the selected virtual storage system.	-	-	
	virtualLdevId	Created virtual DP/DT volume's LDEV ID	-	-	

Table 46 provisioning.taskResultRawData.lunPaths

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values			-	-	Yes
	usage	Volume usage	-	-	
	hostName	Host Name	-	-	
	hostPortName	Host port name	-	-	
	hostStorageDomainName	Host Storage Domain name	-	-	
	hostStorageDomainId	Host Storage Domain ID	-	-	
	lun	LUN Number	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	portWorldWideName	Storage Port WWN	-	-	
	targetIscsiName	iSCSI name	-	-	
	portName	Storage system's port name	-	-	
	portType	Port Type of storage system (FC or iSCSI)	-	-	
	portObjectId	Port Object ID of Storage system	-	-	
	portId	Port ID of storage system	-	-	
	ldevNumber	LDEV number	-	-	
	ldevLabel	LDEV Label	-	-	
	dpPoolId	Pool ID	-	-	
	storageSystemName	Storage System name	-	-	
	storageSystemModel	Model name of Storage system	-	-	
	family	Array Family of Storage system	-	-	
	storageSystemSerialNumber	Serial Number of storage system	-	-	
	capacity	Volume Capacity	-	-	
	unit	Unit of volume capacity for display	-	-	
	provisionedCapacityInBlock	Created volume capacity(in number of Block)	-	-	
	pairVolumeType	Volume's pair type (P or S)	-	-	
	volLdevId	LDEV ID	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	volLuNumber	LU number	-	-	
	deviceManagerTaskName	Device Manager task name	-	-	
	deviceManagerName	Device Manager name	-	-	
	virtualStorageSystemName	Virtual storage array name	-	-	
	virtualStorageSystemType	Display name of virtual storage array's virtual model (Array Type)	-	-	
	virtualSerialNumber	Serial Number of virtual storage array	-	-	
	virtualLdevId	Virtual LDEV ID	-	-	

## Allocate volumes with Configuration Manager service properties

Use the following properties to modify or create values for the Allocate volumes with Configuration Manager service.

### Allocate volumes with configuration manager service (edit)

keyName	Type	Description	Range	Remark	Default value
ConfigurationManagerConnection	File	Specify the Configuration Manager Connection.	See the "File type property list" section following this table.	-	-

keyName	Type	Description	Range	Remark	Default value
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.	-	-
NumberOfVolumes	Integer	Specify the number of volumes.	1-500	-	1
LDEVIDStartsFrom	Integer	Specify the startup LDEV ID for the volume to allocated.	0-FEFF	-	0
VolumeCapacity	Integer	Specify the volume capacity.	Refer to the <i>capacity</i> row in the <i>AddVirtualVolume command parameters</i> table in Hitachi Automation Director CLI Reference Guide.	-	-
Pool	File	Specify the pool.	See the "File type property list" section following this table.	-	-
VolumeLabel	String	Specify the volume label.	A maximum of 64 characters can be entered.	-	-

keyName	Type	Description	Range	Remark	Default value
LUN Starts from	Integer	Specify the starting logical unit number assigned to the volume for a host.	0-07FF	-	0
VirtualLDEVIDStartsFrom	Integer	Specify the startup Virtual LDEV ID for the volume to allocated.	0-FEFF	-	-
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 in order to create a new Host Group/iSCIS Target.	See the "File type property list" section following this table.	-	-

### File type property list

**Table 47 ConfigurationManagerConnection**

Data nesting information	Description	Range	Remarks	Repeatable
values				
productName	Product name of registering to Web Service Connection.	"ConfigurationManager"	-	-
name	Name.	-	-	-

Data nesting information		Description	Range	Remarks	Repeatable
	ipAddress	IP address.	-	-	-
	port	Port.	-	-	-
	protocol	Protocol.	-	-	-
	userID	User ID.	-	-	-
	status	Status of connection.	-	-	-
	connected Time	Connected time.	-	-	-

**Table 48 StorageSystem**

Data nesting information		Description	Range	Remarks	Repeatable
values					
	storageDeviceId	Storage Device ID.	-	-	-
	model	Model.	-	-	-
	serialNumber	Serial Number.	-	-	-
	svplp	SVP IP Address.	-	-	-

**Table 49 ResourceGroup**

Data nesting information		Description	Range	Remarks	Repeatable
values					
	resourceGroupId	Resource Group ID.	-	-	-
	resourceGroupName	Resource Group Name.	-	-	-
	virtualStorageId	Virtual Storage System ID.	-	-	-

**Table 50 Pool**

<b>Data nesting information</b>	<b>Description</b>	<b>Range</b>	<b>Remarks</b>	<b>Repeatable</b>
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 51 ResourceCriteria**

<b>Data nesting information</b>	<b>Description</b>	<b>Range</b>	<b>Remarks</b>	<b>Repeatable</b>
values				
storagePortCriteria	Storage Port Criteria.	-	-	-
condition	Condition.	-	-	-
expressions	Expression.	-	-	Yes.
name	Name.	"Name".	-	-
op	Operation.	"Equals", "Not Equals", "Starts With", "Ends With".	-	-
value	Value.	-	-	-
join	Join condition of the Expressions.	"All", "Any".	-	-



**Table 52 HostGroupSettings**

<b>Data nesting information</b>	<b>Description</b>	<b>Range</b>	<b>Remarks</b>	<b>Repeatable</b>
values				Yes.
hostGroup pName	Host Group name.	A maximum of 64 characters can be entered.	When "PortType" is "Fibre", hostGroup Name can be specified.	-
iScsiTarget Name	iSCSI target name.	A maximum of 32 characters can be entered.	When "PortType" is "iSCSI", iScsiTarget Name can be specified.	-
wwnSettings	WWN settings.		When "PortType" is "Fibre", wwnSettings can be specified.	Yes.
wwn	WWN.	A maximum of 16 characters is allowed in hexadecimal.	-	-
wwnNick name	WWN nickname.	A maximum of 64 characters can be entered.	-	-

Data nesting information	Description	Range	Remarks	Repeatable
iScsiSettings	iSCSI settings.		When "PortType" is "iSCSI", iScsiSettings can be specified.	Yes.
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.	-	-

<b>Data nesting information</b>	<b>Description</b>	<b>Range</b>	<b>Remarks</b>	<b>Repeatable</b>
hostMode	Host Mode.	"HP-UX", "SOLARIS", "AIX", "WIN", "LINUX/ IRIX", "TRU64", "OVMS", "NETWARE", , "VMWARE", "VMWARE_ EX", "WIN_EX"	Refer to <i>Values that can be specified in the hostmode parameter</i> in the Hitachi Command Suite CLI Reference Guide.	-
hostMode Options	Host Mode options.	Refer to "Values that can be specified in the hostmodeoptions parameter" in the Hitachi Command Suite CLI Reference Guide.	-	-

**Allocate volumes with configuration manager service (submit)**

<b>keyName</b>	<b>Type</b>	<b>Description</b>	<b>Range</b>	<b>Remark</b>	<b>Default value</b>
ConfigurationManager Connection	File	Specify the Configuration Manager Connection.	See the "File type property list" section following this table.	-	-

keyName	Type	Description	Range	Remark	Default value
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.	-	-
NumberOfVolumes	Integer	Specify the number of volumes.	1-500	-	1
LDEVIDStartsFrom	Integer	Specify the startup LDEV ID for the volume to allocated.	0-FEFF	-	0
VolumeCapacity	Integer	Specify the volume capacity.	Refer to the <i>capacity</i> row in the <i>AddVirtualVolume command parameters</i> table in Hitachi Automation Director CLI Reference Guide.	-	-
Pool	File	Specify the pool.	See the "File type property list" section following this table.	-	-
VolumeLabel	String	Specify the volume label.	A maximum of 64 characters can be entered.	-	-

keyName	Type	Description	Range	Remark	Default value
LUN Starts from	Integer	Specify the starting logical unit number assigned to the volume for a host.	0-07FF	-	0
VirtualLDEVIDStartsFrom	Integer	Specify the startup Virtual LDEV ID for the volume to allocated.	0-FEFF	-	0
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 in order to create a new Host Group/iSCIS Target.	See the "File type property list" section following this table.	-	-

**File type property list**

**Table 53 ConfigurationManagerConnection**

Data nesting information	Description	Range	Remarks	Repeatable
values				
productName	Product name of registering to Web Service Connection.	"ConfigurationManager"	-	-
name	Name.	-	-	-

Data nesting information		Description	Range	Remarks	Repeatable
	ipAddress	IP address.	-	-	-
	port	Port.	-	-	-
	protocol	Protocol.	-	-	-
	userID	User ID.	-	-	-
	status	Status of connection.	-	-	-
	connected Time	Connected time.	-	-	-

**Table 54 StorageSystem**

Data nesting information		Description	Range	Remarks	Repeatable
values					
	storageDeviceId	Storage Device ID.	-	-	-
	model	Model.	-	-	-
	serialNumber	Serial Number.	-	-	-
	svplp	SVP IP Address.	-	-	-

**Table 55 ResourceGroup**

Data nesting information		Description	Range	Remarks	Repeatable
values					
	resourceGroupId	Resource Group ID.	-	-	-
	resourceGroupName	Resource Group Name.	-	-	-
	virtualStorageId	Virtual Storage System ID.	-	-	-

**Table 56 Pool**

Data nesting information		Description	Range	Remarks	Repeatable
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 57 ResourceCriteria**

Data nesting information		Description	Range	Remarks	Repeatable
values					
	storagePortCriteria	Storage Port Criteria.	-	-	-
	condition	Condition.	-	-	-
	expressions	Expression.	-	-	Yes.
	name	Name.	"Name".	-	-
	op	Operation.	"Equals", "Not Equals", "Starts With", "Ends With".	-	-
	value	Value.	-	-	-
	join	Join condition of the Expressions.	"All", "Any".	-	-

**Table 58 HostGroupSettings**

Data nesting information	Description	Range	Remarks	Repeatable
values				Yes.
hostGroup pName	Host Group name.	A maximum of 64 characters can be entered.	When "PortType" is "Fibre", hostGroup Name can be specified.	-
iScsiTarget Name	iSCSI target name.	A maximum of 32 characters can be entered.	When "PortType" is "iSCSI", iScsiTarget Name can be specified.	-
wwnSettings	WWN settings.		When "PortType" is "Fibre", wwnSettings can be specified.	Yes.
wwn	WWN.	A maximum of 16 characters is allowed in hexadecimal.	-	-
wwnNick name	WWN nickname.	A maximum of 64 characters can be entered.	-	-



Data nesting information	Description	Range	Remarks	Repeatable
iScsiSettings	iSCSI settings.		When "PortType" is "iSCSI", iScsiSettings can be specified.	Yes.
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.	-	-

Data nesting information	Description	Range	Remarks	Repeatable
hostMode	Host Mode.	"HP-UX", "SOLARIS", "AIX", "WIN", "LINUX/ IRIX", "TRU64", "OVMS", "NETWARE" , "VMWARE", "VMWARE_ EX", "WIN_EX"	Refer to <i>Values that can be specified in the hostmode parameter</i> in the Hitachi Command Suite CLI Reference Guide.	-
hostMode Options	Host Mode options.	Refer to "Values that can be specified in the hostmodeoptions parameter" in the Hitachi Command Suite CLI Reference Guide.	-	-

**Allocate volumes with configuration manager service (task details)**

keyName	Type	Description	Range	Remark	Default value
LUNPathConfigurationInformation	File	Stores the allocated LUN path information from the volume allocation results.	See the "File type property list" section following this table.	-	-

**File type property list****Table 59 LUNPathConfigurationInformation**

Data nesting information	Description	Range	Remarks	Repeatable
value				Yes.
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.	-	-	-

Data nesting information	Description	Range	Remarks	Repeatable
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.	-	-	-

## Clone (Shadow Image) service properties

Use the following properties to modify or create values for the Clone (Shadow Image) service.



**Note:** The term "VSP Gx00 models" refers to the Virtual Storage Platform G200, G400, G600, G800 product models. The term "VSP Fx00 models" refers to the Virtual Storage Platform F400, F600, F800 product models.

## Clone (ShadowImage) edit

key Name	Explanation	Input/Output	Type	Range	Default value
replication.advancedOption.advancedOptions.value	Value of Advanced Option property group	Input	File	See the "File type property list" section following this table.	
replication.volumeSetting.primaryVolumeSettings.value	Value of P-Vol's Volume Setting for Edit timing	Input	File	Same as provisioning.volumeSetting.volumeSettings.value. Please refer to it.	
replication.volumeSetting.primaryVolumeSettings.restriction	Restriction condition for a value of P-Vol's Volume Setting for Edit timing	Input	File	Same as provisioning.volumeSetting.volumeSettings.restriction. Please refer to it.	
replication.volumeSetting.secondaryVolumeSettings.value	Value of S-Vol's Volume Setting for Edit timing	Input	File	See the "File type property list" section following this table.	
replication.volumeSetting.secondaryVolumeSettings.restriction	Restriction condition for a value of S-Vol's Volume Setting for Edit timing	Input	File	See the "File type property list" section following this table.	
replication.copyPairSetting.numberOfGenerations	Number of Copy Group generation.	Input	integer	1 - 3	

key Name	Explanation	Input/Output	Type	Range	Default value
replication.copyPairSetting.prefixOfCopyGroupName	Copy Group Prefix	Input	string	The length must be less than 16 and the string consist of the following character set. A string starts from '-' is not allowed. A-Z,a-z,0-9,'-','_','!','@'	
replication.copyPairSetting.initialCopyEnabled	Flag(Switch) of enabling initial copy	Input	boolean	true = do pair definition & initial copy false = do pair definition	
replication.copyPairSetting.ctgOption	CTG option	Input	boolean	true = copy pair is created by using CTG option false = copy pair is created by not using CTG option	
replication.copyPairSetting.virtualLdevEnabled	Use VLDEV for VSM Volumes	Input	boolean	true = copy pair is created by using VLDEV ID false = copy pair is created by using LDEV ID	
replication.copyPairSetting.ctgOption	CTG option	Input	boolean	true = copy pair is created by using CTG option false = copy pair is created by not using CTG option	

key Name	Explanation	Input/Output	Type	Range	Default value
replication.copyPairSetting.virtualLdevEnabled	Use VLDEV for VSM Volumes	Input	boolean	true = copy pair is created by using VLDEV ID  false = copy pair is created by using LDEV ID	

#### Required property list in Edit Service

- replication.advancedOption.advancedOptions.value
- replication.volumeSetting.secondaryVolumeSettings.value
- replication.copyPairSetting.numberOfGenerations
- replication.copyPairSetting.prefixOfCopyGroupName
- replication.copyPairSetting.initialCopyEnabled
- replication.copyPairSetting.virtualLdevEnabled

#### File type property list

\*1: When you repeat a repeatable item, you must include all lower layer tags in each repeated item.

**Table 60 replication.advancedOption.advancedOptions.value**

Data nesting information	Explanation	Range	Remarks	Repeatable *1
values	advanced Option root	-	-	-

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	numberOfPaths	number of paths	1-65536	If an invalid number was specified which is larger than the maximum number of ports in a target host, task will be failed with warning message.	
	hostModeSettings	Host Mode	-	-	yes
	arrayType	Array of display array family name	VSP USP V HUS VM VSP G1000 VSP G1500 VSP F1500 HUS AMS VSP Fx00 models VSP Gx00 models	-	



Data nesting information			Explanati on	Range	Remarks	Repeatable *1
		hostMode	Host Mode value	String of Host Mode *2: Also refer to "Table 4-5 Values that can be specified in the hostmode parameter" in the <i>Hitachi Command Suite CLI Reference Guide</i> .	If you specify "Auto", the value will be set by default value. The default value is decided by specified host's OS type and selected target storage. If you specify a non- existing host mode value, Automati on Director treats it as "Auto".	

Data nesting information			Explanation	Range	Remarks	Repeatable *1
		hostMode Options	Host Mode Options value	Host Mode Option's value in integer or string. *2: Also refer to the following items in <i>Hitachi Command Suite CLI Reference Guide</i> .  - For USP V, VSP, VSP G1000, VSP G1000, VSP F1500, HUS VM, VSP Fx00 models, VSP Fx00 models: "Table 4-7 parameters for hostmodeoption"  - For AMS, HUS 100: "Table 4-6 parameters for hostmode2"  <b>Note:</b> hostmode2 means the host mode option for AMS, HUS 100. In the Device Manager GUI, it is displayed as host mode option.	-	

**Table 61 replication.volumeSetting.secondaryVolumeSettings.value**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		Information for Volume Setting in Edit.	-	-	Yes.
	usage	String value for Volume Usage.	Length must be less than 64.	-	
	copyPairCreationEnabled	On/Off for whether Automation Director creates copy pair.	Boolean.	-	
	storageProfile	Storage Profile name.	Storage Profile name which is already defined.	-	
	ldevLabel	LDEV Label.	The character which can be used: A-Za-z0-9 ~!@#\$%^&*()_+={} :;<>./` length must be less than 64.	-	
	lunSetting	LUN settings information.	-	-	
	lunStartsFrom	Start number of LUN.	0 - 07FF * Also see Remarks.	Must be specified in hex. Ex. 01DC.	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	fullAllocation	Full Allocation.	Specify "Enable" to guarantee the writing to the full range of the allocated volumes.  You can only allocate volumes to the storage system that supports this feature.  If "Disable" is specified, writing to the volumes may occur an error when there is no free space in the pool.	Required(V8.1.3 or later).  Not specifiabl e(V8.1.2 or earlier).	

Table 62 replication.volumeSetting.secondaryVolumeSettings.restriction

Data nesting information	Explanation	Range	Remarks	Repeatable *1
type	-	-	-	
visibility	-	-	-	
readOnly	-	-	-	

Data nesting information				Explanation	Range	Remarks	Repeatable *1
itemInstances				-	-	-	Yes.
	type			-	-	-	
	properties			-	-	-	
		usage		Volume Usage (Omitted).	-	-	
			type	-	-	-	
			visibility	-	-	-	
			readOnly	-	-	-	
			defaultValue	* Does not require editing.	- (Length must be less than 64).	-	
		isCreateCopyPair		On/Off switch for whether Automation Director creates copy pair (Omitted).	-	-	
			type	-	-	-	
			visibility	-	-	-	
			readOnly	-	-	-	
			defaultValue	-	-	-	
		storageProfile		Storage Profile (Omitted).	-	-	
			type	-	-	-	
			visibility	-	-	-	
			readOnly	-	-	-	

Data nesting information				Explanation	Range	Remarks	Repeatable *1
			defaultValue	* Does not require editing.	String.	-	
			ldevLabel	LDEV Label.	-	-	
			type	-	-	-	
			visibility	-	-	-	
			defaultValu e	* Does not require editing.	- (Length must be less than 64).		
		lunSetting		LUN information (Omitted).	-	-	
			type	-	-	-	
			hidden	-	-	-	
			properties	-	-	-	
			lunStartsFrom	-	-	-	
			type	-	-	-	
			visibility	-	-	-	
			defaultV alue	Start number of LUN.	0 - 07FF * Also see Remarks.	Must be specified in hex. Ex. 01DC.	
		fullAllocation					
			type				
			visibility				
			defaultValue	Disable.			

## Clone (ShadowImage) submit

key Name	Explanation	Input/Output	Type	Range	Default value
replication.hostSetting.targetHosts.value	Target host name for volume allocation.	input	File	Specified host must be discovered by Device Manager that is registered in Automation Director. See the "File type property list" section following this table.	
replication.copyPairSetting.prefixOfCopyGroupName	Copy Group Prefix name.	input	String	The length must be less than 28 and the string consist os the following character set. A string starts from '-' is not allowed. A-Z,a-z,0-9,'-', '_', ':', '@'.	
provisioning.taskResultRawData.ldevs	Volume information for P-Vol.	input	File	See the "File type property list" section following this table.	

**File type property list**

\*1: When you repeat a repeatable item, you must include all lower layer tags in each repeated item.

**Table 63 replication.hostSetting.targetHosts.value**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
Values		Array of host name strings information.	-	-	-
	deviceManagerName	Name of Device Manager that manages the host.	Device Manager name that is specified in Device Manager connections.	-	-
	hosts	Array of host name string.	-	-	-
		name	Host name string.	-	-

**Table 64 provisioning.taskResultRawData.ldevs**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
Values		Array of host name strings information	-	-	-
	usage	Volume Usage of P-Vol	-	-	yes
	deviceId	LDEV ID of created volume from HDP/HDT	-	-	
	storageSystemType	Display array type of selected storage system which has the created volume.	-	-	
	storageSystemSerialNumber	Serial Number of selected storage system which has the created volume.	-	-	



Data nesting information		Explanation	Range	Remarks	Repeatable *1
	deviceManager Name	Device Manager name which manages the storage system that has the created volume.	-	-	
	displayUnit	Unit name string for displaying volume capacity size.	block/KB/MB/GB/TB	-	
	virtualSerialNumber	Virtual serial Number of the selected virtual storage system.	-	-	
	virtualLdevId	LDEV ID of created virtual volume from HDP/HDT	-	-	

## Clone (ShadowImage) task detail

key Name	Explanation	Input/ Output	Type	Range	Default value
replication.taskResult.lunPathConfigurationInformation	Task run result information.	Output	File	See the "File type property list" section following this table.	
replication.taskResult.NumberOflunPath	Task run result information.	Output	string	Number of allocated LUN paths.	
replication.taskResult.copypairConfigurationInformation	Task run result information.	Output	File	See the "File type property list" section following this table.	

key Name	Explanation	Input/Output	Type	Range	Default value
service.error Message	Task run result information.	Output	string	Summary information of error messages.	
replication.taskResultRawData.ldevs	Task run result information.	Output	File	See the "File type property list" section following this table.	
replication.taskResultRawData.lunPaths	Task run result information.	Output	File	See the "File type property list" section following this table.	
replication.taskResultRawData.copy Pairs	Task run result information.	Output	File	See the "File type property list" section following this table.	

### File type property list

\*1: When you repeat a repeatable item, you must include all lower layer tags in each repeated item.

**Table 65 replication.taskResult.lunPathConfigurationInformation**

Data nesting information	Explanation	Range	Remarks	Repeatable *1
values	LUN Path configuration part of task result	-	-	yes
usage	Volume Usage name	-	-	
host	Host name	-	-	
hostPort	Port name on the host	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	lun	LUN Number	-	-	
	storagePort	Port ID	-	-	
	portType	Port Type(FC or iSCSI)	-	-	
	volume	LDEV ID	-	-	
	ldevLabel	LDEV label	-	-	
	dpPool	Pool ID	-	-	
	storageSystem	Storage Array name	-	-	
	provisionedCapacity	Created volume capacity	-	-	
	capacity	Specified volume capacity in Submit	-	-	
	hostGroup	Host Group name	-	-	
	deviceManagerTaskName	Device Manager task name	-	-	
	deviceManagerName	Device Manager name	-	-	
	virtualStorageSystemName	Virtual storage array name	-	-	
	virtualStorageSystemType	Display name of virtual storage array's virtual model (Array Type)	-	-	
	virtualSerialNumber	Serial Number of virtual storage array	-	-	
	virtualLdevId	LDEV ID in virtual storage array	-	-	

**Table 66 replication.taskResult.copyPairConfigurationInformation**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		Copy Pair Configuration part of task result	-	-	yes
	copyGroupName	Copy Group name	-	-	
	primaryPairManagementServer	Pair management server for P-Vol	-	-	
	primaryInstanceNumber	RAID Manager instance number for P-Vol	-	-	
	secondaryPairManagementServer	Pair management server for S-Vol	-	-	
	secondaryInstanceNumber	RAID Manager instance number for S-Vol	-	-	
	primaryHosts	Target host name which primary volume has allocated to.	-	-	yes
	secondaryHosts	Target host name which secondary volume has allocated to.	-	-	
	usage	Volume Usage name	-	-	
	pairName	Copy Pair Name	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	primaryVolume	LDEV ID of P-Vol	-	-	
	secondaryVolume	LDEV ID of S-Vol	-	-	
	storageSystem	Storage Array name	-	-	
	deviceManagerName	Device Manager name	-	-	
	tiPoolId	Pool ID which created V-VOL is allocated	-	-	
	primaryVirtualVolume	LDEV ID of primary volume in virtual storage array	-	-	
	secondaryVirtualVolume	LDEV ID of secondary volume in virtual storage array	-	-	
	virtualStorageSystem	Virtual storage array name	-	-	

Table 67 replication.taskResultRawData.ldevs

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	values	S-Vol's volume information raw data	-	-	yes

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	usage	Volume Usage of S-Vol	-	-	
	deviceId	Created DP/DT volume's LDEV ID	-	-	
	storageSystemType	Display Array Type of the target storage which volume has been allocated.	-	-	
	storageSystemSerialNumber	Serial Number of the target storage which volume has been allocated.	-	-	
	deviceManagerName	Device Manager name which manages the storage system that has the created volume.	-	-	
	displayUnit	Unit name string for displaying volume capacity size.	block/K B/MB/G B/TB	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	virtualSerialNumber	Virtual serial Number of the selected virtual storage system.	-	-	
	virtualLdevId	Created virtual DP/DT volume's LDEV ID	-	-	

Table 68 replication.taskResultRawData.lunPaths

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	values	Path information raw data	-	-	yes
	usage	VolumeUsage	-	-	
	hostName	Host Name	-	-	
	hostPortName	Host port name	-	-	
	hostStorageDomainName	Host Storage Domain name	-	-	
	hostStorageDomainId	Host Storage Domain ID	-	-	
	lun	LUN Number	-	-	
	portWorldWideName	Storage Port WWN	-	-	
	targetIscsiName	iSCSI name	-	-	
	portName	Storage system's port name	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	portType	Port Type of storage system (FC or iSCSI)	-	-	
	portObjectId	Port Object ID of Storage system	-	-	
	portId	Port ID of storage system	-	-	
	ldevNumber	LDEV number	-	-	
	ldevLabel	LDEV Label	-	-	
	dpPoolId	Pool ID	-	-	
	dpPoolName	Pool Name			
	storageSystemName	Storage System name	-	-	
	storageSystemModel	Model name of Storage system	-	-	
	family	Array Family of Storage system	-	-	
	storageSystemSerialNumber	Serial Number of storage system	-	-	
	capacity	Volume Capacity	-	-	
	unit	Unit of volume capacity for display	-	-	



Data nesting information		Explanation	Range	Remarks	Repeatable *1
	provisionedCapacityInBlock	Created volume capacity (in number of Block)	-	-	
	pairVolumeType	Volume's pair type (P or S)	-	-	
	volLdevId	LDEV ID	-	-	
	volLuNumber	LU number	-	-	
	deviceManagerTaskName	Device Manager task name	-	-	
	deviceManagerName	Device Manager name	-	-	
	virtualStorageSystemName	Virtual storage array name	-	-	
	virtualStorageSystemType	Display name of virtual storage array's virtual model (Array Type)	-	-	
	virtualSerialNumber	Serial Number of virtual storage array	-	-	
	virtualLdevId	Virtual LDEV ID	-	-	

**Table 69 replication.taskResultRawData.copyPairs**

Data nesting information		Explanation	Range	Remarks	Repeatable* 1
copyResults		Pair definition information on raw data	-	-	yes
	copyGroupName	Copy Group name	-	-	
	primaryPairManagementServer	Pair management server for P-Vol	-	-	
	primaryInstanceNumber	RAID Manager instance number for P-Vol	-	-	
	primaryUdpPort	UDP port number for P-Vol	-	-	
	primaryHosts	Target hosts of volume allocation for P-Vol	-	-	
		name	Host name	-	-
	secondaryPairManagementServer	Pair management server for S-Vol	-	-	
	secondaryInstanceNumber	RAID Manager instance number for S-Vol	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable* 1
	secondaryUdpPort	UDP port number for S-Vol	-	-	
	secondaryHosts	Target hosts of volume allocation for S-Vol	-	-	
		name	Host name	-	-
	usage	VolumeUsage	-	-	
	pairName	Pair name	-	-	
	primaryVolumeNumber	LDEV ID of P-Vol (in dec.)	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable* 1
	primaryVolumeNumberStr	LDEV ID of P-Vol. If a storage is USP V, VSP, VSP G1000, VSP G1000, VSP F1500, HUS VM, VSP Fx00 models, VSP Fx00 models, it will be expressed in hex. If a storage is AMS, HUS 100, it will be expressed in dec.	-	-	
	secondaryVolumeNumber	LDEV ID of S-Vol (in dec.)	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable* 1
	secondaryVolumeNumberStr	LDEV ID of P-Vol. If a storage is USP V, VSP, VSP G1000, VSP G1000, VSP F1500, HUS VM, VSP Fx00 models, VSP Fx00 models, it will be expressed in hex. If a storage is AMS, HUS 100, it will be expressed in dec.	-	-	
	storageSystemName	Storage System name	-	-	
	tiPoolId	Pool ID of S-VOL			
	primaryVirtualVolumeNumberStr	LDEV ID of primary volume in virtual storage array	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable* 1
	secondaryVirtualVolumeNumberStr	LDEV ID of secondary volume in virtual storage array	-	-	
	virtualStorageSystemName	Virtual storage array name	-	-	

## Snapshot (Thin Image) service properties

Use the following properties to modify or create values for the Snapshot (Thin Image) service.



**Note:** The term "VSP Gx00 models" refers to the Virtual Storage Platform G200, G400, G600, G800 product models. The term "VSP Fx00 models" refers to the Virtual Storage Platform F400, F600, F800 product models.

## Snapshot (Thin Image) edit

key Name	Explanation	Input/Output	Type	Range	Default value
replication.advancedOption.advancedOptions.value	Value of Advanced Option property group.	Input	File	See the "File type property list" section following this table.	
replication.volumeSetting.primaryVolumeSettings.value	Value of P-Vol's Volume Setting for Editing.	Input	File	Same as provisioning.volumeSettings.value. Please refer to it.	

key Name	Explanation	Input/Output	Type	Range	Default value
replication.volumeSetting.primaryVolumeSettings.restriction	Restriction condition for a value of P-Vol's Volume Setting for Editing.	Input	File	Same as provisioning.volumeSettings.restriction. Please refer to it.	
replication.volumeSetting.secondaryVolumeSettings.value	Value of S-Vol's Volume Setting for Editing.	Input	File	See the "File type property list" section following this table.	
replication.volumeSetting.secondaryVolumeSettings.restriction	Restriction condition for a value of S-Vol's Volume Setting for Editing.	Input	File	See the "File type property list" section following this table.	
replication.copyPairSetting.numberOfGenerations	Number of Copy Group generation.	Input	Integer	1 - 3	

key Name	Explanation	Input/Output	Type	Range	Default value
replication.copyPairSetting.prefixOfCopyGroupNam	Copy Group Prefix.	Input	String	The length must be less than 16 and the string consist of the following character set. A string starts from '-' is not allowed. A-Z,a-z,0-9,'-',',','_',';','@','	
replication.copyPairSetting.initialCopyEnabled	Flag(Switch) of enabling initial copy.	Input	Boolean	true = do pair definition & initial copy false = do pair definition	
replication.copyPairSetting.groupType	Group type which the pair belongs to.	Input	String	TI_SG = Snapshot group TI_CG = Copy group.	
replication.copyPairSetting.ctgOption	CTG option.	Input	Boolean	true = copy pair is created by using CTG option false = copy pair is created by not using CTG option.	
replication.hostSetting.targetHosts.value	Target host name for volume allocation.	Input	File	See the "File type property list" section following this table.	



key Name	Explanation	Input/Output	Type	Range	Default value
replication.copyPairSetting.virtualLdevEnabled	Use VLDEV for VSM Volumes.	Input	Boolean	true = copy pair is created by using VLDEV ID false = copy pair is created by using LDEV ID .	

#### Required property list in Edit Service

- replication.advancedOption.advancedOptions.value
- replication.volumeSetting.secondaryVolumeSettings.value
- replication.copyPairSetting.numberOfGenerations
- replication.copyPairSetting.prefixOfCopyGroupName
- replication.copyPairSetting.initialCopyEnabled
- replication.copyPairSetting.groupType
- replication.copyPairSetting.ctgOption
- replication.copyPairSetting.virtualLdevEnabled

#### File type property list

\*1: When you repeat a repeatable item, you must include all lower layer tags in each repeated item.

**Table 70 replication.advancedOption.advancedOptions.value**

Data nesting information	Explanation	Range	Remarks	Repeatable *1
values	advanced Option root	-	-	-

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	numberOfPaths	number of paths	1-65536	If an invalid number was specified that is larger than the maximum number of ports in a target host, the task will fail with warning message.	
	hostModeSettings	Host Mode	-	-	Yes.
	arrayType	Array of display array family name	VSP USP V HUS VM VSP G1000 VSP G1500 VSP F1500 HUS AMS VSP Fx00 models VSP Gx00 models	-	

Data nesting information			Explanati on	Range	Remarks	Repeatable *1
		hostMode	Host Mode value	String of Host Mode *2: Also refer to "Table 4-5 Values that can be specified in the hostmode parameter" in the <i>Hitachi Command Suite CLI Reference Guide</i> .	If you specify "Auto", the value will be set by default value. The default value is decided by specified host's OS type and selected target storage. If you specify non- existed host mode value, Automati on Director treats it as "Auto".	

Data nesting information			Explanation	Range	Remarks	Repeatable *1
		hostMode Options	Host Mode Options value	Host Mode Option's value in integer or string. *2: Also refer following items in <i>Hitachi Command Suite CLI Reference Guide</i> .  - For USP V, VSP, VSP G1000, VSP G1000, VSP F1500, HUS VM, VSP Fx00 models, VSP Fx00 models: "Table 4-7 parameters for hostmodeoption"  - For AMS, HUS 100: "Table 4-6 parameters for hostmode2"  <b>Note:</b> hostmode2 means the host mode option for AMS, HUS 100:. In the Device Manager GUI, it is displayed as host mode option.	-	

Data nesting information	Explanation	Range	Remarks	Repeatable *1
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Table 71 replication.volumeSetting.secondaryVolumeSettings.value

Data nesting information	Explanation	Range	Remarks	Repeatable *1
values	Information for Volume Setting in Edit.	-	-	Yes.
usage	String value for Volume Usage.	Length must be less than 64.	-	
copyPairCreationEnabled	On/Off for whether Automation Director creates copy pair.	Boolean.	-	
storageProfile	Storage Profile name.	Storage Profile name which is already defined.	-	
ldevLabel	LDEV Label.	The character which can be used: A-Za-z0-9 ~!@#\$%^&*()_+={}[] ;:'<>./` length must be less than 64.	-	
lunSetting	LUN settings information.	-	-	

Data nesting information			Explanation	Range	Remarks	Repeatable *1
		lunStartsFrom	Start number of LUN.	0 - 07FF * Also see Remarks.	Must be specified in hex. Ex. 01DC.	
		averageDifferentialData	Average differential data size per collection (%).	1-100.		

**Table 72 replication.volumeSetting.secondaryVolumeSettings.restriction**

Data nesting information			Explanation	Range	Remarks	Repeatable *1
		type	-	-	-	
		visibility	-	-	-	
		readOnly	-	-	-	
		itemInstances	-	-	-	Yes.
		type	-	-	-	
		properties	-	-	-	
		usage	Volume Usage (Omitted).	-	-	
		type	-	-	-	
		visibility	-	-	-	
		readOnly	-	-	-	
		defaultValue	* Does not require editing.	-(length must be less than 64).	-	

Data nesting information				Explanation	Range	Remarks	Repeatable *1
		isCreateCopyPair		On/Off switch for whether Automation Director creates copy pair (Omitted).	-	-	
			type	-	-	-	
			visibility	-	-	-	
			readOnly	-	-	-	
			defaultValue	-		-	
		storageProfile		Storage Profile (Omitted).	-	-	
			type	-	-	-	
			visibility	-	-	-	
			readOnly	-	-	-	
			defaultValue	* Does not require editing.	String.	-	
		ldevLabel		LDEV Label.	-	-	
			type	-	-	-	
			visibility	-	-	-	
			defaultValue	* Does not require editing.	- (length must be less than 64).		
		lunSetting		LUN information (Omitted).	-	-	
			type	-	-	-	

Data nesting information				Explanation	Range	Remarks	Repeatable *1
			hidden	-	-	-	
			properties	-	-	-	
			lunStartsFrom	-	-	-	
			type	-	-	-	
			visibility	-	-	-	
			defaultValue	Start number of LUN.	0 - 07FF * Also see Remarks.	Must be specified in hex. Ex. 01DC.	
		averageDifferentialData		Average differential data size per collection (%).			
			type	-			
			visibility	-			
			readOnly	-			
			hidden	-			
			defaultValue	-	1-100.		

**Table 73 replication.hostSetting.targetHosts.value**

Data nesting information	Explanation	Range	Remarks	Repeatable *1
values	Array of host name strings information	-	-	-



Data nesting information		Explanation	Range	Remarks	Repeatable *1
	deviceManagerName	Name of Device Manager that manages the host	Device Manager name that is specified in Device Manager connections	-	-
	hosts	Array of host name string	-	-	-
	name	Host name string	-	-	-
	hostGroupName	Host group name string	* See Remarks.	Specify the host group name that connects S-VOL. If the host name is specified in Submit, this setting is ignored.	-

## Snapshot (Thin Image) submit

key Name	Explanation	Input/Output	Type	Range	Default value
replication.hostSetting.targetHosts.value	Target host name for volume allocation.	Input	File	Specified host must be discovered by Device Manager that is registered in Automation Director. See the "File type property list" section following this table.	
replication.copyPairSetting.prefixOfCopyGroupName	Copy Group Prefix name.	Input	String	The length must be less than 28 and the string consist of the following character set. A string starts from '-' is not allowed. A-Z,a-z,0-9,'-', '_', ':', '@'.	
provisioning.taskResultRawData.ldevs	Volume information for P-Vol.	Input	File	See the "File type property list" section that follows this table.	

### File type property list

\*1: When you repeat a repeatable item, you must include all lower layer tags in each repeated item.

**Table 74 replication.hostSetting.targetHosts.value**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
Values		Array of host name strings information.	-	-	-
	deviceManager Name	Device Manager name which manage the host.	Device Manager name which is specified in Device Manager connections .	-	-
	hosts	Array of host name string.	-	-	-
	name	Host name string.	-	-	-
	hostGroupName	* See Remarks.	-	Cannot edit. (The specified value is ignored.)	

**Table 75 provisioning.taskResultRawData.ldevs**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
Values		Array of host name strings information.	-	-	-
	usage	Volume Usage of P-Vol.	-	-	yes
	deviceId	LDEV ID of created volume from HDP/HDT.	-	-	
	storageSystemType	Display array type of selected storage system which has the created volume.	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	storageSystemSerialNumber	Serial Number of selected storage system which has the created volume.	-	-	
	deviceManagerName	Device Manager name which manages the storage system that has the created volume.	-	-	
	displayUnit	Unit name string for displaying volume capacity size.	block/KB/MB/GB/TB	-	
	virtualSerialNumber	Virtual serial Number of the selected virtual storage system.	-	-	
	virtualLdevId	LDEV ID of created virtual volume from HDP/HDT.	-	-	

## Snapshot (Thin Image) task detail

This section describes the property list and explains the snapshot service specific properties.

Task detail has two snapshot-specific properties.

- Input value in submit task (same as the property for submit)
- Run result details of task (see following table)

key Name	Explanation	Input/Output	Type	Range	Default value
replication.taskResult.lunPathConfigurationInformation	Task run result information.	Output	File	See the "File type property list" section following this table.	

key Name	Explanation	Input/Output	Type	Range	Default value
replication.taskResult.NumberOfLunPaths	Task run result information.	Output	string	Number of allocated LUN paths.	
replication.taskResult.CopyPairConfigurationInformation	Task run result information.	Output	File	See the "File type property list" section following this table.	
service.errorMessage	Task run result information.	Output	string	Summary information of error messages.	
replication.taskResultRawData.ldevs	Task run result information.	Output	File	See the "File type property list" section following this table.	
replication.taskResultRawData.lunPaths	Task run result information.	Output	File	See the "File type property list" section following this table.	
replication.taskResultRawData.CopyPairs	Task run result information.	Output	File	See the "File type property list" section following this table.	

### File type property list

\*1: When you repeat a repeatable item, you must include all lower layer tags in each repeated item.

**Table 76 replication.taskResult.lunPathConfigurationInformation**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		LUN Path configuration part of task result.	-	-	Yes.
	usage	Volume Usage name.	-	-	
	host	Host name.	-	-	
	hostPort	Port name on the host.	-	-	
	lun	LUN Number.	-	-	
	storagePort	Port ID.	-	-	
	portType	Port Type(FC or iSCSI).	-	-	
	volume	LDEV ID.	-	-	
	ldevLabel	LDEV label.	-	-	
	dpPool	Pool ID.	-	-	
	storageSystem	Storage Array name.	-	-	
	provisionedCapacity	Created volume capacity.	-	-	
	capacity	Specified volume capacity in Submit.	-	-	
	hostGroup	Host Group name.	-	-	
	deviceManagerTaskName	Device Manager task name.	-	-	
	deviceManagerName	Device Manager name.	-	-	
	virtualStorageSystemName	Virtual storage array name.	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	virtualStorageSystemType	Display name of virtual storage array's virtual model (Array Type).	-	-	
	virtualSerialNumber	Serial Number of virtual storage array.	-	-	
	virtualLdevId	LDEV ID in virtual storage array.	-	-	

Table 77 replication.taskResult.copyPairConfigurationInformation

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		Copy Pair Configuration part of task result	-	-	yes
	copyGroupName	Copy Group name	-	-	
	primaryPairManagementServer	Pair management server for P-Vol	-	-	
	primaryInstanceNumber	RAID Manager instance number for P-Vol	-	-	
	secondaryPairManagementServer	Pair management server for S-Vol	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	secondaryInstanceNumber	RAID Manager instance number for S-Vol	-	-	
	primaryHosts	Target host name which primary volume has allocated to.	-	-	yes
	secondaryHosts	Target host name which secondary volume has allocated to.	-	-	
	usage	Volume Usage name	-	-	
	pairName	Copy Pair Name	-	-	
	primaryVolume	LDEV ID of P-Vol	-	-	
	secondaryVolume	LDEV ID of S-Vol	-	-	
	storageSystem	Storage Array name	-	-	
	deviceManagerName	Device Manager name	-	-	
	tiPoolId	Pool ID which created V-VOL is allocated	-	-	



Data nesting information		Explanation	Range	Remarks	Repeatable *1
	primaryVirtualVolume	LDEV ID of primary volume in virtual storage array	-	-	
	secondaryVirtualVolume	LDEV ID of secondary volume in virtual storage array	-	-	
	virtualStorageSystem	Virtual storage array name	-	-	

**Table 78 replication.taskResultRawData.ldevs**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	values	S-Vol's volume information raw data	-	-	yes
	usage	Volume Usage of S-Vol	-	-	
	deviceId	Created DP/DT volume's LDEV ID	-	-	
	storageSystemType	Display Array Type of the target storage which volume has been allocated.	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	storageSystemSerialNumber	Serial Number of the target storage which volume has been allocated.	-	-	
	deviceManagerName	Device Manager name which manages the storage system that has the created volume.	-	-	
	displayUnit	Unit name string for displaying volume capacity size.	block/K B/MB/G B/TB	-	
	virtualSerialNumber	Virtual serial Number of the selected virtual storage system.	-	-	
	virtualLdevId	Created virtual DP/DT volume's LDEV ID	-	-	

Table 79 replication.taskResultRawData.lunPaths

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	values	Path information raw data	-	-	yes

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	usage	VolumeUsage	-	-	
	hostName	Host Name	-	-	
	hostPortName	Host port name	-	-	
	hostStorageDomainName	Host Storage Domain name	-	-	
	hostStorageDomainId	Host Storage Domain ID	-	-	
	lun	LUN Number	-	-	
	portWorldWideName	Storage Port WWN	-	-	
	targetIscsiName	iSCSI name	-	-	
	portName	Storage system's port name	-	-	
	portType	Port Type of storage system (FC or iSCSI)	-	-	
	portObjectId	Port Object ID of Storage system	-	-	
	portId	Port ID of storage system	-	-	
	ldevNumber	LDEV number	-	-	
	ldevLabel	LDEV Label	-	-	
	dpPoolId	Pool ID	-	-	
	dpPoolName	Pool name	-	-	
	storageSystemName	Storage System name	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	storageSystemModel	Model name of Storage system	-	-	
	family	Array Family of Storage system	-	-	
	storageSystemSerialNumber	Serial Number of storage system	-	-	
	capacity	Volume Capacity	-	-	
	unit	Unit of volume capacity for display	-	-	
	provisionedCapacityInBlock	Created volume capacity (in number of Block)	-	-	
	pairVolumeType	Volume's pair type (P or S)	-	-	
	volLdevId	LDEV ID	-	-	
	volLuNumber	LU number	-	-	
	deviceManagerTaskName	Device Manager task name	-	-	
	deviceManagerName	Device Manager name	-	-	
	virtualStorageSystemName	Virtual storage array name	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable* *1
	virtualStorageSystemType	Display name of virtual storage array's virtual model (Array Type)	-	-	
	virtualSerialNumber	Serial Number of virtual storage array	-	-	
	virtualLdevId	Virtual LDEV ID	-	-	

Table 80 replication.taskResultRawData.copyPairs

Data nesting information		Explanation	Range	Remarks	Repeatable* 1
copyResults		Pair definition information raw data	-	-	yes
	copyGroupName	Copy Group name	-	-	
	primaryPairManagementServer	Pair management server for P-Vol	-	-	
	primaryInstanceNumber	RAID Manager instance number for P-Vol	-	-	
	primaryUdpPort	UDP port number for P-Vol	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable* 1
	primaryHosts	Target hosts of volume allocation for P-Vol	-	-	
	name	Host name	-	-	
	secondaryPairManagementServer	Pair management server for S-Vol	-	-	
	secondaryInstanceNumber	RAID Manager instance number for S-Vol	-	-	
	secondaryUdpPort	UDP port number for S-Vol	-	-	
	secondaryHosts	Target hosts of volume allocation for S-Vol	-	-	
	name	Host name	-	-	
	usage	VolumeUsage	-	-	
	pairName	Pair name	-	-	
	primaryVolumeNumber	LDEV ID of P-Vol (in dec.)	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable* 1
	primaryVolumeNumberStr	LDEV ID of P-Vol. If a storage is USP V, VSP, VSP G1000, VSP G1000, VSP F1500, HUS VM, VSP Fx00 models, VSP Fx00 models, it will be expressed in hex. If a storage is AMS, HUS 100, it will be expressed in dec.	-	-	
	secondaryVolumeNumber	LDEV ID of S-Vol (in dec.)	-	-	
	secondaryVolumeNumberStr	LDEV ID of P-Vol. If a storage is USP V, VSP, VSP G1000, VSP G1000, VSP F1500, HUS VM, VSP Fx00 models, VSP Fx00 models, it will be expressed in hex. If a storage is AMS, HUS 100, it will be expressed in dec.	-	-	
	storageSystemName	Storage System name	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable* 1
	tiPoolId	Pool ID which created V-VOL is allocated	-	-	
	virtualStorageSystemType	Display name of virtual storage array's virtual model (Array Type)	-	-	
	virtualSerialNumber	Serial Number of virtual storage array	-	-	
	virtualLdevId	Virtual LDEV ID	-	-	

## Allocate like volumes service properties

Use the following properties to modify or create values for the Allocate like volumes service.



**Note:** The term "VSP Gx00 models" refers to the Virtual Storage Platform G200, G400, G600, G800 product models. The term "VSP Fx00 models" refers to the Virtual Storage Platform F400, F600, F800 product models.



## Allocate like volumes (edit)

Key Name	Explanation	Input/Output	Type	Range	Default value
allocatelikevolumes.volumeSetting.volumeSettings.restriction	Threshold information about the volume capacity and the number of volumes to create.	Input	File	See the "File type property list" section following this table.	

## File type property list

Table 81 allocatelikevolumes.volumeSetting.volumeSettings.restriction

Data nesting information	Explanation	Range	Remarks	Repeatable *1
type	-	-	-	-
visibility	-	-	-	-
readOnly	-	-	-	-
properties	-	-	-	-
capacity	Threshold information of volume capacity	-	-	-
type	-	-	-	-
visibility	-	-	-	-
readOnly	-	-	-	-
optionValues	-	-	-	-
method	Value type of threshold of number of volumes	"specific" : Multiple Values "range" : Range not specified : No Restriction	-	-

Data nesting information				Explanation	Range	Remarks	Repeatable *1
			values	Threshold value of volume capacity	If the method is "specific", specify the value list that can be specified. If the method is "range", specify the minimum value and maximum value in order.	-	-
		defaultValue		Default values of number of volume capacity	If the method is "specific", specify one of the values. If the method is "range", specify a value in the value range.	-	-
	numberOfVolumes			Threshold information of number of volumes.	-	-	-
		type		-	-	-	-
		visibility		-	-	-	-
		readOnly		-	-	-	-
		optionValues		-	-	-	-
			method	Value type of threshold value of volume capacity	"specific" : Multiple Values "range" : Range not specified : No Restriction	-	-

Data nesting information				Explanation	Range	Remarks	Repeatable *1
			values	Threshold of number of volumes	If the method is "specific", specify the value list that can be specified. If the method is "range", specify the minimum value and maximum value in order.	-	-
		defaultValue		Default values of number of volume capacity	If the method is "specific", specify one of the values.  If the method is "range", specify a value in the value range.	-	-

### Allocate like volumes (submit)

KeyName	Explanation	Input/Output	Type	Range	Default value
allocatelikevolumes.volumeSource.value	The referenced volume information.	Input	File	See the "File type property list" section following this table.	
allocatelikevolumes.volumeSettings.value	Information about the volume capacity and the number of volumes to allocate.	Input	File	See the "File type property list" section following this table.	

**Table 82 allocatelikevolumes.volumeSource.volumeSource.value**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		-	-	-	-
	deviceManagerName	The name of the Device Manager instance that manages the storage system of the referenced volume.	The name specified in Device Manager Connections	-	-
	lunPath	-	-	-	-
	hostPort	Host port WWN	00.00.00.0 0.00.00.00. 00- FF.FF.FF.FF. FF.FF.FF.FF	-	-
	storagePort	Storage port WWN	00.00.00.0 0.00.00.00. 00- FF.FF.FF.FF. FF.FF.FF.FF	-	-
	lun	LU Number (The logical unit number assigned to the volume for a host)	0 - 07FF * Also see Remarks.	Must be specified in hex. Ex. 01DC	-

**Table 83 allocatelikevolumes.volumeSetting.volumeSettings.value**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		-	-	-	-

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	capacity	The size of the allocated volumes	Volume capacity	<p>Refer to the "capacity" row in the "AddVirtual Volume command parameters" table in <i>Hitachi Command Suite CLI Reference Guide</i>.</p> <p>VSP G1000, VSP G1000, VSP F1500 (microcode 80-03-0X-XX/XX or later) : 48000~274877906944KB(=256TB) VSP G1000, VSP G1000, VSP F1500 (microcode earlier than 80-03-0X-XX/XX) : 48000~64424505600KB(=60TB) (microcode earlier than 80-03-0X-XX/XX) : 48000~64424505600KB(=60TB)</p>	-

Data nesting information		Explanation	Range	Remarks	Repeatable *1
				(microcode earlier than 80-03-0X-XX/XX) : 48000~ 64424505600 KB(=60TB)  VSP Gx00 models (microcode earlier than 83-02-0X-XX/XX or later) :  VSP Gx00 models(microcode earlier than 83-02-0X-XX/XX) : 48000~ 64424505600 KB  VSP Fx00 models : 48000~ 274877906944KB(=256TB)  VSP : 48000~ 64424505600 KB USP V(microcode earlier than 06-03) : 48000~ 3221159680 KB USP V(microcode 06-03 or later) :	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
				48000 ~ 429496729 6 KB HUS VM : 48000 ~ 644245056 00 KB HUS : 32768 ~ 137438953 472 KB(=128TB) AMS : 32768 ~ 644245094 4 KB	
	numberOfVolumes	The number of volumes to allocate	Number of volumes	1 - 500	-

### Allocate like volumes (task detail)

keyName	Explanation	Input/Output	Type	Range	Default value
allocatelikevolumes.taskResult.lunPathConfigurationInformation	Task run result information.	Output	File	See the "File type property list" section following this table.	
allocatelikevolumes.taskResult.numberOfLdev	Task run result information.	Output	String	The number of the allocated volumes.	
allocatelikevolumes.taskResult.numberOfLunPath	Task run result information.	Output	String	The number of paths.	

keyName	Explanation	Input/Output	Type	Range	Default value
service.error Message	Task run result information.	Output	String	Summary information of error messages.	
allocatelikevolumes.taskResultRawData.ldevs	Task run result information.	Output	File	See the "File type property list" section following this table.	
allocatelikevolumes.taskResultRawData.lunPaths	Task run result information.	Output	File	See the "File type property list" section following this table.	

### File type property list

**Table 84 allocatelikevolumes.taskResult.lunPathConfigurationInformation**

Data nesting information	Explanation	Range	Remarks	Repeatable*1
values	LUN path Configuration information.	-	-	Yes.
usage	Volume Usage name (fixed value "-" in Allocate like volumes).	-	-	
host	Host name.	-	-	
hostPort	Host Port WWN/iSCSI Name.	-	-	
lun	LU Number.	-	-	
storagePort	Storage Port WWN.	-	-	
portType	Storage Port type (FC or iSCSI).	-	-	
volume	LDEV ID.	-	-	



Data nesting information		Explanation	Range	Remarks	Repeatable *1
	dpPool	Pool ID.	-	-	
	storageSystem	Storage System name.	-	-	
	provisionedCapacity	The size of the allocated volumes (Blocks).	-	-	
	capacity	The size of the allocated volumes that specified when submit.	-	-	
	hostGroup	Host Group name/ iSCSI Target iSCSI Name.	-	-	
	deviceManagerTask Name	Task name of Device Manager.	-	-	
	deviceManagerName	The name of Device Manager that ran the task.	-	-	
	virtualStorageSystemName	The name of the virtual storage system.	-	-	
	virtualStorageSystemType	The display array type of the virtual storage system.	-	-	
	virtualSerialNumber	The serial number of the virtual storage system.	-	-	
	virtualLdevId	Virtual LDEV ID.	-	-	

Table 85 allocatelikeyolumes.taskResultRawData.ldevs

Data nesting information	Explanation	Range	Remarks	Repeatable *1
values	Volume information	-	-	yes

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	usage	Volume Usage name (fixed value "-" in Allocate like volumes)	-	-	
	deviceId	LDEV ID	-	-	
	storageSystemType	The display array type of the storage system of the allocated volume	-	-	
	storageSystemSerial Number	The serial number of the storage system of the allocated volume	-	-	
	deviceManagerName	The name of Device Manager that ran the task	-	-	
	displayUnit	Display unit for the size of the allocated volumes	-	-	
	virtualSerialNumber	The serial number of the virtual storage system	-	-	
	virtualLdevId	Virtual LDEV ID	-	-	

Table 86 allocatelikeyolumes.taskResultRawData.lunPaths

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	values	The LUN path information	-	-	yes
	usage	Volume Usage name (fixed value "-" in Allocate like volumes)	-	-	
	hostName	Host name	-	-	
	hostPortName	Host Port WWN/iSCSI Name	-	-	
	hostStorageDomain Name	Host storage domain name	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	hostStorageDomainId	Host Group ID/iSCSI Target ID	-	-	
	lun	LU Number	-	-	
	portWorldWideName	Storage Port WWN	-	-	
	targetIscsiName	iSCSI Target iSCSI Name	-	-	
	portName	Storage Port name	-	-	
	portType	Storage Port type (FC or iSCSI)	-	-	
	portObjectId	Storage Port object ID	-	-	
	portId	Storage Port ID	-	-	
	ldevNumber	LDEV Number	-	-	
	ldevLabel	LDEV label	-	-	
	dpPoolId	Pool ID	-	-	
	dpPoolName	Pool name	-	-	
	storageSystemName	Storage System name	-	-	
	storageSystemModel	Storage System model name	-	-	
	family	Storage System family name	-	-	
	storageSystemSerialNumber	Storage System serial number	-	-	
	capacity	The size of the allocated volumes that specified when submitted	-	-	
	unit	The unit of the allocated volumes size that specified when submitted	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	provisionedCapacityInBlock	The size of the allocated volumes (Blocks)	-	-	
	pairVolumeType	Pair type (P or S)	-	-	
	volLdevId	LDEV ID	-	-	
	volLuNumber	LU Number	-	-	
	deviceManagerTaskName	Task name of Device Manager	-	-	
	deviceManagerName	The name of Device Manager that ran the task	-	-	
	virtualStorageSystemName	The name of the virtual storage system	-	-	
	virtualStorageSystemType	The display array type of the virtual storage system	-	-	
	virtualSerialNumber	The serial number of the virtual storage system	-	-	
	virtualLdevId	Virtual LDEV ID	-	-	
	ipAddress	The IP address that can communicate to acquire host information	-	-	

## VMware service properties

Use the following properties to modify or create values for the VMware service.



**Note:** The term "VSP Gx00 models" refers to the Virtual Storage Platform G200, G400, G600, G800 product models. The term "VSP Fx00 models" refers to the Virtual Storage Platform F400, F600, F800 product models.

## VMware (edit)

key Name	Explanation	Input/Output	Type	Range	Default value
createDatastore.DatastoreEnvironmentSettings.DatastorePrefix	The prefix of the datastore name.	Input	String	The length must be less than 38.	GenericDatastore
createDatastore.DatastoreEnvironmentSettings.VMFSVersion	Value of VMFS Version.	Input	integer	3,5.	5
createDatastore.DatastoreEnvironmentSettings.Blocksize	Value of Block size.	Input	integer	1,2,4,8.	1
createDatastore.DatastoreEnvironmentSettings.StorageIOControl	Value to enable the control of storage.	Input	boolean	true = I/O control enabled. false = I/O control disabled.	FALSE
createDatastore.DatastoreEnvironmentSettings.Latencythreshold	Threshold of storage control.	Input	integer	5-100.	30

## VMware (submit)

keyName	Explanation	Input/Output	Type	Range	Default value
createDatastore.paths	Information of the allocated volume.	Input	File	See the "File type property list" section following this table.	
createDatastore.source.datastore	Information of the source data store.	Input	File	See the "File type property list" section following this table.	
createDatastore.DatastoreEnvironmentSettings.DatastorePrefix	The prefix of the datastore name.	Input	String	The length must be less than 38.	GenericDatastore
createDatastore.taskResult.RawData.Datastores	Information of the created datastore.	Output	File	See the "File type property list" section following this table.	
service.errorMessage	Error message.	Output	String	Summary of error message.	

**File type property list**

\*1 : Repeatable items must be repeated and must include all lower layer tags.

**Table 87 createDatastore.paths**

Data nesting information	Explanation	Range	Remarks	Repeatable *1
values	Information of the allocated volume.	-	-	yes
hostname	host name.	-	-	-

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	serialNumber	Serial Number of storage system.	-	-	-
	ldevNumber	LDEV number.	-	-	-
	usage	Name of volume usage.	-	-	-
	deviceManagerName	Device Manager name.	-	-	-
	volume	LDEV ID.	-	-	-
	storageModel	Model name of storage system.	-	-	-
	ipAddress	IP address of host.	-	-	-
	storageSystem	Array family name of storage system.	-	-	-

Table 88 createDatastore.source.datastore

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		Information of the source datastore.	-	-	-
	vcenterIp	Connection information name of the source vCenter.	-	-	-
	hostName	Name of the source host.	-	-	-
	datastoreName	Name of the source datastore.	-	-	-
	extentName	Detailed information of the source datastore.	-	-	-

**Table 89 createDatastore.taskResult.RawData.Datastores**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		Information of the created datastore.	-	-	yes
	canonicalName	Detailed information of the source data store.	-	-	-
	datastoreName	Name of the source datastore.	-	-	-
	vmfsVersion	Value of VMFS Version.	-	-	-
	blockSizeMB	Value of Block size.	-	-	-
	datastoreAccessMode	Access mode of datastore.	-	-	-
	storageIOControlEnabled	Value to enable the control of storage.	-	-	-
	latencyThreshold	Threshold of storage control.	-	-	-
	hostName	Name of host.	-	-	-
	storageSystem	Name of storage system.	-	-	-
	volume	LDEV ID.	-	-	-
	volumeUsage	Name of Volume usage.	-	-	-
	deviceManagerName	Name of Device Manager.	-	-	-

## VMware (task detail)

This section provides the property lists and the explanations of provisioning-specific properties.

There are two Automation Director-specific properties in Task Detail:

- Input value in submit task



- Run result details of task



**Note:** The input value in submit task is same as the properties of submit properties.

keyName	Explanation	Input/Output	Type	Range	Default value
createDatastore.taskResult.RawData.Datastores	The run result information of task.	Output	File	See the "File type property list" section following this table.	
service.error Message	The run result information of task.	Output	String	Summary of error message.	

### File type property list

\*1 : Repeatable items must be repeated and must include all lower layer tags.

**Table 90 createDatastore.taskResult.RawData.Datastores**

Data nesting information	Explanation	Range	Remarks	Repeatable *1
values	Run result.	-	-	yes
canonicalName	Canonical Name.	-	-	
datastoreName	Datastore Name.	-	-	
vmfsVersion	VMFS Version.	-	-	
blockSizeMB	Block size.	-	-	
datastoreAccessMode	Datastore Access Mode.	-	-	
storageIOControlEnabled	Storage I/O Control.	-	-	
latencyThreshold	Latency Threshold.	-	-	
hostName	Host Name.	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	storageSystem	Storage System.	-	-	
	volume	Volume.	-	-	
	volumeUsage	Volume Usage.	-	-	
	deviceManagerName	Device manager that created the volume.	-	-	

## Oracle service properties

Use the following properties to modify or create values for the Oracle service.



**Note:** The term "VSP Gx00 models" refers to the Virtual Storage Platform G200, G400, G600, G800 product models. The term "VSP Fx00 models" refers to the Virtual Storage Platform F400, F600, F800 product models.

## Oracle (edit)

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val.*	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
Oracle.primaryServerName	In an Oracle RAC configuration, specify the host name of a primary DB server. In the case of Single Instance configuration, specify the host name of an Oracle DB server. Specify the same name as the name written in the hosts file.	in	string	Enter no more than 255 characters. Usable characters are alphanumeric characters and the following characters: . -		Req'd	Req'd	Req'd	Req'd

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val.*	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
Oracle.memberServerName	In an Oracle RAC configuration, specify the host name of a member DB server. In a Single Instance configuration, you are not required to specify. Specify the same one as written in hosts file.	in	string	Enter no more than 255 characters. Usable characters are alphanumeric characters and the following characters: . - ,		Req'd	Req'd	Req'd	Req'd
Oracle.asm InstanceID	Specify the Oracle ASM instance ID.	in	string	Enter no more than 8 characters. Usable characters are alphanumeric characters and the following characters: _ # \$ +		Req'd	Req'd	Req'd	Req'd

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val. *	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
Oracle.grid HomePath	Specify the path of the home directory of Oracle Grid Infrastructure.	in	string	Enter no more than 255 characters. Usable characters are alphanumeric characters and the following characters: " # % & ' ( ) * + , - . / : ; < = > ? @ _		Req'd	Req'd	Req'd	Not Req'd
Oracle.grid UserID	Specify the user ID for the Oracle Grid Infrastructure.	in	string	Enter a character string of no more than 32 characters. The string must not include the following character : "		Req'd	Req'd	Req'd	Req'd

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val.*	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
Oracle.diskGroupName	Specify the Oracle ASM disk group to which a volume is being added.	in	string	Enter no more than 30 characters. Usable characters are alphanumeric characters and the following characters: \$ # _		Req'd	Req'd	Req'd	Req'd
Common.osUserID	Specify the user ID of the Oracle DB server.	in	string	Enter a character string of no more than 32 characters. The string must not include the following character: "		Req'd	Req'd	Req'd	Req'd

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Default Value	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
Common.osPassword	Specify the OS password of the Oracle DB server.	in	password	For the UNIX OS, enter a character string of no more than 255 characters. The string must not include the following characters: < >   ; &  For the Windows, enter no more than 255 characters.		Req'd	Req'd	Req'd	Req'd
Common.suPassword	Specify the SU password of the Oracle DB server.	in	password	Enter a character string of no more than 255 characters. The string must not include the following characters: < >   ; &.		Req'd	Req'd	Req'd	Req'd

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val.*	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
OS.privOwner	Specify the owner information set for the volume.	in	string	Enter a character string of no more than 256 characters. The string must not include the following characters: < >   ; &		Req'd	Req'd	Req'd	Not Req'd
OS.privGroupName	Specify the group name set for the volume.	in	string	Enter a character string of no more than 256 characters. The string must not include the following characters: < >   ; &		Req'd	Req'd	Req'd	Not Req'd
OS.privPerMission	This property is the access permission information to set for the volume.	in	string	Enter a number of 3 or fewer digits.	660	Req'd	Req'd	Req'd	Not Req'd



						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val.*	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
aix.attrAlgorithm	Specify the channel selection algorithm for the multipath feature.	in	list	fail_over round_robin	round_robin	Req'd	Not Req'd	Not Req'd	Not Req'd
aix.attrMode	Specify the mode of the health check for the multipath feature.	in	list	enabled failed nonactive	enabled	Req'd	Not Req'd	Not Req'd	Not Req'd
aix.attrInterval	Specify the interval of the health check for the multipath feature.	in	integer	Enter an integer from 0 to 3600.	60	Req'd	Not Req'd	Not Req'd	Not Req'd
aix.attrQueueDepth	Specify the number of I/O requests that each device can handle at one time.	in	integer	Enter an integer from 1 to 256.	32	Req'd	Not Req'd	Not Req'd	Not Req'd

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val.*	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
Oracle.directoryPathRemote	Specify the output directory for log files on the DB server.	in	string	For the UNIX OS, enter a character string of no more than 200 characters. The string must not include a space, a trailing \, a trailing /, or any of the following characters: < >   ; & * ? " % ' ` For the Windows, enter no more than 200 characters. The string must not include a trailing \, or any of the following characters: < >   ; & * ? " % /	AIX : [/tmp/Oracle_logs] Solaris: [/var/tmp/Oracle_logs] Linux: [/tmp/Oracle_logs] Windows: [C:\temp\Oracle	Req'd	Req'd	Req'd	Req'd

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val.*	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
					le_logs]				
Oracle.folderPathLocal	Specify the output directory for log files on the server that runs the service.	in	string	Enter a character string of no more than 200 characters. The string must not include a trailing \ or any of the following characters: < >   ; & * ? " %	C:\Oracle_logs	Req'd	Req'd	Req'd	Req'd

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val. *	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
UserResponsePlugin.toAddress	Specify the email addresses to enter in the TO field of notification emails sent when the service is waiting for a user response. Separate multiple addresses with commas. Example: mailA,mailB	in	string	A maximum of 1024 characters can be entered. Characters that can be used include alphanumeric characters and symbols.		Req'd	Req'd	Req'd	Req'd

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val. *	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
UserResponsePlugin.cAddress	Specify the email addresses to enter in the CC field of notification emails sent when the service is waiting for a user response. Separate multiple addresses with commas. Example: mailA,mailB	in	string	A maximum of 1024 characters can be entered. Characters that can be used include alphanumeric characters and symbols.		Req'd	Req'd	Req'd	Req'd

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val.*	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
UserResponsePlugin.bccAddress	Specify the email addresses to enter in the BCC field of notification emails sent when the service is waiting for a user response. Separate multiple addresses with commas. Example: mailA,mailB	in	string	A maximum of 1024 characters can be entered. Characters that can be used include alphanumeric characters and symbols.		Req'd	Req'd	Req'd	Req'd

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Default value.*	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
UserResponsePlugin.encodingType	Specify the encoding of notification emails sent when the service is waiting for a user response. The encodings you can specify are us-ascii, iso-2022-jp, shift_jis, euc-jp, and utf-8. If you omit this property, utf-8 is set.	in	list	us-ascii iso-2022-jp shift_jis euc-jp utf-8	utf-8	Req'd	Req'd	Req'd	Req'd

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val.*	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
UserResponsePlugin.mailSubject	Specify the subject line of notification emails sent when the service is waiting for a user response.	in	string	A character string of no more than 256 characters can be entered.	Allocate Volume and Add to Oracle Database Task Pending	Req'd	Req'd	Req'd	Req'd



						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val.*	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
UserResponsePlugin.mailBody	Specify the body text of notification emails sent when the service is waiting for a user response.	in	string	A character string of no more than 1024 characters can be entered.	All Oracle Database is pending regarding Oracle configuration. Check the foll	Req'd	Req'd	Req'd	Req'd

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val.*	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
					owing dialog :				
UserResponsePlugin.dialogText	Enter additional text to appear in the response input dialog box, in text or HTML format. Supported HTML tags are anchor tags, bold tags, break tags, font tags, italics tags, and underline tags.	in	string	A character string of no more than 512 characters can be entered.		Req'd	Req'd	Req'd	Req'd

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val.*	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
UserResponsePlugin.responseTimeout	Specify how long (in minutes) the service waits for a user response before timing out. In the event of a response timeout, the service will terminate abnormally.	in	integer	Integer between 1 and 20160 can be entered.	1440	Req'd	Req'd	Req'd	Req'd

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val. *	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
linux.multipathConfPath	Specify the path that contains the multipath.conf. This parameter can be omitted. If you do not specify a value, the directory "/etc" or "/usr/share/dec/device-mapper-multipath-0.4.9" is searched. If the file is not in the directory, an error occurs.	in	string	Enter a character string of no more than 255 characters. The string must not include a space, a trailing \, a trailing /, or any of the following characters: < >   ; & * ? " % `		Not Req'd	Not Req'd	Req'd	Not Req'd
oracle.grid Password	Specify the user password for Oracle Grid Infrastructure.	in	password	A character string of no more than 255 characters.		Not Req'd	Not Req'd	Not Req'd	Req'd

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val. *	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
oracle.label Prefix	Specify the prefix of the ASM link name.	in	string	A character string of no more than 27 characters. Spaces and the following characters cannot be used: \ / "		Not Req'd	Not Req'd	Not Req'd	Req'd
* Default value									

## Oracle (submit)

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val .*	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
Oracle.primaryServerName	In an Oracle RAC configuration, specify the host name of a primary DB server. In the case of Single Instance configuration, specify the host name of an Oracle DB server. Specify the same name as the name written in the hosts file.	Input	string	Enter no more than 255 characters. Usable characters are alphanumeric characters and the following characters: . -		Req'd	Req'd	Req'd	Req'd

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val .*	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
Oracle.memberServerName	In an Oracle RAC configuration, specify the host name of a member DB server. In a Single Instance configuration, you are not required to specify. Specify the same one as written in hosts file.	Input	string	Enter no more than 255 characters. Usable characters are alphanumeric characters and the following characters: . - ,		Req'd	Req'd	Req'd	Req'd
Oracle.asmlinstanceID	Specify the Oracle ASM instance ID.	Input	string	Enter no more than 8 characters. Usable characters are alphanumeric characters and the following characters: _ # \$ +		Req'd	Req'd	Req'd	Req'd

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val.*	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
Oracle.grid HomePath	Specify the path of the home directory of Oracle Grid Infrastructure.	Input	string	Enter no more than 255 characters. Usable characters are alphanumeric characters and the following characters: " # % & ' ( ) * + , - . / : ; < = > ? @ _		Req'd	Req'd	Req'd	Not Req'd
Oracle.grid UserID	Specify the user ID for the Oracle Grid Infrastructure.	Input	string	Enter a character string of no more than 32 characters. The string must not include the following character: "		Req'd	Req'd	Req'd	Req'd



						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val.*	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
Oracle.diskGroupName	Specify the Oracle ASM disk group to which a volume is added.	Input	string	Enter no more than 30 characters. Usable characters are alphanumeric characters and the following characters: \$ # _		Req'd	Req'd	Req'd	Req'd
Common.osUserID	Specify the user ID of the Oracle DB server.	Input	string	Enter a character string of no more than 32 characters. The string must not include the following character: "		Req'd	Req'd	Req'd	Req'd

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val .*	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
Common.o sPassword	Specify the OS password of the Oracle DB server.	Input	password	For the UNIX OS, enter a character string of no more than 255 characters. The string must not include the following characters: < >   ; &  For the Windows, enter no more than 255 characters.		Req'd	Req'd	Req'd	Req'd
Common.s uPassword	Specify the SU password of the Oracle DB server.	Input	password	Enter a character string of no more than 255 characters. The string must not include the following characters: < >   ; &.		Req'd	Req'd	Req'd	Not Req'd

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val.*	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
OS.privOwner	Specify the owner information set for the volume.	Input	string	Enter a character string of no more than 256 characters. The string must not include the following characters: < >   ; &		Req'd	Req'd	Req'd	Not Req'd
OS.privGroupName	Specify the group name set for the volume.	Input	string	Enter a character string of no more than 256 characters. The string must not include the following characters: < >   ; &		Req'd	Req'd	Req'd	Not Req'd
OS.privPerMission	This property is the access permission information to set for the volume.	Input	string	Enter a number of 3 or fewer digits.	660	Req'd	Req'd	Req'd	Not Req'd

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val.*	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
Oracle.directoryPathRemote	Specify the output directory for log files on the DB server.	Input	string	For the UNIX OS, enter a character string of no more than 200 characters. The string must not include a space, a trailing \, a trailing /, or any of the following characters: < >   ; & * ? " % ' ` For the Windows, enter no more than 200 characters. The string must not include a trailing \, or any of the following characters: < >   ; & * ? " % /	AIX : [/tmp/oracle_logs] Solaris: [/var/tmp/oracle_logs] Linux: [/tmp/oracle_logs] Windows: [C:\temp\Oracle	Req'd	Req'd	Req'd	Req'd

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val.*	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
					le_logs]				
Oracle.folderPathLocal	Specify the output directory for log files on the server that runs the service.	Input	string	Enter a character string of no more than 200 characters. The string must not include a trailing \ or any of the following characters: < >   ; & * ? " %	C:\Oracle_logs	Req'd	Req'd	Req'd	Req'd

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val .*	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
linux.multipathConfPath	Specify the path that contains the multipath.conf. This parameter can be omitted. If you do not specify a value, the directory "/etc" or "/usr/share/dec/device-mapper-multipath-0.4.9" is searched. If the file is not in the directory, an error occurs.	Input	string	Enter a character string of no more than 255 characters. The string must not include a space, a trailing \, a trailing /, or any of the following characters: < >   ; & * ? " % `		Not Req'd	Not Req'd	Req'd	Not Req'd
oracle.gridPassword	Specify the user password for Oracle Grid Infrastructure.	Input	password	A character string of no more than 255 characters.		Not Req'd	Not Req'd	Not Req'd	Req'd

						Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	Def. val.*	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
oracle.label Prefix	Specify the prefix of the ASM link name.	Input	string	A character string of no more than 27 characters. Spaces and the following characters cannot be used: \ / "		Not Req'd	Not Req'd	Not Req'd	Not Req'd
* Default value									

## Oracle (task detail)

					Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
Oracle.deviceList	List of devices on which to perform the operation.	Output	string	-	Req'd	Req'd	Req'd	Req'd

					Required to specify in each service template			
key Name	Explanation	I/O	Type	Range	AIX Prov Vol	Solaris Prov Vol	Linux Prov Vol	Windows Prov Vol
Oracle.ldevId	List of LDEV IDs on which to perform the operation.	Output	string	-	Req'd	Req'd	Req'd	Req'd

## Allocate volumes for a symmetric cluster server from two storage systems service properties

Use the following properties to modify or create values for the allocate volumes for a symmetric cluster server from two storage systems service.



**Note:** The term "VSP Gx00 models" refers to the Virtual Storage Platform G200, G400, G600, G800 product models. The term "VSP Fx00 models" refers to the Virtual Storage Platform F400, F600, F800 product models.

## Allocate volumes for a symmetric cluster server from two storage systems (edit)

keyName	Explanation	Input/Output	Type	Range	Default value
provisioning.advancedOption.advancedOptions.value	Information of dedicated AdvancedOption in edit service.	Input	File	See the "File type property list" section following this table.	
provisioning.bootVolumeSetting.volumeSettings.value	Information of dedicated VolumeSetting in Edit service.	Input	File	See the "File type property list" section following this table.	



keyName	Explanation	Input/Output	Type	Range	Default value
provisioning.bootVolumeSetting.volumeSettings.restriction	Information of dedicated VolumeSetting in Edit service.	Input	File	See the "File type property list" section following this table.	
provisioning.dataVolumeSetting.volumeSettings.value	Information of shared VolumeSetting in Edit service.	Input	File	See the "File type property list" section following this table.	
provisioning.dataVolumeSetting.volumeSettings.restriction	Information of shared VolumeSetting in Edit service.	Input	File	See the "File type property list" section following this table.	
provisioning.resourceCriteria.resourceSelectionCriteria.bootVolumeUsageSpecific.value	Information of dedicated Resource Criteria in Edit service.	Input	File	See the "File type property list" section following this table.	
provisioning.resourceCriteria.resourceSelectionCriteria.bootVolumeUsageSpecific.restriction	Information of dedicated Resource Criteria in Edit service.	Input	File	See the "File type property list" section following this table.	
provisioning.resourceCriteria.resourceSelectionCriteria.dataVolumeUsageSpecific.value	Information of shared Resource Criteria in Edit service.	Input	File	See the "File type property list" section following this table.	

keyName	Explanation	Input/Output	Type	Range	Default value
provisioning.resourceCriteria.resourceSelectionCriteria.dataVolumeUsageSpecific.restriction	Information of shared Resource Criteria in Edit service.	Input	File	See the "File type property list" section following this table.	
provisioning.storagePairSetting.primaryStorageSettings.value	Information of PrimaryStorageSetting in Edit service.	Input	File	See the "File type property list" section following this table.	
provisioning.storagePairSetting.primaryStorageSettings.restriction	Information of PrimaryStorageSetting in Edit service.	Input	File	See the "File type property list" section following this table.	
provisioning.storagePairSetting.secondaryStorageSettings.value	Information of SecondaryStorageSetting in Edit service.	Input	File	See the "File type property list" section following this table.	
provisioning.storagePairSetting.secondaryStorageSettings.restriction	Information of SecondaryStorageSetting in Edit service.	Input	File	See the "File type property list" section following this table.	

**Properties list required to specify in Edit service**

- All the above properties

**File type property list**

\*1 : Repeatable items must be repeated and must include all lower layer tags.

Allocate volumes for a symmetric cluster server from two storage systems (edit)

**Table 91 provisioning.bootVolumeSetting.volumeSettings.value**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		Volume Setting information in edit service.	-	-	yes
	usage	Characters of Volume Usage.	A maximum of 64 characters can be entered.	-	
	numberOfVolumes	Number of volumes.	1 - 500	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	capacity	Volume capacity.	<p>Specify the capacity of volumes to allocate. The following storages will be used when the specified capacity is in the range.</p> <p>Refer to the "capacity" row in the "AddVirtualVolume command parameters" table in <i>Hitachi Command Suite CLI Reference Guide</i>. VSP G1000, VSP G1000, VSP F1500 (microcode 80-03-0X-XX/XX or later) : 48000~274877906944KB(=256TB) VSP G1000, VSP G1000, VSP F1500 (microcode earlier than 80-03-0X-XX/XX) : 48000~64424505600 KB(=60TB)</p>	-	

Data nesting information	Explanation	Range	Remarks	Repeatable *1
		VSP Gx00 models (microcode 83-02-0X-XX/XX or later) : 48000~2748779069 44KB(=256TB) VSP Gx00 models (microcode earlier than 83-02-0X-XX/XX) : 48000~6442450560 0 KB VSP Fx00 models : 48000~2748779069 44KB(=256TB) VSP : 48000~6442450560 0 KB USP V (microcode earlier than 06-03) : 48000~3221159680 KB USP V (microcode 06-03 or later) : 48000~4294967296 KB HUS VM : 48000~6442450560		

Allocate volumes for a symmetric cluster server from two storage systems (edit)

Data nesting information		Explanation	Range	Remarks	Repeatable *1
			0 KB HUS : 32768 ~ 1374389534 72 KB(=128TB) AMS : 32768 ~ 6442450944 KB		
	storageProfile	Storage Profile name.	Storage Profile name that is already defined.	-	
	ldevLabel	LDEV label.	A maximum of 64 characters can be entered.	-	
	ldevSettings	LDEV setting.	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	fullAllocation	Full allocation.	Specify "Enable" to guarantee the writing to the full range of the allocated volumes.  You can only allocate volumes to the storage system that supports this feature.  If "Disable" is specified, writing to the volumes may occur an error when there is no free space in the pool.	-	
	primaryLdevIdStartsFrom	Starting number of LDEVID in primary storage.	AMS, HUS 100: 0 - 4095. USP V, VSP, VSP G1000, VSP G1000, VSP F1500, HUS VM, VSP Fx00 models, VSP Fx00 models: 00:00:00 - 00:FE:FF	-	

Data nesting information			Explanation	Range	Remarks	Repeatable *1
		secondaryLdevIdStartsFrom	Starting number of LDEVID in secondary storage.	AMS, HUS 100: 0 - 4095. USP V, VSP, VSP G1000, VSP G1000, VSP F1500, HUS VM, VSP Fx00 models, VSP Fx00 models: 00:00:00 - 00:FE:FF	-	
	lunSetting		LUN setting.	-	-	
		primaryLunStartsFrom	Starting number of LUN in primary storage.	0 - 07FF *Refer to "Remarks".	Specified in hexadecimal. Ex. 07FF is the maximum value of LUNs that can be specified in Storage that contains pools which are filled with Storage Class condition.	



Data nesting information		Explanation	Range	Remarks	Repeatable *1
	secondaryLunStartsFrom	Starting number of LUN in secondary storage.	0 - 07FF *Refer to "Remarks"	Specified in hexadecimal. Ex. 07FF is the maximum value of LUNs that can be specified in Storage that contains pools which are filled with Storage Class condition.	

**Table 92 provisioning.dataVolumeSetting.volumeSettings.value**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		Volume Setting information in edit service.	-	-	yes
	usage	Characters of Volume Usage.	A maximum of 64 characters can be entered.	-	
	numberOfVolumes	Number of volumes.	1 - 500.	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	capacity	Volume capacity.	<p>Specify the capacity of volumes to allocate. The following storages will be used when the specified capacity is in the range.</p> <p>Refer to the "capacity" raw in the "AddVirtualVolume command parameters" table in <i>Hitachi Command Suite CLI Reference Guide</i>. VSP G1000, VSP G1000, VSP F1500 (microcode 80-03-0X-XX/XX or later) : 48000~274877906944 KB(=256TB) VSP G1000, VSP G1000, VSP F1500 (microcode earlier than 80-03-0X-XX/XX) : 48000~64424505600 KB(=60TB) VSP Gx00 models (microcode 83-02-0X-XX/XX or later) : 48000~274877906944 KB(=256TB)</p>	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
			<p>VSP Gx00 models (microcode earlier than 83-02-0X-XX/XX) : 48000~64424505600 KB</p> <p>VSP Fx00 models : 48000~274877906944 KB(=256TB)</p> <p>VSP : 48000~64424505600 KB USP V (microcode earlier than 06-03) : 48000~3221159680 KB USP V (microcode 06-03 or later) : 48000~4294967296 KB HUS VM : 48000 ~ 64424505600 KB HUS : 32768 ~ 137438953472 KB(=128TB) AMS : 32768 ~ 6442450944 KB</p>		
	storageProfile	Storage Profile name.	Storage Profile name that is already defined.	-	
	ldevLabel	LDEV label.	A maximum of 64 characters can be entered.		

Allocate volumes for a symmetric cluster server from two storage systems (edit)

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	ldevSettings	LDEV setting.	-		
		Full Allocation.	Fully allocated.	Specify "Enable" to guarantee the writing to the full range of the allocated volumes. You can only allocate volumes to the storage system that supports this feature. If "Disable" is specified, writing to the volumes may occur an error when there is no free space in the pool.	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
		ldevIdStartsFrom	Starting number of LDEVID.	AMS, HUS 100: 0 - 4095. USP V, VSP, VSP G1000, VSP G1000, VSP F1500, HUS VM, VSP Fx00 models, VSP Fx00 models: 00:00:00 - 00:FE:FF	
	lunSetting		LUN setting.	-	
		lunStartsFrom	Starting number of LUN.	0 - 07FF *Refer to "Remarks".	

**Table 93**  
**provisioning.resourceCriteria.resourceSelectionCriteria.bootVolumeUsageSpecific.value**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	values	ResourceCriteria information in edit service	-	-	yes
	usage	Characters of Volume Usage.	Same as volume Setting	-	
	criteria	Filtering criteria.	-	-	

Data nesting information					Explanation	Range	Remarks	Repeatable *1
		groupCriteria			Filtering criteria of group definition.	-	-	
		infrastructureGroupCriteria			Filtering criteria of IG definition.	-	-	
			Condition		Conditional statement.	-	-	
				join	Join.	"and" or "or"		
				expressions	Identifier.	-	-	
					op	Operator.	Value defined at ValueList Common for all the resources: eq, ne, starts, ends	-

Data nesting information						Explanation	Range	Remarks	Repeatable *1	
					name	Name.	Value defined at ValueList IG: name RG: name Pool: poolId, name Port: name	-		
					value	Value.	-	-		
		resourceCriteria					Filtering criteria of RG definition.	-	-	
		*Same as infrastructureGroupCriteria						-	-	
		resourceCriteria					Filtering criteria of storage resources.	-	-	
		storagePortCriteria					Filtering criteria of storage port.	-	-	
			condition				Filtering criteria of port configuration.	-	-	
				join		Join.	"and" or "or"			
				expressions		Identifier.	-			

Data nesting information						Explanation	Range	Remarks	Repeatable *1
					op	Operator.	"eq", "ne", "starts", or "ends"		
					name	Name.	"name"		
					value	Value.	-		
				performanceCondition		Filtering criteria of port performance.	-		
					join	Join.	"and" or "or"		
				expressions		Identifier.	-		
					op	Operator.	"lt" or "gt"		
					name	Name.	"avgXferPerSec" or "avgIOPerSec"		
					value	Value.	-		
				numberCondition		Filtering criteria of port performance.	-		
					join	Join.	"and"		
				expressions		Identifier.	-		
					op	Operator.	"it"		



Data nesting information						Explanation	Range	Remarks	Repeatable *1
					name	Name.	"numberOfLuns" or "numberOfWwns"		
					value	Value.	-		
		dynamicProvisioningPoolCriteria				HDP/HDT Pool criteria.	-	-	
		*Same as infrastructureGroupCriteria				-	-	-	

**Table 94**  
**provisioning.resourceCriteria.resourceSelectionCriteria.dataVolumeUsageSpecific.value**

Data nesting information						Explanation	Range	Remarks	Repeatable *1
values						ResourceCriteria information in edit.	-	-	yes
	usage					Characters of Volume Usage.	Same as volume Setting	-	
	criteria					Filtering criteria.	-	-	
		groupCriteria				Filtering criteria of group definition.	-	-	
		infrastructureGroupCriteria				Filtering criteria of IG definition.	-	-	

Data nesting information					Explanation	Range	Remarks	Repeatable *1
				Condition	Conditional statement.	-	-	
				join	Join.	"and" or "or"		
				expressions	Identifier.	-	-	
				op	Operator.	Value defined at ValueList Common for all the resources: eq, ne, starts, ends	-	
				name	Name.	Value defined at ValueList IG: name RG: name Pool: poolId, name Port: name	-	
				value	Value.	-	-	
			resourceCriteria		Filtering criteria of RG definition.	-	-	

Data nesting information				Explanation	Range	Remarks	Repeatable *1
			*Same as infrastructureGroupCriteria		-	-	
			resourceCriteria	Filtering criteria of storage resources.	-	-	
			storagePortCriteria	Filtering criteria of storage port.	-	-	
			condition	Filtering criteria of port configuration.	-		
			join	Join.	"and" or "or"		
			expressions	Identifier.	-		
			op	Operator.	"eq", "ne", "starts", or "ends"		
			name	Name.	"name"		
			value	Value.	-		
			performanceCondition	Filtering criteria of port performance.	-		
			join	Join.	"and" or "or"		
			expressions	Identifier.	-		
			op	Operator.	"lt" or "gt"		

Data nesting information						Explanation	Range	Remarks	Repeatable *1
					name	Name.	"avgXferPerSec" or "avgIoPerSec"		
					value	Value.	-		
				numberCondition					
				join	Join.	"and"			
				expressions	Identifier.	-			
				op	Operator.	" "			
					name	Name.	"numberOfLuns" or "numberOfWwns"		
					value	Value.	-		
			dynamicProvisioningPoolCriteria			HDP/HDT Pool criteria.	-	-	
			*Same as infrastructureGroupCriteria			-	-	-	

**Table 95 provisioning.advancedOption.advancedOptions.value**

Data nesting information	Explanation	Range	Remarks	Repeatable *1
values	advancedOption information.	-	-	yes

Allocate volumes for a symmetric cluster server from two storage systems (edit)

Data nesting information			Explanation	Range	Remarks	Repeatable *1
	numberOfPaths		Number of paths.	1 - 65536 *Refer to "Remarks".	-	
	hostModeSettings		Host mode setting.		-	
		arrayType	Display array family (Not required to specify. Reference only).	VSP USP V HUS VM VSP G1000 VSP G1500 VSP F1500 HUS AMS VSP Fx00 models VSP Gx00 models	-	

Data nesting information			Explanation	Range	Remarks	Repeatable *1
		hostMode	Host mode.	Characters of Host mode name. *2 Refer to "Table 4-5 Values that can be specified in the hostmode parameter" in the <i>Hitachi Command Suite CLI Reference Guide</i> .	If you specified "Auto" characters of Host mode name. *2 Refer to "Table 4-5 Values that can be specified in the hostmode parameter" in the <i>Hitachi Command Suite CLI Reference Guide</i> . Otherwise, the default value will be set. The default value is defined from the OS of the host and target Storage you specified by Device Manage	

Allocate volumes for a symmetric cluster server from two storage systems (edit)

Data nesting information			Explanation	Range	Remarks	Repeatable *1
					r. If you specified a Host mode that doesn't exist, the behavior is same as the behavior if you specified "Auto".	

Data nesting information			Explanation	Range	Remarks	Repeatable *1
		hostMode Options	Host mode option setting.	Characters or numbers that correspond to Host mode options. *2 Refer to following part of <i>Hitachi Command Suite CLI Reference Guide VSP</i> and <i>USP V</i> : "Table 4-7 Values that can be specified in the hostmodeoption parameter" HUS and AMS : "Table 4-6 Values that can be specified in the hostmode2 parameter" * In <i>Hitachi Command Suite CLI Reference Guide</i> , hostmode2 is expressed in "List of host connection mode 2", this means hostmodeop	-	



Allocate volumes for a symmetric cluster server from two storage systems (edit)

Data nesting information		Explanation	Range	Remarks	Repeatable *1
				tion of HUS and AMS.	

**Table 96 provisioning.storagePairSetting.primaryStorageSettings.value**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		Primary storage system information	-	-	
	storageSystem	Storage system name	-	-	
	model	Model	-	-	
	serialNumber	Serial number	-	-	

**Table 97 provisioning.storagePairSetting.secondaryStorageSettings.value**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		Secondary storage system information	-	-	
	storageSystem	Storage system name	-	-	
	model	Model	-	-	
	serialNumber	Serial number	-	-	

**Table 98 provisioning.bootVolumeSetting.volumeSettings.restriction**

Data nesting information						Explana tion	Range	Rema rks	Repeat able *1
type						Volume Setting user restriction values information	-	-	
visibili ty							-	-	
readO nly							-	-	
itemIn stance s							-	-	yes
	type						-	-	
	prope rties						-	-	
		usage				Volume Usage information (Do not edit)	-		
			type				-		
			visibilit y				-		
			readO nly				-		
			defaul tValue				-		
		numb erOfV olume s				Thresho ld informa tion of number of volumes	-		

Data nesting information						Explanation	Range	Remarks	Repeatable *1
			type				integer		
			visibility				exec		
			option Values				-		
				method		Value type of threshold of number of volumes	specific/range		
				values		Threshold of number of volumes	If the type is "specific", specify the value list that can be specified. If the type is "range", specify the minimum value and maximum value in order.		

Data nesting information						Explana tion	Range	Rema rks	Repeat able *1
			default tValue			Default values of number of volume	If the type is "speci fic", specif y one of the values . If the type is "range ", specif y a value in the value range.		
		capaci ty				Thresho ld informa tion of volume capacity	-		
			type				capaci ty		
			visibilit y				exec		
			option Values				-		
				metho d		Value type of threshol d value of volume capacity	specifi c/ range		

Data nesting information					Explana tion	Range	Rema rks	Repeat able *1
				values		Thresho ld value of volume capacity	If the type is "speci fic", specif y the value list that can be specifi ed. If the type is "range ", specif y the minim um value and maxi mum value in order.	
			default tValue			Default values of number of volume capacity	If the type is "speci fic", specif y one of the values . If the type is "range ", specif y a value in the value range.	

Data nesting information						Explanation	Range	Remarks	Repeatable *1
		storageProfile				Storage Profile information (Do not edit.)	-		
			type				-		
			visibility				-		
			readOnly				-		
			defaultValue				-		
		ldevLabel				LDEV label information (Do not edit.)	-		
			type				-		
			visibility				-		
			defaultValue				-		
		ldevSetting				LDEV information	-		
			type				-		
			properties				-		
				fullAllocation		Fully Allocation	-		
					type		-		
					visibility		-		

Data nesting information						Explana tion	Range	Rema rks	Repeat able *1
					defa ultVa lue		-		
				primaryLdevl dStartsFrom			-		
					type		-		
					visibi lity		-		
					defa ultVa lue		-		
				secondaryLde vldStartsFrom			-		
					type		-		
					visibi lity		-		
					defa ultVa lue		-		
		lunSet ting				LUN informa tion (Do not edit.)	-		
			type				-		
			proper ties				-		
				primaryLunSt artsFrom			-		
					type		-		
					visibi lity		-		
					defaultValue		-		
				secondaryLun StartsFrom			-		

Allocate volumes for a symmetric cluster server from two storage systems (edit)

Data nesting information						Explanation	Range	Remarks	Repeatable *1
					type		-		
					visibility		-		
					defaultValue		-		

**Table 99 provisioning.dataVolumeSetting.volumeSettings.restriction**

Data nesting information						Explanation	Range	Remarks	Repeatable *1
type						Volume Setting user restriction values information	-	-	
visibility							-	-	
readOnly							-	-	
itemInstances							-	-	yes
	type						-	-	
	properties						-	-	
		usage				Volume Usage information (Do not edit.)	-		
			type				-		
			visibility				-		
			readOnly				-		



Data nesting information						Explanat ion	Range	Remar ks	Repea table *1
			default tValue				-		
		numb erOfV olume s				Threshol d informat ion of number of volumes	-		
			type				integer		
			visibilit y				exec		
			option Values				-		
				metho d		Value type of threshol d of number of volumes	specifi c/ range		

Data nesting information					Explanat ion	Range	Remar ks	Repea table *1
				values	Threshol d of number of volumes	If the type is "speci fic", specify the value list that can be specifi ed. If the type is "range ", specify the minim um value and maxim um value in order.		
			defaul tValue		Default values of number of volume	If the type is "speci fic", specify one of the values. If the type is "range ", specify a value in the value range.		

Data nesting information						Explanat ion	Range	Remar ks	Repea table *1
		capaci ty				Threshol d informat ion of volume capacity	-		
			type				capaci ty		
			visibilit y				exec		
			option Values				-		
				metho d		Value type of threshol d value of volume capacity	specifi c/ range		

Data nesting information					Explanat ion	Range	Remar ks	Repea table *1
				values	Threshol d value of volume capacity	If the type is "speci fic", specify the value list that can be specifi ed. If the type is "range ", specify the minim um value and maxim um value in order.		
			defaul tValue		Default values of number of volume capacity	If the type is "speci fic", specify one of the values. If the type is "range ", specify a value in the value range.		

Data nesting information						Explanat ion	Range	Remar ks	Repea table *1
		storag eProfil e				Storage Profile informat ion (Do not edit.)	-		
			type				-		
			visibilit y				-		
			readO nly				-		
			defaul tValue				-		
		ldevLa bel				LDEV label informat ion (Do not edit.)	-		
			type				-		
			visibilit y				-		
			defaul tValue				-		
		ldevSe tting				LDEV informat ion	-		
			type				-		
			proper ties				-		
				fullAllo cation		Fully Allocatio n	-		
					type		-		
					visib ility		-		

Allocate volumes for a symmetric cluster server from two storage systems (edit)

Data nesting information						Explanat ion	Range	Remar ks	Repea table *1
					defa ultV alue		-		
				ldevId StartsF rom		Start number of LDEVID	-		
					type		-		
					visib ility		-		
					defa ultV alue		-		
		lunSet ting				LUN informat ion (Do not edit.)	-		
			type				-		
			proper ties				-		
				lunSta rtsFro m		Start number of LUN	-		
					type		-		
					visib ility		-		
					defa ultV alue		-		

**Table 100**  
**provisioning.resourceCriteria.resourceSelectionCriteria.bootVolumeUsageSpecific.restriction**

Data nesting information													Exp	Rng	Rem	Rep*1
type													ResourceCriteria.userrestriction values information	-	-	
visibility														-	-	
readOnly														-	-	
itemInstances														-	-	yes
	type													-	-	
	properties													-	-	

Allocate volumes for a symmetric cluster server from two storage systems (edit)

Data nesting information													Exp	Rng	Rem	Rep*1
		usage											VolumeUsage information	-		
			type											-		
			visibility											-		
			default value											-		
		criteria											Filtering criteria information	-		
			type											-		
			properties											-		



Data nesting information													Exp	Rng	Rem	Rep*1
				group criteria									Filte ring crit eria of gro up defi niti on	-		
					type									-		
					prop er tie s									-		
						inf ra str uc tu re Gr ou pC rit eri a							Filt er in g crit eria of IG	-		
							type							-		
							prop er tie s							-		
								con di ti on						-		

Data nesting information											Exp	Rng	Rem	Rep*1		
									type					-		
									properties					-		
									join					-		
									type					-		
									visibility					-		
									default Value					-		
									expressions					-		
									type					-		
									instances					-		yes
									type					-		

Data nesting information													Exp	Rng	Rem	Rep*1
											pr op ert ies			-		
												op		-		
												t y p e		-		
												default Value		Value define at Value List Common for all the re source s: eq , ne , start s, ends		

Data nesting information												Exp	Rng	Rem	Rep*1
											name		-		
											type		-		
											default value		Value define at ValueListIG: name R G: name Pool: pool d, name Port: name		
											value		-		

Data nesting information													Exp	Rng	Rem	Rep*1	
													type	-			
													default Value	-			
					resourceGroupCriteria									Filtering criteria of RG			
					*Same as infrastructureGroupCriteria												
				resource Criteria													
					type												
					properties												
					storagePortCriteria									Filtering criteria of storage port			
						condition											

Allocate volumes for a symmetric cluster server from two storage systems (edit)

Data nesting information							Exp	Rng	Rem	Rep*1
						*Same as infrastructureGroupCriteria				
						performanceCondition				
						*Same as infrastructureGroupCriteria				
						dynamicProvisioningPoolCriteria		Filtering criteria of HD P/HD T Pool		
						*Same as infrastructureGroupCriteria				

**Table 101**  
**provisioning.resourceCriteria.resourceSelectionCriteria.dataVolumeUsageSpecific.**  
**restriction**

Data nesting information													Exp	Rng	Rem	Rep*1	
ty	pe													Res	-	-	
														our			
														ceC			
														rite			
														ria			
														use			
														r			
														rest			
														ri			
														cti			
														on			
														val			
														ues			
														info			
														rm			
														atio			
														n			
vi	si														-	-	
si	bil																
bil	ity																
ity																	
readO	nly														-	-	
itemInstan	ces														-	-	ye
																	s
ty	pe														-	-	
pr	o																
pe	r																
rti	e																
es																	

Data nesting information													Exp	Rng	Rem	Rep*1
		usage											VolumeUsage information	-		
			type											-		
			visibility											-		
			defaultValue											-		
		criteria											Filtering criteria information	-		
			type											-		
			properties											-		
				groupCriteria									Filtering criteria of group definition	-		



Data nesting information													Exp	Rng	Rem	Rep*1
					type									-		
					properties									-		
					infrastructureGroupCriteria								Filtering criteria of IG	-		
					type									-		
					properties									-		
						condition								-		
							type							-		
							properties							-		
								join						-		
									type					-		
									visibility					-		
									defaultValue					-		
									expressions					-		
									type					-		
									itemInstances					-		yes
									type					-		

Data nesting information												Exp	Rng	Rem	Rep*1	
											proper			-		
											ties					
												op		-		
													type	-		
													visibility	-		
													default Value	Value define at ValueList Common for all the resources: eq, ne, start, ends		

Allocate volumes for a symmetric cluster server from two storage systems (edit)

Data nesting information													Exp	Rng	Rem	Rep*1
												name		-		
												type		-		
												visibility		-		

Allocate volumes for a symmetric cluster server from two storage systems (edit)

Data nesting information													Exp	Rng	Rem	Rep*1
												default value		Value defined at ValueListIG: name R G: name Pool: pool d, name Port: name		
												value		-		
												type		-		

Allocate volumes for a symmetric cluster server from two storage systems (edit)

Data nesting information													Exp	Rng	Rem	Rep*1
													visibility	-		
													default value	-		
					resourceGroupCriteria								Filtering criteria of RG			
					*Same as infrastructureGroupCriteria											
				resource Criteria												
				type												
				properties												

Data nesting information						Exp	Rng	Rem	Rep*1
					storagePortCriteria	Filtering criteria of storage port			
					condition				
					*Same as infrastructureGroupCriteria				
					performanceCondition				
					*Same as infrastructureGroupCriteria				
					dynamicProvisioningPoolCriteria	Filtering criteria of HD P/HD T Pool			
					*Same as infrastructureGroupCriteria				

**Table 102 provisioning.storagePairSetting.primaryStorageSettings.restriction**

Data nesting information	Explanation	Range	Remarks	Repeatable*1
type		-	-	

Data nesting information				Explanation	Range	Remarks	Repeatable *1
visibility				Primary storage system restriction information	-	-	
properties					-	-	
		storageSystem		Storage system name	-	-	
			type		-	-	
			visibility		-	-	
			defaultValue		-	-	
		model		Model	-	-	
			type		-	-	
			visibility		-	-	
			defaultValue		-	-	
		serialNumber		Serial number	-	-	
			type				
			visibility		-	-	
			defaultValue		-	-	

**Table 103 provisioning.storagePairSetting.secondaryStorageSettings.restriction**

Data nesting information				Explanation	Range	Remarks	Repeatable *1
type					-	-	
visibility				Secondary storage system restriction information	-	-	
properties					-	-	

Data nesting information				Explanation	Range	Remarks	Repeatable *1
	storageSystem			Storage system name	-	-	
			type		-	-	
			visibility		-	-	
			defaultValue		-	-	
	model			Model	-	-	
			type		-	-	
			visibility		-	-	
			defaultValue		-	-	
	serialNumber			Serial number	-	-	
			type		-	-	
			visibility		-	-	
			defaultValue		-	-	

### Resource Criteria JSON example

ResourceCriteria.restriction:

```
{
  "type": "array",
  "visibility": "exec",
  "readOnly": true,
  "itemInstances": [
    {
      "type": "object",
      "properties": {
        "usage": {
          "type": "string",
          "visibility": "exec",
          "defaultValue": "boot"
        },
        "criteria": {
          "type": "object",
          "properties": {
            "groupCriteria": {
              "type": "object",
              "properties": {
                "infrastructureGroupCriteria": {
```



```

"type": "object",
"properties": {
  "condition": {
    "type": "object",
    "properties": {
      "join": {
        "type": "list",
        "visibility": "exec",
        "defaultValue": "or"
      },
      "expressions": {
        "type": "array",
        "itemInstances": [
          {
            "type": "object",
            "properties": {
              "op": {
                "type": "list",
                "defaultValue": "starts"
              },
              "name": {
                "type": "list",
                "defaultValue": "name"
              },
              "value": {
                "type": "string",
                "defaultValue": "test"
              }
            }
          }
        ]
      }
    }
  }
},
"resourceGroupCriteria": {
  "type": "object",
  "properties": {
    "condition": {
      "type": "object",
      "properties": {
        "join": {
          "type": "list",
          "visibility": "exec",
          "defaultValue": "or"
        },
        "expressions": {
          "type": "array",
          "itemInstances": [
            {
              "type": "object",
              "properties": {
                "op": {
                  "type": "list",
                  "defaultValue": "starts"
                }
              }
            }
          ]
        }
      }
    }
  }
}

```

```

    },
    "name": {
      "type": "list",
      "defaultValue": "name"
    },
    "value": {
      "type": "string",
      "defaultValue": "H"
    }
  }
}
]
}
}
}
}
}
}
},
"resourceCriteria": {
  "type": "object",
  "properties": {
    "storagePortCriteria": {
      "type": "object",
      "properties": {
        "condition": {
          "type": "object",
          "properties": {
            "join": {
              "type": "list",
              "visibility": "exec",
              "defaultValue": "or"
            },
            "expressions": {
              "type": "array",
              "itemInstances": [
                {
                  "type": "object",
                  "properties": {
                    "op": {
                      "type": "list",
                      "defaultValue": "starts"
                    },
                    "name": {
                      "type": "list",
                      "defaultValue": "name"
                    },
                    "value": {
                      "type": "string",
                      "defaultValue": "C"
                    }
                  }
                }
              ]
            }
          }
        }
      }
    }
  }
}
}

```

```

    }
  },
  "dynamicProvisioningPoolCriteria": {
    "type": "object",
    "properties": {
      "condition": {
        "type": "object",
        "properties": {
          "join": {
            "type": "list",
            "visibility": "exec",
            "defaultValue": "or"
          },
          "expressions": {
            "type": "array",
            "itemInstances": [
              {
                "type": "object",
                "properties": {
                  "op": {
                    "type": "list",
                    "defaultValue": "eq"
                  },
                  "name": {
                    "type": "list",
                    "defaultValue": "poolId"
                  },
                  "value": {
                    "type": "string",
                    "defaultValue": "0"
                  }
                }
              },
              {
                "type": "object",
                "properties": {
                  "op": {
                    "type": "list",
                    "defaultValue": "eq"
                  },
                  "name": {
                    "type": "list",
                    "defaultValue": "poolId"
                  },
                  "value": {
                    "type": "string",
                    "defaultValue": "1"
                  }
                }
              }
            ]
          }
        }
      }
    }
  }
}

```



## Allocate volumes for a symmetric cluster server from two storage systems (submit)

keyName	Explanation	Input/Output	Type	Range	Default value
provisioning.hostSetting.targetHosts.value	The target host name to allocate volume.	Input	File	See the "File type property list" section following this table.	
provisioning.bootVolumeSetting.volumeSettings.value	Dedicated volumeSetting information.	Input	File	See the "File type property list" section following this table.	The value specify in Edit window.
provisioning.dataVolumeSetting.volumeSettings.value	Shared volumeSetting information.	Input	File	See the "File type property list" section following this table.	The value specify in Edit window.
provisioning.resourceCriteria.resourceSelectionCriteria.bootVolumeUsageSpecific.value	Dedicated resourceCriteria information.	Input	File	See the "File type property list" section following this table.	The value specify in Edit window.
provisioning.resourceCriteria.resourceSelectionCriteria.dataVolumeUsageSpecific.value	Shared resourceCriteria information.	Input	File	See the "File type property list" section following this table.	The value specify in Edit window.
provisioning.storagePairSetting.primaryStorageSettings.value	Primary StorageSystem information.	Input	File	See the "File type property list" section following this table.	The value specify in Edit window.

Allocate volumes for a symmetric cluster server from two storage systems (submit)

keyName	Explanation	Input/Output	Type	Range	Default value
provisioning.storagePairSetting.secondaryStorageSettings.value	Secondary StorageSystem information.	Input	File	See the "File type property list" section following this table.	The value specify in Edit window.

### File type property list

\*1 : Repeatable items must be repeated and include all lower layer tags.

Example: "{\n \"values\": {\n \"deviceManagerName\": \"vm010253\", \n \"hosts\": [\n {\n \"name\": \"testHosts001\" \n } \n ] \n } \n }

**Table 104 provisioning.hostSetting.targetHosts.value**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		Array of host name.	-		
	infrastructureGroupName	infrastructureGroupName	-		
	deviceManagerName	Device Manager's name which manage the host.	The name specified in Device Manager connections.		
	newHosts	New host addition flag.	"true" or "false". If you specify "true", adds new host.		
	hosts	Array of host information.	-		Yes.
		name	Host name.	-	
		osType	OS type.		
		hostPorts	Array of host port.		

## Allocate volumes for a symmetric cluster server from two storage systems (task detail)

keyName	Explanation	Input/Output	Type	Range	Default value
provisioning.taskResult.lunPathConfigurationInformation	The run result information of task.	Output	File	See the "File type property list" section following this table.	
provisioning.taskResult.NumberOfLunPath	The run result information of task.	Output	String	Number of paths that allocated.	
service.errorMessage	The run result information of task.	Output	String	Summary of error message.	
provisioning.taskResultRawData.ldevs	The run result information of task.	Output	File	See the "File type property list" section following this table.	
provisioning.taskResultRawData.lunPaths	The run result information of task.	Output	File	See the "File type property list" section following this table.	

- \*In Allocate volumes for a symmetric cluster server from two storage systems, since the Allocate Step plug-in is run 6 times, properties of all above (except `service.errorMessage`) are output as 6 pairs.
- \*In Allocate volumes for a symmetric cluster server from two storage systems, the `provisioning.taskResultRawData.ldevs` and `provisioning.taskResultRawData.lunPaths` properties of internal information are not displayed in the window but is output to File by the `FileExport` plug-in.

### File type property list

- \*1 : Repeatable items must be repeated include all lower layer tags.

**Table 105 provisioning.taskResult.lunPathConfigurationInformation**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		Run result.	-	-	Yes
	usage	Volume Usage name.	-	-	
	host	Host name.	-	-	
	hostPort	Host port name.	-	-	
	lun	LUN.	-	-	
	storagePort	Port ID.	-	-	
	portType	Port type (FC or iSCSI).	-	-	
	volume	LDEV ID.	-	-	
	ldevLabel	LdevLabel.	-	-	
	dpPool	Pool ID.	-	-	
	storageSystem	Storage Array name.	-	-	
	provisionedCapacity	Create volume capacity.	-	-	
	capacity	Volume capacity when you submit.	-	-	
	hostGroup	Host Group name.	-	-	
	deviceManagerTaskName	Task Name of Device Manager.	-	-	
	deviceManagerName	Device Manager that ran the task.	-	-	



Allocate volumes for a symmetric cluster server from two storage systems (task detail)

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	virtualStorageSystemName	Virtual storage system name.	-	-	
	virtualStorageSystemType	Type of virtual storage system.	-	-	
	virtualSerialNumber	Serial number of virtual storage system.	-	-	
	virtualLdevId	Virtual LDEV ID.	-	-	

**Table 106 provisioning.taskResultRawData.ldevs**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		Volume information			
	usage	VolumeUsage			
	deviceId	Created DP/DT volume's LDEV ID			
	storageSystemType	Display Array Type of the target storage which volume has been allocated.			
	storageSystemSerialNumber	Serial Number of the target storage which volume has been allocated.			
	storageSystemSerialName	Name of target store system			

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	deviceManagerName	Device Manager name which manages the storage system that has the created volume.			yes
	displayUnit	Unit name string for displaying volume capacity size.		block/KB/MB/GB/TB	
	virtualSerialNumber	Virtual serial Number of the selected virtual storage system.			
	virtualStorageSystemName	Virtual storage system name			
	virtualDisplayArrayType	Virtual array type of storage system			
	virtualLdevId	Created virtual DP/DT volume's LDEV ID			
	poolId	Pool ID which volume has been allocated.			

**Table 107 provisioning.taskResultRawData.lunPaths**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	values	Path information raw data			
	usage	VolumeUsage			
	hostName	Host Name			

Allocate volumes for a symmetric cluster server from two storage systems (task detail)

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	hostPortName	Host port name			
	hostStorageDomainName	Host Storage Domain name			
	hostStorageDomainId	Host Storage Domain ID			
	lun	LUN Number			
	portWorldWideName	Storage Port WWN			
	targetIscsiName	iSCSI name			
	portName	Storage system's port name			
	portType	Port Type of storage system (FC or iSCSI)			
	portObjectId	Port Object ID of Storage system			
	portId	Port ID of storage system			
	ldevNumber	LDEV number			
	ldevLabel	LDEV Label			
	dpPoolId	Pool ID			
	dpPoolName	Pool name			
	storageSystemName	Storage System name			
	storageSystemModel	Model name of Storage system			yes
	family	Array Family of Storage system			
	storageSystemSerialNumber	Serial Number of storage system			
	capacity	Volume Capacity			

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	unit	Unit of volume capacity for display			
	provisionedCapacityInBlock	Created volume capacity (in number of Block)			
	pairVolumeType	Volume's pair type (P or S)			
	volLdevId	LDEV ID			
	volLuNumber	LU number			
	deviceManagerTaskName	Device Manager's task name			
	deviceManagerName	Device Manager name			
	virtualStorageSystemName	Virtual storage array name			
	virtualStorageSystemType	Display name of virtual storage array's virtual model (Array Type)			
	virtualSerialNumber	Serial Number of virtual storage array			
	virtualLdevId	Virtual LDEV ID			
	pathObjectId	Path Object ID			

## Allocate like volumes for a symmetric cluster server from two storage systems service properties

Use the following properties to modify or create values for the allocate like volumes for a symmetric cluster server from two storage systems service.



**Note:** The term "VSP Gx00 models" refers to the Virtual Storage Platform G200, G400, G600, G800 product models. The term "VSP Fx00 models" refers to the Virtual Storage Platform F400, F600, F800 product models.

## Allocate like volumes for a symmetric cluster server from two storage systems (edit)

Key Name	Explanation	Input/Output	Type	Range	Default value
allocatelikevolumes.volumeSetting.volumeSettings.restriction	Threshold information about the volume capacity and the number of volumes to create.	Input	File	See the "File type property list" section following this table.	
DirectoryPath	File export directory.	Output	String		

**Table 108 allocatelikevolumes.volumeSetting.volumeSettings.restriction**

Data nesting information				Explanation	Range	Remarks	Repeatable *1
type				-	-	-	-
visibility				-	-	-	-
readOnly				-	-	-	-
properties				-	-	-	-
	capacity			Threshold information of volume capacity	-	-	-
		type		-	-	-	-
		visibility		-	-	-	-
		optionValues		-	-	-	-

Data nesting information				Explanation	Range	Remarks	Repeatable *1
			method	Value type of threshold of number of volumes	"specific" : Multiple Values "range" : Range not specified : No Restriction.	-	-
			values	Threshold value of volume capacity	If the method is "specific", specify the value list that can be specified. If the method is "range", specify the minimum value and maximum value in order.	-	-

Allocate like volumes for a symmetric cluster server from two storage systems (edit)

Data nesting information				Explanation	Range	Remarks	Repeatable *1
		defaultValue		Default values of number of volume capacity	If the method is "specific", specify one of the values. If the method is "range", specify a value in the value range.	-	-
	numberOfVolumes			Threshold information of number of volumes.	-	-	-
		type		-	-	-	-
		visibility		-	-	-	-
		optionValues		-	-	-	-
			method	Value type of threshold value of volume capacity	"specific" : Multiple Values "range" : Range not specified : No Restriction.	-	-

Allocate like volumes for a symmetric cluster server from two storage systems (edit)

Data nesting information				Explanation	Range	Remarks	Repeatable *1
			values	Threshold of number of volumes	If the method is "specific", specify the value list that can be specified. If the method is "range", specify the minimum value and maximum value in order.	-	-



Allocate like volumes for a symmetric cluster server from two storage systems (submit)

Data nesting information			Explanation	Range	Remarks	Repeatable *1
		defaultValue	Default values of number of volume	If the method is "specific", specify one of the values. If the method is "range", specify a value in the value range.	-	-
	ldevLabel		LDEV label information	-	-	-
		visibility	-	-	-	-
		readOnly	-	-	-	-
		hidden	-	-	-	-
		defaultValue	Default values of LDEV label	-	-	-

**Allocate like volumes for a symmetric cluster server from two storage systems (submit)**

KeyName	Explanation	Input/Output	Type	Range	Default value
allocatelikevolumes.volumeSource.volumeSource.value	The Primary referenced volume information.	Input	File	See the "File type property list" section following this table.	

Allocate like volumes for a symmetric cluster server from two storage systems (submit)

KeyName	Explanation	Input/Output	Type	Range	Default value
allocatelikeyolumes.volumeSetting.volumeSettings.value	Information about the volume capacity and the number of volumes to allocate.	Input	File	See the "File type property list" section following this table.	
AP_AllocateLikeVolumesPlugin_2/allocatelikeyolumes.volumeSource.volumeSource.value	The Secondary referenced volume information.	Input	File	See the "File type property list" section following this table.	

#### File type property list

- allocatelikeyolumes.volumeSource.volumeSource.value

**Table 109 AP\_AllocateLikeVolumesPlugin\_2/  
allocatelikeyolumes.volumeSource.volumeSource.value**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		-	-	-	-
	deviceManagerName	The name of the Device Manager instance that manages the storage system of the referenced volume.	The name specified in Device Manager Connections .	-	-
	lunPath	-	-	-	-
	hostPort	Host port WWN.	00.00.00.00.00.00.00.00-FF.FF.FF.FF.FF.FF.FF.FF	-	-

Allocate like volumes for a symmetric cluster server from two storage systems (submit)

Data nesting information			Explanation	Range	Remarks	Repeatable *1
		storagePort	Storage port WWN.	00.00.00.00.00.00.00.00-FF.FF.FF.FF.FF.FF.FF.FF	-	-
		lun	LU Number(The logical unit number assigned to the volume for a host).	0 - 07FF * Also see Remarks.	Must be specified in hex. Ex. 01DC.	-

**Table 110 allocatelikeyolumes.volumeSetting.volumeSettings.value**

Data nesting information	Explanation	Range	Remarks	Repeatable *1
values	-	-	-	-

Allocate like volumes for a symmetric cluster server from two storage systems (submit)

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	capacity	The size of the allocated volumes	Volume capacity	Refer to the "capacity" raw in the "AddVirtualVolume command parameters" table in Hitachi Command Suite CLI Reference Guide. VSP G1000, VSP G1500, VSP F1500 (microcode 80-03-0X-XX/XX or later) : 48000~274877906944 KB(=256TB) VSP G1000, VSP G1500, VSP F1500 (microcode earlier than 80-03-0X-XX/XX) : 48000~64424505600 KB(=60TB) VSP Gx00 models (microcode 83-02-0X-XX/XX or later) : 48000~274877906944 KB(=256TB) VSP Gx00 models (microcode earlier than 83-02-0X-XX/XX) : 48000~64424505600 KB	-

Allocate like volumes for a symmetric cluster server from two storage systems (submit)

Data nesting information		Explanation	Range	Remarks	Repeatable *1
				VSP Fx00 models : 48000~274877906944 KB(=256TB)  VSP : 48000~64424505600 KB USP V(microcode earlier than 06-03) : 48000~3221159680 KB USP V (microcode 06-03 or later) : 48000~4294967296 KB HUS VM : 48000 ~ 64424505600 KB HUS : 32768 ~ 137438953472 KB(=128TB) AMS : 32768 ~ 6442450944 KB	
	numberOfVolumes	The number of volumes to allocate	Number of volumes	1 - 500	-
	ldevLabel	LDEV label			

## Allocate like volumes for a symmetric cluster server from two storage systems (task detail)

keyName	Explanation	Input/Output	Type	Range	Default value
allocatelikevolumes.taskResult.lunPathConfigurationInformation	Task run result information.	Output	File	See the "File type property list" section following this table.	
allocatelikevolumes.taskResult.numberOfLdev	Task run result information.	Output	String	The number of the allocated volumes.	
allocatelikevolumes.taskResult.numberOfLunPath	Task run result information.	Output	String	The number of paths.	
service.errorMessage	Task run result information.	Output	String	Summary information of error messages.	
allocatelikevolumes.taskResultRawData.ldevs	Task run result information.	Output	File	See the "File type property list" section following this table.	
allocatelikevolumes.taskResultRawData.lunPaths	Task run result information.	Output	File	See the "File type property list" section following this table.	
AP_AllocateLikeVolumesPlugin_2/allocatelikevolumes.taskResult.lunPathConfigurationInformation	Task run result information.	Output	File	See the "File type property list" section following this table.	

keyName	Explanation	Input/Output	Type	Range	Default value
AP_AllocateLikeVolumesPlugin_2/allocatelikevolumes.taskResult.numberOfLdev	Task run result information.	Output	String	The number of the allocated volumes.	
AP_AllocateLikeVolumesPlugin_2/allocatelikevolumes.taskResult.numberOfLunPath	Task run result information.	Output	String	The number of paths.	
AP_AllocateLikeVolumesPlugin_2/allocatelikevolumes.taskResultRawData.ldevs	Task run result information.	Output	File	See the "File type property list" section following this table.	
AP_AllocateLikeVolumesPlugin_2/allocatelikevolumes.taskResultRawData.lunPaths	Task run result information.	Output	File	See the "File type property list" section following this table.	
fileexport.exportFilePath	File export path.	Output	String		

**File type property list**

- allocatelikevolumes.taskResult.lunPathConfigurationInformation

**Table 111 AP\_AllocateLikeVolumesPlugin\_2/allocatelikevolumes.taskResult.lunPathConfigurationInformation**

Data nesting information	Explanation	Range	Remarks	Repeatable *1
values	LUN path Configuration information.	-	-	Yes

Allocate like volumes for a symmetric cluster server from two storage systems (task detail)

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	usage	Volume Usage name (fixed value "-" in AP).	-	-	
	host	Host name.	-	-	
	hostPort	Host Port WWN/ iSCSI Name.	-	-	
	lun	LU Number.	-	-	
	storagePort	Storage Port WWN.	-	-	
	portType	Storage Port type (FC or iSCSI).	-	-	
	volume	LDEV ID.	-	-	
	dpPool	Pool ID.	-	-	
	storageSystem	Storage System name.	-	-	
	provisionedCapacity	The size of the allocated volumes (Blocks).	-	-	
	capacity	The size of the allocated volumes that specified when submit.	-	-	
	hostGroup	Host Group name/ iSCSI Target iSCSI Name.	-	-	
	deviceManagerTaskName	Task name of Device Manager.	-	-	
	deviceManagerName	The name of Device Manager that ran the task.	-	-	
	virtualStorageSystemName	The name of the virtual storage system.	-	-	
	virtualStorageSystemType	The display array type of the virtual storage system.	-	-	



Allocate like volumes for a symmetric cluster server from two storage systems (task detail)

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	virtualSerialNumber	The serial number of the virtual storage system.	-	-	
	virtualLdevId	Virtual LDEV ID.	-	-	

**allocatelikeyolumes.taskResultRawData.ldevs**

**Table 112 AP\_AllocateLikeVolumesPlugin\_2/  
allocatelikeyolumes.taskResultRawData.ldevs**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		Volume information.	-	-	yes
	usage	Volume Usage name (fixed value "-" in AP).	-	-	
	deviceld	LDEV ID.	-	-	
	storageSystemType	The display array type of the storage system of the allocated volume.	-	-	
	storageSystemSerialNumber	The serial number of the storage system of the allocated volume.	-	-	
	storageSystemName	The name of the store system.	-	-	
	deviceManagerName	The name of Device Manager that ran the task.	-	-	
	displayUnit	Display unit for the size of the allocated volumes.	-	-	

Allocate like volumes for a symmetric cluster server from two storage systems (task detail)

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	virtualSerialNumber	The serial number of the virtual storage system.	-	-	
	virtualLdevId	Virtual LDEV ID.	-	-	
	virtualStorageSystemName	Virtual storage system name.	-	-	
	virtualDisplayArrayType	Virtual array type of storage system.	-	-	
	poolId	Pool ID.	-	-	

**allocatelikevolumes.taskResultRawData.lunPaths**

**Table 113 AP\_AllocateLikeVolumesPlugin\_2/  
allocatelikevolumes.taskResultRawData.lunPaths**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		The LUN path information.	-	-	Yes
	usage	Volume Usage name (fixed value "-" in AP).	-	-	
	hostName	Host name.	-	-	
	hostPortName	Host Port WWN/iSCSI Name.	-	-	
	hostStorageDomainName	Host storage domain name.	-	-	
	hostStorageDomainId	Host Group ID/iSCSI Target ID.	-	-	
	lun	LU Number.	-	-	
	portWorldWideName	Storage Port WWN.	-	-	
	targetIscsiName	iSCSI Target iSCSI Name.	-	-	

Allocate like volumes for a symmetric cluster server from two storage systems (task detail)

Data nesting information	Explanation	Range	Remarks	Repeatable *1	
	portName	Storage Port name.	-	-	
	portType	Storage Port type (FC or iSCSI).	-	-	
	portObjectId	Storage Port object ID.	-	-	
	portId	Storage Port ID.	-	-	
	ldevNumber	LDEV Number.	-	-	
	ldevLabel	LDEV label.	-	-	
	dpPoolId	Pool ID.	-	-	
	dpPoolName	Pool name.	-	-	
	storageSystemName	Storage System name.	-	-	
	storageSystemModel	Storage System model name.	-	-	
	family	Storage System family name.	-	-	
	storageSystemSerialNumber	Storage System serial number.	-	-	
	capacity	The size of the allocated volumes that specified when submitted.	-	-	
	unit	The unit of the allocated volumes size that specified when submitted.	-	-	
	provisionedCapacityInBlock	The size of the allocated volumes (Blocks).	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	pairVolumeType	Pair type (P or S).	-	-	
	volLdevId	LDEV ID.	-	-	
	volLuNumber	LU Number.	-	-	
	deviceManagerTaskName	Task name of Device Manager.	-	-	
	deviceManagerName	The name of Device Manager that ran the task.	-	-	
	virtualStorageSystemName	The name of the virtual storage system.	-	-	
	virtualStorageSystemType	The display array type of the virtual storage system.	-	-	
	virtualSerialNumber	The serial number of the virtual storage system.	-	-	
	virtualLdevId	Virtual LDEV ID.	-	-	
	pathObjectID	Object ID of path.	-	-	

## Create file share service properties

Use the following properties to modify or create values for the create file share service.



**Note:** The term "VSP Gx00 models" refers to the Virtual Storage Platform G200, G400, G600, G800 product models. The term "VSP Fx00 models" refers to the Virtual Storage Platform F400, F600, F800 product models.

## Create file share (edit)

keyName	Explanation	Input/Output	Type	Range	Default value
fileProvisioning.resourceCriteria.fileServer.value	Specifies information about the cluster or server for which file shares are being created.	In	File	See the "File type property list" section following this table.	
fileProvisioning.resourceCriteria.fileServer.restriction	Specifies the restriction of [Cluster/Server] that can be specified.	In	File	See the "File type property list" section following this table.	
fileProvisioning.resourceCriteria.evs.value	Specifies information about the EVS for which file shares are being created.	In	File	See the "File type property list" section following this table.	
fileProvisioning.resourceCriteria.evs.restriction	Specifies the restriction of the EVSs that can be specified.	In	File	See the "File type property list" section following this table.	
fileProvisioning.resourceCriteria.fileSystem.value	Specifies information about the file system for which file shares are to create.	In	File	See the "File type property list" section following this table.	
fileProvisioning.resourceCriteria.fileSystem.restriction	Specifies the restriction of the file systems that can be specified.	In	File	See the "File type property list" section following this table.	

keyName	Explanation	Input/Output	Type	Range	Default value
fileProvisioning.storageSetting.storagePoolTypeList	Specifies one of the following options for the storage pool type to use when creating file shares. - Tiered - Untiered.	In	List	Untiered, Tiered.	Untiered .
fileProvisioning.storageSetting.storageProfile	Specifies the storage profile of the storage pools to select when the storage pool type is "Untiered".	In	String	Valid only when [Server/Cluster] is not specified.	Gold Read.
fileProvisioning.storageSetting.storageProfileForTier0	Specifies the storage profile of the storage pools for Tier 0 to select when the storage pool type is "Tiered".	In	String	Valid only when [Server/Cluster] is not specified.	Ultimate .
fileProvisioning.storageSetting.storageProfileForTier1	Specifies the storage profile of the storage pools for Tier 1 to select when the storage pool type is "Tiered".	In	String	Valid only when [Server/Cluster] is not specified.	Gold Read.

keyName	Explanation	Input/Output	Type	Range	Default value
fileProvisioning.storageSetting.commonPartOfPath	Specifies the common part of the path where file shares are created.	In	String	[Maximum string length] Connected string of Common Part of Path and Path is maximum 255 characters. *Connected string includes the separator character [Prohibited characters] CIFS plug-in : Conform to ShareName NFS plug-in : Conform to ExportName * But the file separator (/, \) can be entered. [Format] Start from the separator. The separator character is not continuous in the status where Common Part of Path and Path are connected.	\

keyName	Explanation	Input/Output	Type	Range	Default value
fileProvisioning.storageSetting.path	Specifies the additional path when you create a shared directory in a subdirectory of the [Common Part of Path] value in the Edit window.	In	String	[Maximum string length] Connected string of Common Part of Path and Path is maximum 255 characters. *Connected string includes the separator character [Prohibited characters] CIFS plug-in : Conform to ShareName NFS plug-in : Conform to ExportName * But the file separator (/, \) can be entered. [Format] Refer to Common Part of Path.	
fileProvisioning.storageSetting.shareName	Specifies the name of the CIFS share.	In	String	Maximum: 80 characters Prohibited characters: 0x0000~ 0x001F " * / : < > ? \   0xFFFFE~ 0xFFFF	



keyName	Explanation	Input/Output	Type	Range	Default value
fileProvisioning.storageSetting.exportName	Specifies the name of the NFS export.	In	String	Maximum: 79 characters Prohibited characters: 0x0001~0x001F / \	
fileProvisioning.storageSetting.createPath	Specifies whether to create the specified path when it does not exist. - true: Create the path. - false: Do not create the path.	In	Boolean	True, false.	True.
fileProvisioning.cifsSetting.cifsEnable	Specifies whether to create CIFS shares. - true: Create CIFS shares. - false: Do not create CIFS shares.	In	Boolean	True, false.	True.
fileProvisioning.cifsSetting.comment	Stores additional information about the CIFS share.	In	String	Maximum: 255 characters.	

keyName	Explanation	Input/Output	Type	Range	Default value
fileProvisioning.cifsSetting.userLimitEnable	Specifies whether to limit the number of users who can be associated with a CIFS share. - true: Limit the number of users. - false: Do not limit the number of users.	In	Boolean	True, false.	false
fileProvisioning.cifsSetting.maxUserCount	Specifies the maximum number of users who can be associated with a CIFS share.	In	Integer	Only 0-9 can be entered (Only numerical value) Range: 0 - 2147483647	0
fileProvisioning.cifsSetting.cifsShowSnapshots	Specifies one of the following options for the setting that controls access to snapshots by CIFS shares: - Show and Allow Access - Hide and Allow Access - Hide and Disable Access.	In	List	Show and Allow Access Hide and Allow Access Hide and Disable Access.	Show and Allow Access

keyName	Explanation	Input/Output	Type	Range	Default value
fileProvisioning.cifsSetting.cacheOptions	Specifies one of the following options for the CIFS Share cache setting: - Manual local caching for documents - Automatic local caching for documents - Automatic local caching for programs - Local caching disabled.	In	List	Manual local caching for documents Automatic local caching for documents Automatic local caching for programs Local caching disabled.	Manual local caching for documents
fileProvisioning.cifsSetting.cifsTransferReplicationTarget	Specifies one of the following options for the behavior of the file system when it is recovered from a snapshot: - Enable - Disable - Use FS Default.	In	List	Enable Disable Use FS Default.	Use FS Default
fileProvisioning.cifsSetting.symbolicLinksEnable	Specifies whether to enable the use of symbolic links for CIFS shares. - true - false.	In	Boolean	True, false.	True.

keyName	Explanation	Input/Output	Type	Range	Default value
fileProvisioning.cifsSetting.globalSymbolicLinksEnable	Specifies whether to enable the use of global symbolic links via Microsoft's DFS mechanism. - true - false.	In	Boolean	True, false.	True.
fileProvisioning.cifsSetting.forceFilenameLowercaseEnable	Specifies whether to forcibly change all uppercase letters in the names of files created in CIFS shares to lowercase letters. - true - false.	In	Boolean	True, false.	false
fileProvisioning.cifsSetting.abeEnable	Specifies whether to enable ABE. - true - false.	In	Boolean	True, false.	false
fileProvisioning.cifsSetting.virusScanningEnable	Specifies whether to enable virus scans. - true - false.	In	Boolean	True, false.	false
fileProvisioning.cifsSetting.mode	Specifies one of the following modes for creating individual home directories for users: - Off - ADS - User - DomainAndUser - Unix.	In	List	Off ADS User DomainAnd User Unix.	Off.

keyName	Explanation	Input/Output	Type	Range	Default value
fileProvisioning.cifsSetting.path	Specifies the path where the individual home directories of users are created.	In	String	Maximum: 127 characters Prohibited characters: Conform to ShareName.	
fileProvisioning.cifsSetting.permissionList.value	Specifies the users who can access a CIFS share and their permissions.	In	File	See the "File type property list" section following this table.	
fileProvisioning.cifsSetting.permissionList.restriction	Lists the access permissions that can be specified.	In	File	See the "File type property list" section following this table.	
fileProvisioning.cifsSetting.cifsAccessConfigurationList	Specifies the IP addresses of clients that can access a share. See [Service Details] in the Overview pane for further information.	In	File	Maximum: 5957 characters.	
fileProvisioning.nfsSetting.nfsEnable	Specifies whether to create NFS exports. - true: Create NFS exports. - false: Do not create NFS exports.	In	Boolean	True, false.	True.
fileProvisioning.nfsSetting.nfsPathOption	Specifies whether to allow the use of nested NFS shares. - true - false.	In	Boolean	True, false.	True.

keyName	Explanation	Input/Output	Type	Range	Default value
fileProvisioning.nfsSetting.nfsShowSnapshots	Specifies one of the following options for the setting that controls the access of snapshots by NFS shares: - Show and Allow Access - Hide and Allow Access - Hide and Disable Access.	In	List	Show and Allow Access Hide and Allow Access Hide and Disable Access.	Show and Allow Access.
fileProvisioning.nfsSetting.localReadCache	Specifies one of the following options for the files or the cache control of cross-file system link in the file system corresponding to the export: - Cache all files - Cache cross-file system links - Do not cache files.	In	List	Cache all files Cache cross-file system links Do not cache files.	Do not cache files.
fileProvisioning.nfsSetting.nfsTransferReplicationTarget	Specifies one of the following options for the behavior of the file system when it is recovered from a snapshot: - Enable - Disable - Use FS Default.	In	List	Enable Disable Use FS Default.	Use FS Default.

keyName	Explanation	Input/Output	Type	Range	Default value
fileProvisioning.nfsSetting.nfsAccessConfigurationList	Specifies the IP addresses of clients that can access a share. See [Service Details] in the Overview pane for further information.	In	File	Maximum: 5957 characters.	

### Properties list required to specify in Edit service

- `fileProvisioning.storageSetting.storagePoolTypeList`
- `fileProvisioning.storageSetting.commonPartOfPath`
- `fileProvisioning.cifsSetting.cifsEnable`
- `fileProvisioning.nfsSetting.nfsEnable`

### File type property list

\*1: Repeatable items must be repeated and include all lower layer tags.

**Table 114 fileProvisioning.resourceCriteria.fileServer.value**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		FileServer information.	-	-	
	deviceManagerName	Device Manager name.	-	-	
	name	FileServer name.	-	-	
	clusterID	ClusterID.	-	-	

**Table 115 fileProvisioning.resourceCriteria.fileServer.restriction**

Data nesting information			Explanation	Range	Remarks	Repeatable *1
type			FileServer restriction information.	-	-	
hidden				-	-	
properties				-	-	
	deviceManagerName		Device Manager name restriction.	-	-	
		type		-	-	
		visibility		-	-	
		defaultvalue		-	-	
		hidden		-	-	
	name		FileServer name restriction.	-	-	
		type		-	-	
		visibility		-	-	
		defaultvalue		-	-	
		hidden		-	-	
	clusterID		ClusterID restriction.	-	-	
		type		-	-	
		visibility		-	-	
		defaultvalue		-	-	
		hidden		-	-	

**Table 116 fileProvisioning.resourceCriteria.evs.value**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		EVS information	-	-	



Data nesting information		Explanation	Range	Remarks	Repeatable *1
	deviceManagerName	Device Manager name.	-	-	
	name	EVS name.	-	-	
	clusterID	ClusterID.	-	-	
	virtualServerID	EVSID.	-	-	

**Table 117 fileProvisioning.resourceCriteria.evs.restriction**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
type		EVS restriction information.	-	-	
hidden			-	-	
properties			-	-	
	deviceManagerName	Device Manager name restriction.	-	-	
	type		-	-	
	visibility		-	-	
	defaultvalue		-	-	
	hidden		-	-	
	name	EVS name restriction.	-	-	
	type		-	-	
	visibility		-	-	
	defaultvalue		-	-	
	hidden		-	-	
	clusterID	ClusterID restriction.	-	-	
	type		-	-	
	visibility		-	-	

Data nesting information			Explanation	Range	Remarks	Repeatable *1
		defaultvalue		-	-	
		hidden		-	-	
	virtualServerID		EVSID restriction.	-	-	
		type		-	-	
		visibility		-	-	
		defaultvalue		-	-	
		hidden		-	-	

Table 118 fileProvisioning.resourceCriteria.fileSystem.value

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		FileSystem information	-	-	
	deviceManager Name	Device Manager name.	-	-	
	name	FileSystem name.	-	-	
	clusterID	ClusterID.	-	-	
	virtualServerID	EVSID.	-	-	
	virtualServerName	EVS name.	-	-	

Table 119 fileProvisioning.resourceCriteria.fileSystem.restriction

Data nesting information		Explanation	Range	Remarks	Repeatable *1
type		FileSystem restriction information.	-	-	
hidden			-	-	
properties			-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	deviceManagerName	Device Manager name restriction.	-	-	
	type		-	-	
	visibility		-	-	
	defaultvalue		-	-	
	hidden		-	-	
	name	FileSystem name restriction.	-	-	
	type		-	-	
	visibility		-	-	
	defaultvalue		-	-	
	hidden		-	-	
	clusterID	ClusterID restriction.	-	-	
	type		-	-	
	visibility		-	-	
	defaultvalue		-	-	
	hidden		-	-	
	virtualServerID	EVSID restriction.	-	-	
	type		-	-	
	visibility		-	-	
	defaultvalue		-	-	
	hidden		-	-	
	virtualsServerName	EVS name restriction.			
	type				
	visibility				
	defaultvalue				
	hidden				

**Table 120 fileProvisioning.cifsSetting.permissionList.value**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		Permission information.	-	Specifies the users who can access a CIFS share and their permissions.	Yes.
	userOrGroup	User/Group name.	-	-	
	type	Type.	Well Known Group, Unknown.	-	
	fullControl	FullControl privilege information.	ALLOW, DENY, NONE.	-	
	change	Change privilege information.	ALLOW, DENY, NONE.	-	
	read	Read privilege information.	ALLOW, DENY, NONE.	-	

**Table 121 fileProvisioning.cifsSetting.permissionList.restriction**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
type		Permission restriction information.	-		-
visibility			-		-
itemInstances			-		Yes.
	type		-		-
	properties		-		-
	userOrGroup		-		-
		type	-		-
		default Value	-		-

Data nesting information				Explanation	Range	Remarks	Repeatable *1
		type			-		-
			type		Well Known Group, Unknown.		-
			default Value		-		-
		fullControl			-		-
			type		ALLOW, DENY, NONE.		-
			default Value		-		-
		read			-		-
			type		ALLOW, DENY, NONE.		-
			default Value		-		-
		change			-		-
			type		ALLOW, DENY, NONE.		-
			default Value		-		-

## Create file share (submit)

keyName	Explanation	Input/Output	Type	Range	Default value
fileProvisioning.resourceCriteria.fileServer.value	Specifies information about the cluster or server for which file shares are being created.	In	File	See the "File type property list" section following this table.	
fileProvisioning.resourceCriteria.evs.value	Specifies information about the EVS for which file shares are being created.	In	File	See the "File type property list" section following this table.	
fileProvisioning.resourceCriteria.fileSystem.value	Specifies information about the file system for which file shares are to be created.	In	File	See the "File type property list" section following this table.	
fileProvisioning.storageSetting.storagePoolTypeList	Specifies one of the following options for the storage pool type to use when creating file shares. - Tiered - Untiered	In	List	Untiered, Tiered.	Untiered.

keyName	Explanation	Input/Output	Type	Range	Default value
fileProvisioning.storageSetting.storageProfile	Specifies the storage profile of the storage pools to select when the storage pool type is "Untiered".	In	String	Valid only when [Server/Cluster] is not specified.	Gold Read.
fileProvisioning.storageSetting.storageProfileForTier0	Specifies the storage profile of the storage pools for Tier 0 that are to be selected, when the storage pool type is "Tiered".	In	String	Valid only when [Server/Cluster] is not specified.	Ultimate.
fileProvisioning.storageSetting.storageProfileForTier1	Specifies the storage profile of the storage pools for Tier 1 that are to be selected, when the storage pool type is "Tiered".	In	String	Valid only when [Server/Cluster] is not specified.	Gold Read.

keyName	Explanation	Input/Output	Type	Range	Default value
fileProvisioning.storageSetting.commonPartOfPath	Specifies the common part of the path where file shares are to be created.	In	String	[Maximum string length] Connected string of Common Part of Path and Path is maximum 255 characters *Connected string includes the separator character [Prohibited characters] CIFS plug-in : Conform to ShareName NFS plug-in : Conform to ExportName * But the file separator (/, \) can be entered. [Format] Start from the separator. The separator character is not continuous	\



keyName	Explanation	Input/Output	Type	Range	Default value
				s in the status where Common Part of Path and Path are connected .	

keyName	Explanation	Input/Output	Type	Range	Default value
fileProvisioning.storageSetting.path	Specifies the additional path when you create a shared directory in a subdirectory of the [Common Part of Path] value in the Edit window.	In	String	[Maximum string length] Connected string of Common Part of Path and Path is maximum 255 characters. *Connected string includes the separator character [Prohibited characters] CIFS plug-in : Conform to ShareName NFS plug-in : Conform to ExportName * But the file separator (/, \) can be entered. [Format] Refer to Common Part of Path.	

keyName	Explanation	Input/Output	Type	Range	Default value
fileProvisioning.storageSetting.shareName	Specifies the name of the CIFS share.	In	String	Maximum: 80 characters Prohibited characters : 0x0000~0x001F " * / : < > ? \   0xFFFE~0xFFFF	
fileProvisioning.storageSetting.exportName	Specifies the name of the NFS export.	In	String	Maximum: 79 characters Prohibited characters : 0x0001~0x001F / \	
fileProvisioning.cifsSetting.permissionList.value	Specifies the users who can access a CIFS share and their permissions.	In	File	See the "File type property list" section following this table.	
fileProvisioning.cifsSetting.cifsAccessConfigurationList	Specifies the IP addresses of clients that can access a share. See [Service Details] in the Overview pane for further information.	In	File	Maximum: 5957 characters .	

keyName	Explanation	Input/Output	Type	Range	Default value
fileProvisioning.nfsSetting.nfsAccessConfigurationList	Specifies the IP addresses of clients that can access a share. See [Service Details] in the Overview pane for further information.	In	File	Maximum: 5957 characters	

### Properties list required to specify in Submit service

fileProvisioning.storageSetting.path

fileProvisioning.storageSetting.shareName

fileProvisioning.storageSetting.exportName

### File type property list

**Table 122 fileProvisioning.resourceCriteria.fileServer.value**

Data nesting information	Explanation	Range	Remarks	Repeatable
values	FileServer information.	-	-	-
deviceManagerName	Device Manager name.	-	-	-
Name	FileServer name.	-	-	-
clusterID	ClusterID.	-	-	-

**Table 123 fileProvisioning.resourceCriteria.evs.value**

Data nesting information	Explanation	Range	Remarks	Repeatable
values	EVS information.	-	-	-

Data nesting information		Explanation	Range	Remarks	Repeatable
	deviceManagerName	Device Manager name.	-	-	-
	Name	FileServer name.	-	-	-
	clusterID	ClusterID.	-	-	-
	virtualServerID	EVSID.	-	-	-

**Table 124 fileProvisioning.resource.fileSystem.value**

Data nesting information		Explanation	Range	Remarks	Repeatable
values		EVS information.	-	-	-
	deviceManagerName	Device Manager name.	-	-	-
	Name	FileServer name.	-	-	-
	clusterID	ClusterID.	-	-	-
	virtualServerID	EVSID.	-	-	-
	virtualServerName	EVS name.	-	-	-

**Table 125 fileProvisioning.cifsSetting.permissionList.value**

Data nesting information		Explanation	Range	Remarks	Repeatable
values		Permission information.	-	-	-
	userOrGroup	User/Group name.	-	-	-
	type	Type.	-	-	-
	fullControl	FullControl privilege information.	-	-	-
	change	Change privilege information.	-	-	-
	read	Read privilege information.			

## Create file share (task detail)

keyName	Explanation	Input/Output	Type	Range	Default value
fileProvisioning.taskResult.accessPathInformation	Stores information about the access paths of created shares.	out	File	See the "File type property list" section following this table.	-
fileProvisioning.taskResult.permissionList	Stores information about the access permissions of the created CIFS share.	out	File	See the "File type property list" section following this table.	-
fileProvisioning.taskResult.provisioningResults	Stores detailed information about created shares.	out	File	See the "File type property list" section following this table.	-

## File type property list

Table 126 fileProvisioning.taskResult.accessPathInformation

Data nesting information	Explanation	Range	Remarks	Repeatable
values	Information about the access paths of created shares.	-	-	-
cifsShare	Information about the access paths of the created CIFS shares.	-	-	-

Data nesting information		Explanation	Range	Remarks	Repeatable
	nfsExport	Information about the access paths of the created NFS shares.	-	-	-

Table 127 fileProvisioning.taskResult.permissionList

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	values	Information about the access permissions of the created CIFS share.	-	-	yes
	userOrGroup	User/Group name.	-	-	-
	type	Type.	-	-	-
	fullControl	FullControl privilege information.	-	-	-
	change	Change privilege information.	-	-	-
	read	Read privilege information.	-	-	-
*1: Repeatable items must be repeated and include all lower layer tags.					

Table 128 fileProvisioning.taskResult.provisioningResults

Data nesting information		Explanation	Range	Remarks	Repeatable
	values	Information about the access paths of created shares.	-	-	-
	serverOrCluster	FileServer name.	-	-	-
	evs	EVS name.	-	-	-
	fileSystem	FileSystem name.	-	-	-
	path	Path of created shares.	-	-	-

Data nesting information		Explanation	Range	Remarks	Repeatable
	storagePool	StoragePool name.	-	-	-
	hdvmName	Device Manager name.	-	-	-
	hdvmTaskNameCifs	Device Manager task name of creating CIFS.	-	-	-
	hdvmTaskNameNfs	Device Manager task name of creating NFS.	-	-	-

## Allocate like replicated volumes on existing copy topology service properties

Use the following properties to modify or create values for the allocate like replicated volumes on existing copy topology service.



**Note:** The term "VSP Gx00 models" refers to the Virtual Storage Platform G200, G400, G600, G800 product models. The term "VSP Fx00 models" refers to the Virtual Storage Platform F400, F600, F800 product models.

## Allocate like replicated volumes on existing copy topology (edit)

key Name	Explanation	Type	Range	Default value
allocateLikeRemoteCopy.volumeSetting.volumeSettings.value	Volume Settings (Number of volumes, Volume capacity).	File	See the "File type property list" section following this table.	-
allocateLikeRemoteCopy.topologySetting.volumeSettings.value	Volume Settings (Volume Label/ Start number of LDEV ID/Start number of LUN).	File	See the "File type property list" section following this table.	-



key Name	Explanation	Type	Range	Default value
allocateLikeRemoteCopy.topologySetting.copyPairSetting.value	Copy Pair Settings.	File	See the "File type property list" section following this table.	-
allocateLikeRemoteCopy.volumeSetting.volumeSettings.restriction	Restriction of Volume Settings (Number of volumes, Volume capacity).	File	Same as AllocateLikeVolumes (allocatelikevolumes.volumeSetting.volumeSettings.restriction).	-
allocateLikeRemoteCopy.topologySetting.volumeSettings.restriction	Restriction of Volume Settings (Volume Label/ Start number of LDEV ID/Start number of LUN).	File	See the "File type property list" section following this table.	-
allocateLikeRemoteCopy.topologySetting.copyPairSetting.restriction	Restriction of Copy Pair Settings.	File	See the "File type property list" section following this table.	-

**File type property list**

**Table 129 allocateLikeRemoteCopy.volumeSetting.volumeSettings.value**

Data nesting information	Explanation	Range	Remarks	Repeatable
values		-	-	-

Data nesting information		Explanation	Range	Remarks	Repeatable
	capacity	Volume capacity	<p>Refer to the "capacity" row of "Table 4-20 AddVirtualVolume command parameters" in Hitachi Command Suite CLI Reference Guide.</p> <p>VSP G1000, VSP G1500, VSP F1500 (microcode 80-03-0X-XX/XX or later) : 48000 ~ 274877906944 KB(=256TB)</p> <p>VSP G1000, VSP G1500, VSP F1500 (microcode earlier than 80-03-0X-XX/XX) : 48000~ 64424505600 KB(=60TB)</p> <p>VSP Gx00 models (microcode 83-02-0X-XX/XX or later) : 48000 ~ 274877906944 KB(=256TB)</p> <p>VSP Gx00 models (microcode earlier than 83-02-0X-XX/</p>	-	-

Data nesting information		Explanation	Range	Remarks	Repeatable
			XX) : 48000~ 64424505600 KB(=60TB)  VSP Fx00 models : 48000~ 274877906944 KB(=256TB)  VSP : 48000~ 64424505600 KB  USP_V(microcode de earlier than 06-03) : 48000~ 3221159680 KB  USP V (microcode 06-03 or later) : 48000 ~4294967296 KB  HUS VM : 48000 ~ 64424505600 KB  HUS : 32768 ~ 137438953472 KB(=128TB)  AMS : 32768 ~ 6442450944 KB		
	numberOfVolumes	Number of volumes	1-500	-	-

**Table 130 allocateLikeRemoteCopy.topologySetting.volumeSettings.value**

Data nesting information	Explanation	Range	Remarks	Repeatable
values	-	-	-	-

Data nesting information		Explanation	Range	Remarks	Repeatable
	primaryVolume	Primary Site/ Primary Volume			
	ldevLabel	Volume Label			
	ldevIdStartsFrom	Start number of LDEV ID			
	lunStartsFrom	Start number of LUN			
	primarySIVolume	'Primary Site/ Primary SI Volume			
	ldevLabel	Volume Label			
	ldevIdStartsFrom	Start number of LDEV ID			
	lunStartsFrom	Start number of LUN			
	primaryTIVolume	Primary Site/ Primary TI Volume			
	ldevLabel	Volume Label			
	ldevIdStartsFrom	Start number of LDEV ID			
	lunStartsFrom	Start number of LUN			
	secondaryVolume	Secondary Site/ Secondary SI Volume			
	ldevLabel	Volume Label			
	ldevIdStartsFrom	Start number of LDEV ID			
	lunStartsFrom	Start number of LUN			
	secondarySIVolume	Secondary Site/ Secondary SI Volume			
	ldevLabel	Volume Label			

Data nesting information			Explanation	Range	Remarks	Repeatable
		ldevIdStartsFrom	Start number of LDEV ID			
		lunStartsFrom	Start number of LUN			
	secondaryTIVolume		Secondary Site/ Secondary TI Volume			
		ldevLabel	Volume Label			
		ldevIdStartsFrom	Start number of LDEV ID			
		lunStartsFrom	Start number of LUN			
	tertiaryVolumeVolume		Tertiary Site/ Tertiary Volume			
		ldevLabel	Volume Label			
		ldevIdStartsFrom	Start number of LDEV ID			
		lunStartsFrom	Start number of LUN			
	tertiaryVolumeSI Volume					
		ldevLabel	Volume Label			
		ldevIdStartsFrom	Start number of LDEV ID			
		lunStartsFrom	Start number of LUN			
	tertiaryVolumeTI Volume					
		ldevLabel	Volume Label			
		ldevIdStartsFrom	Start number of LDEV ID			
		lunStartsFrom	Start number of LUN			

**Table 131 allocateLikeRemoteCopy.topologySetting.copyPairSetting.value**

Data nesting information		Explanation	Range	Remarks	Repeatable
values		-	-	-	-
	primarySecondaryRemote	Primary-Secondary Remote Copy Pair Setting		-	-
	copyGroupId	Copy Group ID		-	-
	copyGroupName	Copy Group name		-	-
	copyGroupType	Copy Type	"TCS" or "UR" or "GAD"		
	noCopy	No Copy option	"true" or "false"	-	-
	copyPace	Copy Pace	1~15	-	-
	primaryTertiaryRemote	Primary-Tertiary Remote Copy Pair Setting		-	-
	copyGroupId	Copy Group ID		-	-
	copyGroupName	Copy Group name		-	-
	copyGroupType	Copy Type	"UR"		
	noCopy	No Copy option	"true" or "false"	-	-
	secondaryTertiaryRemote	Secondary-Tertiary Remote Copy Pair Setting		-	-
	copyGroupId	Copy Group ID		-	-
	copyGroupName	Copy Group name		-	-
	copyGroupType	Copy Type	"UR"		
	primaryTI	Primary Site : TI Copy Pair Setting		-	-
	copyGroupId	Copy Group ID		-	-

Data nesting information			Explanation	Range	Remarks	Repeatable
		copyGroupName	Copy Group name		-	-
		copyGroupType	Copy Type	"TI"		
	primarySI		Primary Site : SI Copy Pair Setting		-	-
		copyGroupId	Copy Group ID		-	-
		copyGroupName	Copy Group name		-	-
		copyGroupType	Copy Type	"SI"		
		split	Split option	"None", "Steady Split" or "Quick Split"	-	-
		copyPace	Copy Pace	1~15	-	-
	secondaryTI		Secondary Site : TI Copy Pair Setting		-	-
		*Same as primaryTI			-	-
	secondarySI		Secondary Site : SI Copy Pair Setting		-	-
		*Same as primarySI			-	-
	tertiaryTI		Tertiary Site : TI Copy Pair Setting		-	-
		*Same as primaryTI			-	-
	tertiarySI		Tertiary Site : SI Copy Pair Setting		-	-
		*Same as primarySI			-	-

**Table 132 allocateLikeRemoteCopy.topologySetting.volumeSettings.restriction**

Data nesting information					Explanat ion	Range	Remar ks	Repea table
type						-	-	-
properties						-	-	-
	primaryVo lume				Primary Site/ Primary Volume	-	-	-
		type			-	-	-	-
		visibili ty			-	-	-	-
		prope rties			-	-	-	-
			ldevLa bel		LDEV label	-	-	-
				type	-	-	-	-
				visibili ty	-	-	-	-
				default Value	Default values of LDEV label	-	-	-
			ldevId Starts From		LDEV ID Starts From	-	-	-
				type	-	-	-	-
				visibili ty	-	-	-	-
				readO nly				
				hidde n				
				default Value	Default values of LDEV ID Starts From	-	-	-



Data nesting information				Explanat ion	Range	Remar ks	Repea table
			lunSta rtsFro m	LUN Starts From	-	-	-
			type	-	-	-	-
			visibili ty	-	-	-	-
			readO nly				
			hidde n				
			defaul tValue	Default values of LUN Starts From	-	-	-
	primarySI Volume			Primary Site/ Primary SI Volume	-	-	
		*Same as primaryVolum e			-	-	
	primaryTIVolume			Primary Site/ Primary TI Volume	-	-	
		*Same as primaryVolum e			-	-	
	secondaryVolume			Seconda ry Site/ Seconda ry Volume	-	-	
		*Same as primaryVolum e			-	-	

Data nesting information				Explanat ion	Range	Remar ks	Repea table
	secondarySIVolum e			Seconda ry Site/ Seconda ry SI Volume	-	-	
		*Same as primaryVolum e			-	-	
	secondaryTIVolum e			Seconda ry Site/ Seconda ry TI Volume	-	-	
		*Same as primaryVolum e			-	-	
	tertiaryVolume			Tertiary Site/ Tertiary Volume			
		*Same as primaryVolum e					
	secondarySIVolume			Tertiary Site/ Tertiary SI Volume			
		*Same as primaryVolum e					
	secondaryTIVolume			Tertiary Site/ Tertiary TI Volume			
		*Same as primaryVolum e					

**Table 133 allocateLikeRemoteCopy.topologySetting.copyPairSettings.restriction**

Data nesting information						Explanation	Range	Remarks	Repeatable
type									
properties									
	primarySecondaryRemote					Primary-Secondary Remote Copy Pair Setting			
		type				-		-	-
		visibility				-		-	-
		itemInstances				-			
			type			-		-	-
			visibility			-		-	-
			properties			-		-	-
				copyGroupId		-		-	-
					type	-		-	-
					visibility	-			
					readOnly	-			
					defaultValue	Default values of Copy Group Id			

Data nesting information					Explanation	Range	Remarks	Repeatable
				copyGroupName	-			
					type	-		
					visibility	-		
					defaultValue	Default values of Copy Group Name		
				copyGroupType				
					type			
					visibility			
					defaultValue	Default values of Copy Group Type		
				noCopy	-			
					type	-		
					visibility	-		
					readOnly			
					hidden			

Data nesting information						Explanation	Range	Remarks	Repeatable
					defaultValue	Default values of No Copy option			
				copyPace		-			
					type	-			
					visibility	-			
					valueList	-			
					readOnly				
					hidden				
					defaultValue	Default values of Copy Pace			
	primaryTertiaryRemote					Primary-Tertiary Remote Copy Pair Setting			
		type				-		-	-
		itemInstances				-			
			type			-		-	-
			properties			-		-	-

Data nesting information						Explanation	Range	Remarks	Repeatable
				copyGroupId		-		-	-
					type	-		-	-
					visibility	-			
					readOnly	-			
					defaultValue	Default values of Copy Group Id			
				copyGroupName		-			
					type	-			
					visibility	-			
					readOnly	-			
					defaultValue	Default values of Copy Group Name			
				CopyGroupType		-			
					type	-			
					visibility	-			

Data nesting information						Explanation	Range	Remarks	Repeatable
					defaultValue	Default values of Copy Group Type			
				split		-			
					type	-			
					visibility	-			
					valueList	-			
					readOnly				
					hidden				
					defaultValue	Default values of split option			
				copyPace		-			
					type	-			
					visibility	-			
					valueList	-			
					readOnly				
					hidden				

Data nesting information						Explanation	Range	Remarks	Repeatable
					defaultValue	Default values of Copy Pace			
	secondaryTI					Secondary Site : TI Copy Pair Setting			
		*Same as primary TI				-			
	secondarySI					Secondary Site : SI Copy Pair Setting			
		*Same as primary SI				-			
	tertiaryTI					Tertiary Site : TI Copy Pair Setting			
		*Same as primary TI				-			



Data nesting information						Explanation	Range	Remarks	Repeatable
	tertiarySI					Tertiary Site : SI Copy Pair Setting			
		*Same as primary SI				-			

### Allocate like replicated volumes on existing copy topology (submit)

key Name	Explanation	Type	Default value
allocateLikeRemoteCopy.volumeSource.volumeSource.value	Referenced P-VOL information.	file	See the "File type property list" section following this table.
allocateLikeRemoteCopy.volumeSetting.volumeSettings.value	Volume Settings (Number of volumes, Volume capacity).	file	Same as Edit property.
allocateLikeRemoteCopy.topologySetting.volumeSettings.value	Volume Settings (Number of volumes, Volume capacity).	file	Same as Edit property.
allocateLikeRemoteCopy.topologySetting.copyPairSetting.value	Copy Pair Settings.	file	Same as Edit property.

#### File type property list

**Table 134 allocateLikeRemoteCopy.volumeSource.volumeSource.value**

Data nesting information	Explanation	Range	Remarks	Repeatable
values	-	-	-	-

Allocate like replicated volumes on existing copy topology (submit)

Data nesting information		Explanation	Range	Remarks	Repeatable
	deviceManagerName	The name of the Device Manager instance that manages the storage system of the referenced volume.  *The name specified in Device Manager Connections	-	-	-
	lunPath		-	-	Yes
	hostPort	Host port WWN  Example) 00.00.00.00. 00.00.00.BB	-	-	-
	storagePort	Storage port WWN  Example) 50.06.0E. 80.06.CF.2E. 24	-	-	-
	lun	LU Number (The logical unit number assigned to the volume for a host)	-	-	-

**Allocate like replicated volumes on existing copy topology (task details)**

keyName	Explanation	Input/Output	Type	Range
allocateLikeRemoteCopy.taskResult.primarySecondaryRemote.copyGroupInformation	Primary-Secondary Copy Group Configuration Information	Output	File	Same as allocateLikeRemoteCopy.taskResult.primarySI.copyGroupInformation.
allocateLikeRemoteCopy.taskResult.primary.lunPathConfigurationInformation	Primary Site/Primary Volume LUN Path Configuration Information	Output	File	See the "File type property list" section following this table.
allocateLikeRemoteCopy.taskResult.primary.numberOfLdev	Primary Site/Number of Volumes for Primary Volumes	Output	String	The number of the allocated volumes.
allocateLikeRemoteCopy.taskResult.primary.numberOfLunPath	Primary Site/Number of LUN Paths for Primary Volumes	Output	String	The number of paths.
allocateLikeRemoteCopy.taskResult.primarySI.copyGroupInformation	Primary Site/Primary SI Copy Group Configuration Information	Output	File	See the "File type property list" section following this table.
allocateLikeRemoteCopy.taskResult.primarySI.lunPathConfigurationInformation	Primary Site/Primary SI Volume LUN Path Configuration Information	Output	File	Same as allocateLikeRemoteCopy.taskResult.primary.lunPathConfigurationInformation.
allocateLikeRemoteCopy.taskResult.primarySI.numberOfLdev	Primary Site/Number of Volumes for Primary SI Volumes	Output	String	The number of the allocated volumes.

keyName	Explanation	Input/Output	Type	Range
allocateLikeRemoteCopy.taskResult.primarySI.numberofLunPath	Primary Site/ Number of LUN Paths for Primary SI Volumes	Output	String	The number of paths.
allocateLikeRemoteCopy.taskResult.primaryTI.copyGroupInformation	Primary Site/ primary TI Copy Group Configuration Information	Output	File	Same as allocateLikeRemoteCopy.taskResult.primarySI.copyGroupInformation.
allocateLikeRemoteCopy.taskResult.primaryTI.lunPathConfigurationInformation	Primary Site/ Primary TI Volume LUN Path Configuration Information	Output	File	Same as allocateLikeRemoteCopy.taskResult.primaryTI.lunPathConfigurationInformation.
allocateLikeRemoteCopy.taskResult.primaryTI.numberofLdev	Primary Site/ Number of Volumes for Primary TI Volumes	Output	String	The number of the allocated volumes.
allocateLikeRemoteCopy.taskResult.primaryTI.numberofLunPath	Primary Site/ Number of LUN Paths for Primary TI Volumes	Output	String	The number of paths.
allocateLikeRemoteCopy.taskResult.primaryTertiaryRemote.copyGroupInformation	Primary-Tertiary Copy Group Configuration Information	Output	File	Same as allocateLikeRemoteCopy.taskResult.primarySI.copyGroupInformation.
allocateLikeRemoteCopy.taskResult.secondary.lunPathConfigurationInformation	Secondary Site/Primary Volume LUN Path Configuration Information	Output	File	Same as allocateLikeRemoteCopy.taskResult.primaryTI.lunPathConfigurationInformation.

keyName	Explanation	Input/Output	Type	Range
allocateLikeRemoteCopy.taskResult.secondary.numberofLdev	Secondary Site/Number of Volumes for Secondary Volumes	Output	String	The number of the allocated volumes.
allocateLikeRemoteCopy.taskResult.secondary.numberofLunPath	Secondary Site/Number of LUN Paths for Secondary Volumes	Output	String	The number of paths.
allocateLikeRemoteCopy.taskResult.secondary.SI.copyGroupInformation	Secondary Site/ Secondary SI Copy Group Configuration Information	Output	File	Same as allocateLikeRemoteCopy.taskResult.primarySI.copyGroupInformation.
allocateLikeRemoteCopy.taskResult.secondary.SI.lunPathConfigurationInformation	Secondary Site/ Secondary SI Volume LUN Path Configuration Information	Output	File	Same as allocateLikeRemoteCopy.taskResult.primary.lunPathConfigurationInformation.
allocateLikeRemoteCopy.taskResult.secondary.SI.numberofLdev	Secondary Site/Number of Volumes for Secondary SI Volumes	Output	String	The number of the allocated volumes.
allocateLikeRemoteCopy.taskResult.secondary.SI.numberofLunPath	Secondary Site/Number of LUN Paths for Secondary SI Volumes	Output	String	The number of paths.
allocateLikeRemoteCopy.taskResult.secondary.TI.copyGroupInformation	Secondary Site/ Secondary TI Copy Group Configuration Information	Output	File	Same as allocateLikeRemoteCopy.taskResult.primarySI.copyGroupInformation.

keyName	Explanation	Input/Output	Type	Range
allocateLikeRemoteCopy.taskResult.secondaryTI.lunPathConfigurationInformation	Secondary Site/ Secondary TI Volume LUN Path Configuration Information	Output	File	Same as allocateLikeRemote Copy.taskResult.pri mary.lunPathConfig urationInformation.
allocateLikeRemoteCopy.taskResult.secondaryTI.numberOfLdev	Secondary Site/Number of Volumes for Secondary TI Volumes	Output	String	The number of the allocated volumes.
allocateLikeRemoteCopy.taskResult.secondaryTI.numberOfLunPath	Secondary Site/Number of LUN Paths for Secondary TI Volumes	Output	String	The number of paths.
allocateLikeRemoteCopy.taskResult.secondaryTertiaryRemote.copyGroupInformation	Secondary- Tertiary Copy Group Configuration Information	Output	File	Same as allocateLikeRemote Copy.taskResult.pri marySI.copyGroupI nformation.
allocateLikeRemoteCopy.taskResult.tertiary.lunPathConfigurationInformation	Tertiary Site/ Tertiary Volume LUN Path Configuration Information	Output	File	Same as allocateLikeRemote Copy.taskResult.pri mary.lunPathConfig urationInformation.
allocateLikeRemoteCopy.taskResult.tertiary.numberOfLdev	Tertiary Site/ Number of Volumes for Tertiary Volumes	Output	String	The number of the allocated volumes.
allocateLikeRemoteCopy.taskResult.tertiary.numberOfLunPath	Tertiary Site/ Number of LUN Paths for Tertiary Volumes	Output	String	The number of paths.

keyName	Explanation	Input/Output	Type	Range
allocateLikeRemoteCopy.taskResult.tertiarySI.copyGroupInformation	Tertiary Site/ Tertiary SI Copy Group Configuration Information	Output	File	Same as allocateLikeRemote Copy.taskResult.pri marySI.copyGroupI nformation.
allocateLikeRemoteCopy.taskResult.tertiarySI.lunPathConfigurationInformation	Tertiary Site/ Tertiary SI Volume LUN Path Configuration Information	Output	File	Same as allocateLikeRemote Copy.taskResult.pri mary.lunPathConfig urationInformation.
allocateLikeRemoteCopy.taskResult.tertiarySI.numberOfLdev	Tertiary Site/ Number of Volumes for Tertiary SI Volumes	Output	String	The number of the allocated volumes.
allocateLikeRemoteCopy.taskResult.tertiarySI.numberOfLunPath	Tertiary Site/ Number of LUN Paths for Tertiary SI Volumes	Output	String	The number of paths.
allocateLikeRemoteCopy.taskResult.tertiaryTI.copyGroupInformation	Tertiary Site/ Tertiary TI Copy Group Configuration Information	Output	File	Same as allocateLikeRemote Copy.taskResult.pri marySI.copyGroupI nformation.
allocateLikeRemoteCopy.taskResult.tertiaryTI.lunPathConfigurationInformation	Tertiary Site/ Tertiary TI Volume LUN Path Configuration Information	Output	File	Same as allocateLikeRemote Copy.taskResult.pri mary.lunPathConfig urationInformation.
allocateLikeRemoteCopy.taskResult.tertiaryTI.numberOfLdev	Tertiary Site/ Number of Volumes for Tertiary TI Volumes	Output	String	The number of the allocated volumes.

keyName	Explanation	Input/Output	Type	Range
allocateLikeRemoteCopy.taskResult.tertiaryTl.numberOfLunPath	Tertiary Site/ Number of LUN Paths for Tertiary TI Volumes	Output	String	The number of paths.
service.errorMessage	Error message	Output	String	Summary information of error messages.

**Table 135**  
**allocateLikeRemoteCopy.taskResult.primary.lunPathConfigurationInformation**

Data nesting information	Explanation	Range	Remarks	Repeatable
values	LUN path Configuration information.	-	-	Yes
usage	Volume Usage name (fixed value "-" in AP).	-	-	-
host	Host name.	-	-	-
hostPort	Host Port WWN/iSCSI Name.	-	-	-
lun	LU Number.	-	-	-
storagePort	Storage Port WWN.	-	-	-
portType	Storage Port type (FC or iSCSI).	-	-	-
volume	LDEV ID.	-	-	-
dpPool	Pool ID.	-	-	-
storageSystem	Storage System name.	-	-	-
provisionedCapacity	The size of the allocated volumes (Blocks).	-	-	-
capacity	The size of the allocated volumes that specified when submit.	-	-	-
hostGroup	Host Group name/ iSCSI Target iSCSI Name.	-	-	-



Data nesting information		Explanation	Range	Remarks	Repeatable
	deviceManagerTaskName	Task name of Device Manager.	-	-	-
	deviceManagerName	The name of Device Manager that ran the task.	-	-	-
	virtualStorageSystemName	The name of the virtual storage system.	-	-	-
	virtualStorageSystemType	The display array type of the virtual storage system.	-	-	-
	virtualSerialNumber	The serial number of the virtual storage system.	-	-	-
	virtualLdevId	Virtual LDEV ID.	-	-	-
	resourceGroupName	Resource Group Name.	-	-	-
	infrastructureGroupName	Infrastructure Group Name.	-	-	-
	copyGroupId	Copy Group ID.	-	-	-
	copyGroupName	Copy Group Name.	-	-	-

**Table 136 allocateLikeRemoteCopy.taskResult.primarySI.copyGroupInformation**

Data nesting information		Explanation	Range	Remarks	Repeatable
values			-	-	yes
	copyGroupId	Copy Group ID	-	-	-
	copyGroupName	Copy Group Name	-	-	-
	copyType	Copy Type	-	-	-
	ctgId	CTG ID	-	-	-
	muNumber	MU Number	-	-	-

Data nesting information		Explanation	Range	Remarks	Repeatable	
	copyPairs		Copy Pair Information	-	-	yes
		copyPairName	Copy Pair Name	-	-	-
		copyPace	Copy Pace	-	-	-
		fenceLevel	Fence Level	-	-	-
		primaryHostName	Host name (P-VOL)	-	-	-
		secondaryHostName	Host name (S-VOL)	-	-	-
		primaryLdevId	LDEV ID (P-VOL)	-	-	-
		secondaryLdevId	LDEV ID (S-VOL)	-	-	-
		primaryStorageSystemName	Storage System name (P-VOL)	-	-	-
		secondaryStorageSystemName	Storage System name (S-VOL)	-	-	-
		primaryStorageSystemModel	Storage System model (P-VOL)	-	-	-
		secondaryStorageSystemModel	Storage System model (S-VOL)	-	-	-
		primaryStorageSystemSerialNumber	Storage System serial number (P-VOL)	-	-	-
		secondaryStorageSystemSerialNumber	Storage System serial number (S-VOL)	-	-	-

Data nesting information			Explanation	Range	Remarks	Repeatable
		primaryVirtualStorageMachineName	Virtual Storage System name (P-VOL)	-	-	-
		secondaryVirtualStorageMachineName	Virtual Storage System name (S-VOL)	-	-	-
		primaryVirtualStorageMachineModel	Virtual Storage System model (P-VOL)	-	-	-
		secondaryVirtualStorageMachineModel	Virtual Storage System model (S-VOL)	-	-	-
		primaryVirtualStorageMachineSerialNumber	Virtual Storage System serial number (P-VOL)	-	-	-
		secondaryVirtualStorageMachineSerialNumber	Virtual Storage System serial number (S-VOL)	-	-	-
		primaryDeviceManagerName	Device Manager name (P-VOL)	-	-	-
		secondaryDeviceManagerName	Device Manager name (S-VOL)	-	-	-
	sites		Site Information	-	-	yes
		role	Site	-	-	-
		pairManagementServerName	Pair Management Server Name	-	-	-
		instanceNumber	Instance Number	-	-	-

Data nesting information			Explanation	Range	Remarks	Repeatable
		storageSystemName	Storage System name	-	-	-
		storageSystemModel	Storage System model	-	-	-
		storageSystemSerialNumber	Storage System serial number	-	-	-
		journalGroup	Journal Group	-	-	-
		pathGroup	Path Group	-	-	-
		deviceManagerName	Device Manager name	-	-	-

## Allocate replicated volumes on existing copy topology service properties

Use the following properties to modify or create values for the allocate replicated volumes on existing copy topology service.



**Note:** The term "VSP Gx00 models" refers to the Virtual Storage Platform G200, G400, G600, G800 product models. The term "VSP Fx00 models" refers to the Virtual Storage Platform F400, F600, F800 product models.

## Allocate replicated volumes on existing copy topology (edit)

key Name	Explanation	Type	Range
provRemoteCopy.topologySetting.primary.volumeSettings.value	Primary Volume Settings	File	Same as Allocate replicated volumes on new copy topology (Edit).

key Name	Explanation	Type	Range
provRemoteCopy.topologySetting.primarySI.volumeSettings.value	Primary SI Volume Settings	File	Same as Allocate replicated volumes on new copy topology (Edit).
provRemoteCopy.topologySetting.primaryTI.volumeSettings.value	Primary TI Volume Settings	File	Same as Allocate replicated volumes on new copy topology (Edit).
provRemoteCopy.topologySetting.secondary.volumeSettings.value	Secondary Volume Settings	File	Same as Allocate replicated volumes on new copy topology (Edit).
provRemoteCopy.topologySetting.secondarySI.volumeSettings.value	Secondary SI Volume Settings	File	Same as Allocate replicated volumes on new copy topology (Edit).
provRemoteCopy.topologySetting.secondaryTI.volumeSettings.value	Secondary TI Volume Settings	File	Same as Allocate replicated volumes on new copy topology (Edit).
provRemoteCopy.topologySetting.tertiary.volumeSettings.value	Tertiary Volume Settings	File	Same as Allocate replicated volumes on new copy topology (Edit).

key Name	Explanation	Type	Range
provRemoteCopy.topologySetting.tertiarySI.volumeSettings.value	Tertiary SI Volume Settings	File	Same as Allocate replicated volumes on new copy topology (Edit).
provRemoteCopy.topologySetting.tertiaryTI.volumeSettings.value	Tertiary TI Volume Settings	File	Same as Allocate replicated volumes on new copy topology (Edit).
provRemoteCopy.topologySetting.copyPairSettings.value	Copy Pair Settings	File	See the File property list that follows this table.
provRemoteCopy.topologySetting.primary.volumeSettings.restriction	Restriction of Primary Volume Settings	File	Same as Allocate replicated volumes on new copy topology (Edit).
provRemoteCopy.topologySetting.primarySI.restriction	Restriction of Primary Volume SI Settings	File	Same as Allocate replicated volumes on new copy topology (Edit).
provRemoteCopy.topologySetting.primaryTI.volumeSettings.restriction	Restriction of Primary Volume TI Settings	File	Same as Allocate replicated volumes on new copy topology (Edit).

key Name	Explanation	Type	Range
provRemoteCopy.topologySetting.secondary.volumeSettings.restriction	Restriction of Secondary Volume Settings	File	Same as Allocate replicated volumes on new copy topology (Edit).
provRemoteCopy.topologySetting.secondarySI.volumeSettings.restriction	Restriction of Secondary SI Volume Settings	File	Same as Allocate replicated volumes on new copy topology (Edit).
provRemoteCopy.topologySetting.secondaryTI.volumeSettings.restriction	Restriction of Secondary TI Volume Settings	File	Same as Allocate replicated volumes on new copy topology (Edit).
provRemoteCopy.topologySetting.tertiary.volumeSettings.restriction	Restriction of Tertiary Volume Settings	File	Same as Allocate replicated volumes on new copy topology (Edit).
provRemoteCopy.topologySetting.tertiarySI.volumeSettings.restriction	Restriction of Tertiary SI Volume Settings	File	Same as Allocate replicated volumes on new copy topology (Edit).
provRemoteCopy.topologySetting.tertiaryTI.volumeSettings.restriction	Restriction of Tertiary TI Volume Settings	File	Same as Allocate replicated volumes on new copy topology (Edit).

key Name	Explanation	Type	Range
provRemoteCopy.topologySetting.copyPairSettings.restriction	Restriction of Copy Pair Settings	File	See the File property list that follows this table.

**File type property list**

**Table 137 provRemoteCopy.topologySetting.copyPairSettings.value**

Data nesting information		Explanation	Range	Remarks	Repeatable
values				-	-
	primarySecondaryRemote	Primary-Secondary Remote Copy Pair Setting		-	-
	copyGroupId	Copy Group ID		-	-
	copyGroupName	Copy Group name		-	-
	copyGroupType	Copy Type	"TCS" or "UR" or "GAD"		
	noCopy	No Copy option	"true" or "false"	-	-
	copyPace	Copy Pace	1~15	-	-
	fenceLevelTCS	Fence Level for TCS	"never", "status" or "data"		
	fenceLevelUR	Fence Level for UR	"async"		
	fenceLevelGAD	Fence Level for GAD	"never"		
	primaryTertiaryRemote	Primary-Tertiary Remote Copy Pair Setting		-	-
	copyGroupId	Copy Group ID		-	-
	copyGroupName	Copy Group name		-	-



Data nesting information			Explanation	Range	Remarks	Repeatable
		copyGroupType	Copy Type	"UR"		
		noCopy	No Copy option	"true" or "false"	-	-
		fenceLevelUR	Fence Level for UR	"async"		
	secondaryTertiaryRemote		Secondary-Tertiary Remote Copy Pair Setting		-	-
		copyGroupId	Copy Group ID		-	-
		copyGroupName	Copy Group name		-	-
		copyGroupType	Copy Type	"UR"		
		fenceLevelUR	Fence Level for UR	"async"		
	primaryTI		Primary Site : TI Copy Pair Setting		-	-
		copyGroupId	Copy Group ID		-	-
		copyGroupName	Copy Group name		-	-
	primarySI		Primary Site : SI Copy Pair Setting		-	-
		copyGroupId	Copy Group ID		-	-
		copyGroupName	Copy Group name		-	-
		split	Split option	"None", "Steady Split" or "Quick Split"	-	-
		copyPace	Copy Pace	1~15	-	-
	secondaryTI		Secondary Site : TI Copy Pair Setting		-	-
		*Same as primaryTI			-	-

Data nesting information		Explanation	Range	Remarks	Repeatable
	secondarySI	Secondary Site : SI Copy Pair Setting		-	-
	*Same as primarySI			-	-
	tertiaryTI	Tertiary Site : TI Copy Pair Setting		-	-
	*Same as primaryTI			-	-
	tertiarySI	Tertiary Site : SI Copy Pair Setting		-	-
	*Same as primarySI			-	-

**Table 138 provRemoteCopy.topologySetting.copyPairSettings.restriction**

Data nesting information		Explanation	Range	Remarks	Repeatable
type				-	-
properties				-	-
primarySecondaryRemote		Primary-Secondary Remote Copy Pair Setting		-	-
	type			-	-
	visibility			-	-
	itemInstances				
	type			-	-
	visibility			-	-

Data nesting information					Explanation	Range	Remarks	Repeatable
			properties				-	-
				copyGroupId	-		-	-
				type	-		-	-
				visibility	-			
				defaultValue	Default values of Copy Group Id			
				copyGroupName	-			
				type	-			
				visibility	-			
				defaultValue	Default values of Copy Group Name			
				copyType	-			
				type	-			
				visibility	-			
				defaultValue	Default values of Copy Group Type			
				noCopy	-			
				type	-			
				visibility	-			

Data nesting information					Explanation	Range	Remarks	Repeatable
				readOnly	-			
				hidden	-			
				defaultValue	Default values of No Copy option			
			copyPace		-			
				type	-			
				visibility	-			
				valueList	-			
				readOnly	-			
				hidden	-			
				defaultValue	Default values of Copy Pace			
			fenceLevelTC		-			
				type	-			
				visibility	-			
				valueList	-			
				readOnly	-			
				hidden	-			

Data nesting information					Explanation	Range	Remarks	Repeatable
				defaultValue	Default values of Fence Level for TCS			
			fenceLevelUR					
				type	-			
				visibility	-			
				valueList	-			
				readOnly	-			
				hidden	-			
				defaultValue	Default values of Fence Level for UR			
			fenceLevelGAD					
				type	-			
				visibility	-			
				valueList	-			
				readOnly	-			
				hidden	-			
				defaultValue	Default values of Fence Level for GAD			

Data nesting information					Explanation	Range	Remarks	Repeatable
	primaryTertiaryRemote				Primary-Tertiary Remote Copy Pair Setting		-	-
		type			-		-	-
		itemInstances			-			
			type		-		-	-
			properties		-		-	-
				copyGroupId	-		-	-
				type	-		-	-
				visibility	-			
				defaultValue	Default values of Copy Group Id			
				copyGroupName	-			
				type	-			
				visibility	-			
				defaultValue	Default values of Copy Group Name			
				copyType	-			
				type	-			
				visibility	-			

Data nesting information					Explanation	Range	Remarks	Repeatable
				defaultValue	Default values of Copy Group Type			
			noCopy		-			
				type	-			
				visibility	-			
				readOnly	-			
				hidden	-			
				defaultValue	Default values of No Copy option			
			fenceLevelUR					
				type	-			
				visibility	-			
				valueList	-			
				readOnly				
				hidden				
				defaultValue	Default values of Fence Level for UR			
	secondaryTertiaryRemote				Secondary-Tertiary Remote Copy Pair Setting			

Data nesting information					Explanation	Range	Remarks	Repeatable
		*Same as primaryTertiaryRemote						
	primaryTI				Primary Site : TI Copy Pair Setting			
		type			-		-	-
		visibility			-		-	-
		itemInstances			-			
	primarySI				Primary Site : SI Copy Pair Setting			
		type			-		-	-
		visibility			-		-	-
		itemInstances			-			
			type		-		-	-
			properties		-		-	-
			copyGroupID		-		-	-
				type	-		-	-
				visibility	-			
				defaultValue	Default values of Copy Group ID			
			copyGroupName		-			



Data nesting information					Explanation	Range	Remarks	Repeatable
				type	-			
				visibility	-			
				defaultValue	Default values of Copy Group Name			
			split		-			
				type	-			
				visibility	-			
				valueList	-			
				readOnly	-			
				hidden	-			
				defaultValue	Default values of split option			
			copyPace		-			
				type	-			
				visibility	-			
				valueList	-			
				readOnly				
				hidden				
				defaultValue	Default values of Copy Pace			

Data nesting information					Explanation	Range	Remarks	Repeatable
	secondaryTI				Secondary Site : TI Copy Pair Setting			
		*Same as primaryTI			-		-	-
	secondarySI				Secondary Site : SI Copy Pair Setting			
		*Same as primarySI			-			
	tertiaryTI				Tertiary Site : TI Copy Pair Setting			
		*Same as primaryTI			-		-	-
	tertiarySI				Tertiary Site : SI Copy Pair Setting			
		*Same as primarySI			-			

**Allocate replicated volumes on existing copy topology (submit)**

<b>keyName</b>	<b>Type</b>	<b>Explanation</b>	<b>Range</b>
provRemoteCopy.topologySetting.primary.volumeSettings.value	file	Primary Volume Settings	Same as Allocate replicated volumes on new copy topology (Edit).
provRemoteCopy.topologySetting.primarySI.volumeSettings.value	file	Primary SI Volume Settings	Same as Allocate replicated volumes on new copy topology (Edit).
provRemoteCopy.topologySetting.primaryTI.volumeSettings.value	file	Primary TI Volume Settings	Same as Allocate replicated volumes on new copy topology (Edit).
provRemoteCopy.topologySetting.secondary.volumeSettings.value	file	Secondary Volume Settings	Same as Allocate replicated volumes on new copy topology (Edit).
provRemoteCopy.topologySetting.secondarySI.volumeSettings.value	file	Secondary SI Volume Settings	Same as Allocate replicated volumes on new copy topology (Edit).
provRemoteCopy.topologySetting.secondaryTI.volumeSettings.value	file	Secondary TI Volume Settings	Same as Allocate replicated volumes on new copy topology (Edit).

Allocate replicated volumes on existing copy topology (task detail)

keyName	Type	Explanation	Range
provRemoteCopy.topologySetting.tertiary.volumeSettings.value	file	Tertiary Volume Settings	Same as Allocate replicated volumes on new copy topology (Edit).
rovRemoteCopy.topologySetting.tertiarySI.volumeSettings.value	file	Tertiary SI Volume Settings	Same as Allocate replicated volumes on new copy topology (Edit).
provRemoteCopy.topologySetting.tertiaryTI.volumeSettings.value	file	Tertiary TI Volume Settings	Same as Allocate replicated volumes on new copy topology (Edit).
provRemoteCopy.topologySetting.copyPairSettings.value	file	Copy Pair Settings	See the File property list that follows this table.

Allocate replicated volumes on existing copy topology (task detail)

keyName	Explanation	Input/Output	Type	Range
provRemoteCopy.taskResult.primarySecondaryRemote.copyGroupInformation	Primary-Secondary Copy Group Configuration Information	Output	File	Same as allocate LikeRemoteCopy.taskResult.primarySI.copyGroupInformation.

keyName	Explanation	Input/Output	Type	Range
provRemoteCopy.taskResult.primary.lunPathConfigurationInformation	Primary Site/ Primary Volume LUN Path Configuration Information	Output	File	See the File property list that follows this table.
provRemoteCopy.taskResult.primary.numberOfLdev	Primary Site/ Number of Volumes for Primary Volumes	Output	String	The number of the allocated volumes .
provRemoteCopy.taskResult.primary.numberOfLunPath	Primary Site/ Number of LUN Paths for Primary Volumes	Output	String	The number of paths.
provRemoteCopy.taskResult.primarySI.copyGroupInformation	Primary Site/ Primary SI Copy Group Configuration Information	Output	File	See the File property list that follows this table.

Allocate replicated volumes on existing copy topology (task detail)

keyName	Explanation	Input/Output	Type	Range
provRemoteCopy.taskResult.primarySI.lunPathConfigurationInformation	Primary Site/ Primary SI Volume LUN Path Configuration Information	Output	File	Same as allocate LikeRemoteCopy.taskResult.primary.lunPathConfigurationInformation
provRemoteCopy.taskResult.primarySI.numberOfLdev	Primary Site/ Number of Volumes for Primary SI Volumes	Output	String	The number of the allocated volumes.
provRemoteCopy.taskResult.primarySI.numberOfLunPath	Primary Site/ Number of LUN Paths for Primary SI Volumes	Output	String	The number of paths.
provRemoteCopy.taskResult.primaryTI.copyGroupInformation	Primary Site/ primary TI Copy Group Configuration Information	Output	File	Same as allocate LikeRemoteCopy.taskResult.primarySI.copyGroupInformation

Allocate replicated volumes on existing copy topology (task detail)

keyName	Explanation	Input/Output	Type	Range
provRemoteCopy.taskResult.primaryTl.lunPathConfigurationInformation	Primary Site/ Primary TI Volume LUN Path Configuration Information	Output	File	Same as allocate LikeRemoteCopy.taskResult.primary.lunPathConfigurationInformation
provRemoteCopy.taskResult.primaryTl.numberOfDev	Primary Site/ Number of Volumes for Primary TI Volumes	Output	String	The number of the allocated volumes.
provRemoteCopy.taskResult.primaryTl.numberOfLunPath	Primary Site/ Number of LUN Paths for Primary TI Volumes	Output	String	The number of paths.
provRemoteCopy.taskResult.primaryTertiaryRemote.copyGroupInformation	Primary-Tertiary Copy Group Configuration Information	Output	File	Same as allocate LikeRemoteCopy.taskResult.primarySl.copyGroupInformation

keyName	Explanation	Input/Output	Type	Range
provRemoteCopy.taskResult.secondary.lunPathConfigurationInformation	Secondary Site/ Primary Volume LUN Path Configuration Information	Output	File	Same as allocate LikeRemoteCopy.taskResult.primary.lunPathConfigurationInformation
provRemoteCopy.taskResult.secondary.numberOfLdev	Secondary Site/ Number of Volumes for Secondary Volumes	Output	String	The number of the allocated volumes.
provRemoteCopy.taskResult.secondary.numberOfLunPath	Secondary Site/ Number of LUN Paths for Secondary Volumes	Output	String	The number of paths.
provRemoteCopy.taskResult.secondary.secondarySIcopyGroupInformation	Secondary Site/ Secondary SI Copy Group Configuration Information	Output	File	Same as allocate LikeRemoteCopy.taskResult.primary.secondarySIcopyGroupInformation



keyName	Explanation	Input/Output	Type	Range
provRemoteCopy.taskResult.secondarySl.lunPathConfigurationInformation	Secondary Site/ Secondary Sl Volume LUN Path Configuration Information	Output	File	Same as allocate LikeRemoteCopy.taskResult.primary.lunPathConfigurationInformation
provRemoteCopy.taskResult.secondarySl.numberOfLdev	Secondary Site/ Number of Volumes for Secondary Sl Volumes	Output	String	The number of the allocated volumes.
provRemoteCopy.taskResult.secondarySl.numberOfLunPath	Secondary Site/ Number of LUN Paths for Secondary Sl Volumes	Output	String	The number of paths.
provRemoteCopy.taskResult.secondaryTl.copyGroupInformation	Secondary Site/ Secondary Tl Copy Group Configuration Information	Output	File	Same as allocate LikeRemoteCopy.taskResult.primarySl.copyGroupInformation

Allocate replicated volumes on existing copy topology (task detail)

keyName	Explanation	Input/Output	Type	Range
provRemoteCopy.taskResult.secondaryTl.lunPathConfigurationInformation	Secondary Site/ Secondary TI Volume LUN Path Configuration Information	Output	File	Same as allocate LikeRemoteCopy.taskResult.primary.lunPathConfigurationInformation
provRemoteCopy.taskResult.secondaryTl.numberOfLdev	Secondary Site/ Number of Volumes for Secondary TI Volumes	Output	String	The number of the allocated volumes.
provRemoteCopy.taskResult.secondaryTl.numberOfLunPath	Secondary Site/ Number of LUN Paths for Secondary TI Volumes	Output	String	The number of paths.
provRemoteCopy.taskResult.secondaryTertiaryRemote.copyGroupInformation	Secondary-Tertiary Copy Group Configuration Information	Output	File	Same as allocate LikeRemoteCopy.taskResult.primarySl.copyGroupInformation

keyName	Explanation	Input/Output	Type	Range
provRemoteCopy.taskResult.tertiary.lunPathConfigurationInformation	Tertiary Site/ Tertiary Volume LUN Path Configuration Information	Output	File	Same as allocate LikeRemoteCopy.taskResult.primary.lunPathConfigurationInformation
provRemoteCopy.taskResult.tertiary.numberOfLdev	Tertiary Site/ Number of Volumes for Tertiary Volumes	Output	String	The number of the allocated volumes.
provRemoteCopy.taskResult.tertiary.numberOfLunPath	Tertiary Site/ Number of LUN Paths for Tertiary Volumes	Output	String	The number of paths.
provRemoteCopy.taskResult.tertiarySI.copyGroupInformation	Tertiary Site/ Tertiary SI Copy Group Configuration Information	Output	File	Same as allocate LikeRemoteCopy.taskResult.primarySI.copyGroupInformation

keyName	Explanation	Input/Output	Type	Range
provRemoteCopy.taskResult.tertiarySI.lunPathConfigurationInformation	Tertiary Site/ Tertiary SI Volume LUN Path Configuration Information	Output	File	Same as allocate LikeRemoteCopy. taskResult.primary.lunPathConfigurationInformation
provRemoteCopy.taskResult.tertiarySI.numberOfLdev	Tertiary Site/ Number of Volumes for Tertiary SI Volumes	Output	String	The number of the allocated volumes.
provRemoteCopy.taskResult.tertiarySI.numberOfLunPath	Tertiary Site/ Number of LUN Paths for Tertiary SI Volumes	Output	String	The number of paths.
provRemoteCopy.taskResult.tertiaryTI.copyGroupInformation	Tertiary Site/ Tertiary TI Copy Group Configuration Information	Output	File	Same as allocate LikeRemoteCopy. taskResult.primarySI.copyGroupInformation

keyName	Explanation	Input/Output	Type	Range
provRemoteCopy.taskResult.tertiaryTI.lunPathConfigurationInformation	Tertiary Site/ Tertiary TI Volume LUN Path Configuration Information	Output	File	Same as allocate LikeRemoteCopy.taskResult.primary.lunPathConfigurationInformation
provRemoteCopy.taskResult.tertiaryTI.numberOfLdev	Tertiary Site/ Number of Volumes for Tertiary TI Volumes	Output	String	The number of the allocated volumes.
provRemoteCopy.taskResult.tertiaryTI.numberOfLunPath	Tertiary Site/ Number of LUN Paths for Tertiary TI Volumes	Output	String	The number of paths.
service.errorMessage	Error Message	Output	String	Summary information of error messages.

## Allocate replicated volumes on new copy topology service properties

Use the following properties to modify or create values for the allocate replicated volumes on new copy topology service.



**Note:** The term "VSP Gx00 models" refers to the Virtual Storage Platform G200, G400, G600, G800 product models. The term "VSP Fx00 models" refers to the Virtual Storage Platform F400, F600, F800 product models.

## Allocate replicated volumes on new copy topology (edit)

keyName	Explanation	Type	Range
createRemoteCopy.topologySetting.primary.storageSettings.value	Storage Settings on Primary site (Model, Serial number).	file	See the "File type property list" section following this table.
createRemoteCopy.topologySetting.secondary.storageSettings.value	Storage Settings on Secondary site (Model, Serial number).	file	See the "File type property list" section following this table.
createRemoteCopy.topologySetting.tertiary.storageSettings.value	Storage Settings on Tertiary site (Model, Serial number).	file	See the "File type property list" section following this table.
createRemoteCopy.topologySetting.primary.volumeSettings.value	Primary Volume Settings.	file	See the "File type property list" section following this table.
createRemoteCopy.topologySetting.primarySI.volumeSettings.value	Primary SI Volume Settings.	file	See the "File type property list" section following this table.

keyName	Explanation	Type	Range
createRemoteCopy.topologySetting.primaryTI.volumeSettings.value	Primary TI Volume Settings.	file	See the "File type property list" section following this table.
createRemoteCopy.topologySetting.secondary.volumeSettings.value	Secondary Volume Settings.	file	See the "File type property list" section following this table.
createRemoteCopy.topologySetting.secondarySI.volumeSettings.value	Secondary SI Volume Settings.	file	Same as #5.
createRemoteCopy.topologySetting.secondaryTI.volumeSettings.value	Secondary TI Volume Settings.	file	Same as #6.
createRemoteCopy.topologySetting.tertiary.volumeSettings.value	Tertiary Volume Settings.	file	Same as #7.
createRemoteCopy.topologySetting.tertiarySI.volumeSettings.value	Tertiary SI Volume Settings.	file	Same as #5.
createRemoteCopy.topologySetting.tertiaryTI.volumeSettings.value	Tertiary TI Volume Settings.	file	Same as #6.
createRemoteCopy.topologySetting.copyPairSettings.value	Copy Pair Settings.	file	See the "File type property list" section following this table.

keyName	Explanation	Type	Range
createRemoteCopy.topologySetting.primary.storageSettings.restriction	Restriction of Storage Settings on Primary site (Model, Serial number).	file	See the "File type property list" section following this table.
createRemoteCopy.topologySetting.secondary.storageSettings.restriction	Restriction of Storage Settings on Secondary site (Model, Serial number).	file	Same as #14.
createRemoteCopy.topologySetting.tertiary.storageSettings.restriction	Restriction of Storage Settings on Tertiary site (Model, Serial number).	file	Same as #14.
createRemoteCopy.topologySetting.primary.volumeSettings.restriction	Restriction of Primary Volume Settings.	file	See the "File type property list" section following this table.
createRemoteCopy.topologySetting.primarySI.volumeSettings.restriction	Restriction of Primary SI Volume Settings.	file	See the "File type property list" section following this table.
createRemoteCopy.topologySetting.primaryTI.volumeSettings.restriction	Restriction of Primary TI Volume Settings.	file	See the "File type property list" section following this table.



keyName	Explanation	Type	Range
createRemoteCopy.topologySetting.secondary.volumeSettings.restriction	Restriction of Secondary Volume Settings.	file	See the "File type property list" section following this table.
createRemoteCopy.topologySetting.secondarySI.volumeSettings.restriction	Restriction of Secondary SI Volume Settings.	file	See the "File type property list" section following this table.
createRemoteCopy.topologySetting.secondaryTI.volumeSettings.restriction	Restriction of Secondary TI Volume Settings.	file	See the "File type property list" section following this table.
createRemoteCopy.topologySetting.tertiary.volumeSettings.restriction	Restriction of Tertiary Volume Settings.	file	See the "File type property list" section following this table.
createRemoteCopy.topologySetting.tertiarySI.volumeSettings.restriction	Restriction of Tertiary SI Volume Settings.	file	See the "File type property list" section following this table.
createRemoteCopy.topologySetting.tertiaryTI.volumeSettings.restriction	Restriction of Tertiary TI Volume Settings.	file	See the "File type property list" section following this table.

keyName	Explanation	Type	Range
createRemoteCopy.topologySetting.copyPairSettings.restriction	Restriction of Copy Pair Settings.	file	See the "File type property list" section following this table.

**Table 139 createRemoteCopy.topologySetting.primary.storageSettings.value**

Data nesting information						Explanation	Range	Remarks	Repeatable
values						-	-	-	-
	storageSystem					Storage System Name		-	-
	model					Storage System Model		-	-
	serialNumber					Storage System Serial Number		-	-
	objectId							Do not need specify the value when use the API.	-
	vsm								

Data nesting information						Explanation	Range	Remarks	Repeatable
		vsmName				Virtual Storage Machine Name			
		vsmModel				Virtual Storage Machine Model			
		vsmSerialNumber				Virtual Storage Machine Serial Number			
		vsmObjectId				Virtual Storage Machine Object ID		Do not need specify the value when use the API.	
	prefilter								
			condition						
				join		Join	"and" or "or"		
				expressions			Identifier		yes

Data nesting information						Explanation	Range	Remarks	Repeatable
					op	Operator	Operator	Value defined at ValueList Common for all the resources: eq, ne, starts, end	
					name	Name	Name		
					value	Value	Value		

**Table 140 createRemoteCopy.topologySetting.primary.storageSettings.restriction**

Data nesting information					Explanation	Range	Remarks	Repeatable
type							-	-
properties							-	-
	storageSystem						-	-
		type						

Data nesting information						Explanati on	Range	Remark s	Rep eata ble
		visibil ity						-	-
		defau ltValu e				Default values of storageSy stem		-	-
		model						-	-
		visibil ity						-	-
		read Only						-	-
		isReq uired						-	-
		defau ltValu e				Default values of model		-	-
		serialNum ber						-	-
		visibil ity						-	-
		defau ltValu e				Default values of serialNu mber	-	-	-
		objectId						-	-
		visibil ity						-	-
		defau ltValu e				Default values of objectId		Not necess ary to specify the value when using the API.	-

Data nesting information						Explanati on	Range	Remark s	Rep eata ble
	vsm								
		type							
		prop erties							
			vsmNa me						
				type					
				visibili ty					
				defau ltValu e			Default values of Virtual Storage Machine Name		
			vsmMo del						
				type					
				visibili ty					
				defau ltValu e			Default values of Virtual Storage Machine Model		
			vsmSer ial Numb er						
				type					
				visibili ty					

Data nesting information						Explanati on	Range	Remark s	Rep eata ble
				defau ltValu e		Default values of Virtual Storage Machine Object ID			
			vsmObjectId						
				type					
				visibili ty					
				defau ltValu e					
	prefilter								
		type							
		readOnly							
		hidde n							
		properties							
			conditi on						
				type					
			properties						
					join			Join	
						type			
						visibili ty			
						valueL ist			
						defaul tValue			
		expressions							

Data nesting information							Explanati on	Range	Remark s	Rep eata ble
				type						
				iteminstances						
					type					
					properties					
						op			Operat or	
							type			
							visibility			
							valueList			
							defaultVa lue			
						name			Name	
							type			
							visibility			
							valueList			
							defaultVa lue			
						value			Value	
							type			
							visibility			
							defaultVa lue			

**Table 141 createRemoteCopy.topologySetting.secondary.storageSettings.value**

Data nesting information				Expla- nation	Range	Remark s	Repeata ble
values							-



	storageSystem				Storage System Name			-
	model				Storage System Model			-
	serialNumber				Storage System Serial Number			-
	objectid				Storage System		Not necessarily to specify the value when using the API	-
	preFilter							
		condition						
			join		Join	"and" or "or"		
			expressions			Identifier		
				op	Operator	Operator	Value defined at ValueList Common for all the resources: eq, ne, starts, ends	

				name	Name	Name		
				value	Value	Value		

**Table 142**  
**createRemoteCopy.topologySetting.secondary.storageSettings.restriction**

Data nesting information							Expla- - natio n	Rang e	Remar ks	Rep eat abl e
type									-	-
proper ties									-	-
	storageSy stem								-	-
		type								
		visibi lity							-	-
		defa ultVa lue					Defau lt value s of stora geSys tem		-	-
		model							-	-
		type							-	-
		visibi lity							-	-
		read Only							-	-
		defa ultVa lue					Defau lt value s of mode l		-	-

Data nesting information							Expla- - natio n	Rang e	Remar ks	Rep eat abl e
	serialNu mber								-	-
		type							-	-
		visibi lity							-	-
		defau ltVa lue					Defau lt value s of serial Num ber		-	-
	objectId								-	-
		type							-	-
		visibi lity							-	-
		defaultValue					Defau lt value s of object Id		Not necess ary to specify the value when using the API	-
	prefilter									
		type								
		readOnly								
		hidd en								
		properties								
			condit ion							
				type						

Data nesting information							Explanation	Range	Remarks	Repeatable
				properties						
					join			Join		
						type				
						visibility				
						valueList				
						defaultValue				
				expressions						
					type					
					iteminstances					
						type				
						properties				
						op		Operator		
							type			
							visibility			
							valueList			
							defaultValue			
						name		Name		
							type			
							visibility			
							valueList			
							defaultValue			
						value		Value		

Data nesting information							Explanation	Range	Remarks	Repeatable
						type				
						visibility				
						defaultValue				

**Table 143 createRemoteCopy.topologySetting.primary.volumeSettings.value**

Data nesting information					Explanation	Range	Remarks	Repeatable
values					-	-	-	-
	volumeSettings						Same as Allocate Volumes (provisioning .volumeSetting.volumeSettings.value)	-
	advancedOption						Same as Allocate Volumes (provisioning .advancedOption.advancedOptions.value)	-

Data nesting information					Explanation	Range	Remarks	Repeatable
	resourceCriteria						Same as Allocate volumes for a symmetric cluster server from two storage systems (provisioning .resourceCriteria.resourceSelectionCriteria.bootVolumeUsageSpecific.value)	-
	hostSetting						-	-
		hostsfilter			Hosts Filter			
			condition					
				join	Join	"and" or "or"		
				expression		Identifier		
				op	Operator	Operator	Value defined at ValueList Common for all the resources: eq, ne, starts, ends	
				name	Name	Name		
				value	Value	Value		

Data nesting information				Explanation	Range	Remarks	Repeatable
		targetHosts				Same as Allocate Volumes (provisioning .hostSetting.targetHosts.value)	
		crossPathSettings					
			crossPathEnabled			Configure cross-path in the case of "true".	
			aluaSettingOnPreferredPath			ALUA setting on preferred path. If you want to suppress I/O of the cross-path by ALUA setting, specify the setting value to true.	"true" or "false"
			hmoSettingOnNonPreferredPath			Host Mode Option setting on nonpreferred path. If you want to suppress I/O of the cross-path by HDLM, specify the setting value to true.	"true" or "false"

**Table 144 createRemoteCopy.topologySetting.secondary.volumeSettings.value**

Data nesting information				Explanation	Range	Remarks	Repeatable
values				-	-	-	-
	volumeSettings					Same as Allocate Volumes (provisioning .volumeSetting.volumeSettings.value)	-
	advancedOption					Same as Allocate Volumes (provisioning .advancedOption.advancedOptions.value)	-
	resourceCriteria					Same as Allocate volumes for a symmetric cluster server from two storage systems (provisioning .resourceCriteria.resourceSelectionCriteria.bootVolumeUsageSpecific.value)  <b>Note:</b> Do not specify "IG".	-
	hostSetting					-	-
		hostsfilter			Hosts Filter		
			condition				



Data nesting information					Explanation	Range	Remarks	Repeatable
				join	Join	"and" or "or"		
				expression		Identifier		
				op	Operator	Operator	Value defined at ValueList Common for all the resources: eq, ne, starts, ends	
				name	Name	Name		
				value	Value	Value		
		targetHosts					Same as Allocate Volumes (provisioning .hostSetting.targetHosts.value)	

**Table 145 createRemoteCopy.topologySetting.primarySI.volumeSettings.value**

Data nesting information					Explanation	Range	Remarks	Repeatable
values					-	-	-	-
	volumeSettings						Same as Allocate Volumes (provisioning .volumeSetting.volumeSettings.value)	-

Data nesting information					Explanation	Range	Remarks	Repeatable
	advancedOption						Same as Allocate Volumes (provisioning .advancedOption.advancedOptions.value)	-
	resourceCriteria						Same as Allocate volumes for a symmetric cluster server from two storage systems (provisioning .resourceCriteria.resourceSelectionCriteria.bootVolumeUsageSpecific.value)  <b>Note:</b> Do not specify "IG" and "RG".	-
	hostSetting						-	-
		hostsfilter			Hosts Filter			
			condition					
			join		Join	"and" or "or"		
			expression			Identifier		

Data nesting information						Explanation	Range	Remarks	Repeatable
					op	Operator	Operator	Value defined at ValueList Common for all the resources: eq, ne, starts, ends	
					name	Name	Name		
					value	Value	Value		
		targetHosts						Same as Allocate Volumes (provisioning .hostSetting.targetHosts.value)	

**Table 146 createRemoteCopy.topologySetting.primaryTI.volumeSettings.value**

Data nesting information						Explanation	Range	Remarks	Repeatable
values						-	-	-	-
	volumeSettings							Same as Allocate Volumes (provisioning .volumeSetting.volumeSettings.value)	-
	advancedOption							Same as Allocate Volumes (provisioning .advancedOption.advancedOptions.value)	-

Data nesting information					Explanation	Range	Remarks	Repeatable
	resourceCriteria						Empty list	-
	hostSetting						-	-
		hostsfilter			Hosts Filter			
			condition					
				join	Join	"and" or "or"		
				expression		Identifier		
				op	Operator	Operator	Value defined at ValueList Common for all the resources: eq, ne, starts, ends	
				name	Name	Name		
				value	Value	Value		
		targetHosts					Same as Allocate Volumes (provisioning .hostSetting.targetHosts.value)	

**Table 147 createRemoteCopy.topologySetting.primary.volumeSettings.restriction**

Data nesting information					Explanation	Range	Remarks	Repeatable
	type						-	-
	visibility							
	properties							

Data nesting information				Explanati on	Rang e	Remarks	Repeat able
volumeSe ttings						Same as Allocate Volumes (provisionin g.volumeSe tting.volum eSettings.re striction)	-
advanced Option						Same as Allocate Volumes (provisionin g.advanced Option.adv ancedOptio ns.restrictio n)	-
resourceC riteria						Same as Allocate volumes for a symmetric cluster server from two storage systems (provisionin g.resource Criteria.res ourceSelect ionCriteria. bootVolum eUsageSpe cific.restrict ion)	-
hostSettin g						-	-
type							
properti es							

Data nesting information										Explanati on	Rang e	Remarks	Repeat able	
							hostsfil ter				Filtering criteria of Host			
							type							
							readO nly							
							hidden							
							proper ties							
							con ditio n							
							type							
							proper ties							
							jo in				Join			
							type							
							visibility							
							valueList							
							defaultValu e							
							expressions				Identifier			
							type							
							itemInstan ces							
							ty p e							
							proper ties							
							op				Operator			
							type							

Data nesting information										Explanati on	Rang e	Remarks	Repeat able	
										visibility				
										valueList				
										default Value				
								na me		Name				
								type						
								visibility						
								default Value						
								val ue		Value				
								type						
								visibility						
								valueList						
								default Value						
			targetH osts									Same as Allocate Volumes (provisionin g.hostSettin g.targetHos ts.restrictio n)		
			crossPathSetti ngs											
				typ e										
				properti es										

Data nesting information				Explanati on	Rang e	Remarks	Repeat able
			crossPathEnabled		Cross path settin g		
			ty p e				
			visibil ity				
			defaultValu e				
			aluaSettingOnPreferredPa th		ALUA settin g on prefe rred path		
			ty p e				
			visibili ty				
			defaultValu e				
			hmoSettingOnNonPreferr edPath		HMO settin g on non- prefe rred path		
			ty p e				
			visibili ty				
			defaultValu e				



**Table 148**  
**createRemoteCopy.topologySetting.secondary.volumeSettings.restriction**

Data nesting information						Explanati on	Rang e	Remarks	Repeat able
type								-	-
properties									
volumeSe ttings								Same as Allocate Volumes (provisionin g.volumeSe tting.volum eSettings.re striction)	-
advanced Option								Same as Allocate Volumes (provisionin g.advanced Option.adv ancedOptio ns.restrictio n)	-
resourceC riteria								Same as Allocate volumes for a symmetric cluster server from two storage systems  (provisionin g.resource Criteria.res ourceSelect ionCriteria. bootVolum eUsageSpe cific.restrict ion)  <b>Note:</b> Do not specify "IG".	-

Data nesting information										Explanati on	Rang e	Remarks	Repeat able
								hostSettin g				-	-
								type					
								properti es					
								hostsfil ter				Filtering criteria of Host	
								type					
								readOn ly					
								hidden					
								proper ties					
								condit ion					
								type					
								proper ties					
								jo in				Join	
								type					
								visibility					
								valueList					
								defaultVa lue					
								expressions				Identifier	
								type					
								itemInsta nces					
								ty p e					

Data nesting information										Explanati on	Rang e	Remarks	Repeat able
									proper ties				
									op	Operator			
									type				
									visibility				
									valueLis t				
									default Value				
									na me	Name			
									type				
									visibility				
									valueLis t				
									default Value				
									val ue	Value			
									type				
									visibility				
									default Value				
									targetH osts			Same as Allocate Volumes (provisionin g.hostSetti ng.targetH osts.restrict ion)	

**Table 149 createRemoteCopy.topologySetting.primarySI.volumeSettings.restriction**

Data nesting information							Explanati on	Rang e	Remarks	Repeat able
type									-	-
visibility										
properties										
volumeSe ttings									Same as Allocate Volumes (provisionin g.volumeSe tting.volum eSettings.re striction)	-
advanced Option									Same as Allocate Volumes (provisionin g.advanced Option.adv ancedOptio ns.restrictio n)	-

Data nesting information										Explanati on	Rang e	Remarks	Repeat able
									resourceC riteria			'Same as Allocate volumes for a symmetric cluster server from two storage systems (provisionin g.resource Criteria.res ourceSelect ionCriteria. bootVolum eUsageSpe cific.restrict ion).  <b>Note:</b> Do not specify "IG" and "RG".	-
									hostSettin g			-	-
									type				
									properti es				
									hostsfil ter		Filtering criteria of Host		
									type				
									readOn ly				
									hidden				
									proper ties				
									condit ion				
									type				

Data nesting information										Explanati on	Rang e	Remarks	Repeat able
								proper ties					
								join		Join			
								type					
								visibility					
								valueList					
								defaultVa lue					
								expressions		Identifier			
								type					
								itemInsta nces					
								ty p e					
								proper ties					
								op		Operator			
								type					
								visibility					
								valueLis t					
								default Value					
								na me		Name			
								type					
								visibility					
								valueLis t					

Data nesting information													Explanati on	Rang e	Remarks	Repeat able		
													default Value					
													val ue	Value				
													type					
													visibility					
													default Value					
													targetH osts			Same as Allocate Volumes (provisionin g.hostSetti ng.targetH osts.restrict ion)		

**Table 150 createRemoteCopy.topologySetting.primaryTI.volumeSettings.restriction**

Data nesting information													Explanati on	Rang e	Remarks	Repeat able	
													type			-	-
													visibility				
													properties				
													volumeSe ttings			Same as Allocate Volumes (provisionin g.volumeSe tting.volum eSettings.re striction)	-

Data nesting information										Explanati on	Rang e	Remarks	Repeat able
									advanced Option			Same as Allocate Volumes (provisionin g.advanced Option.adv ancedOptio ns.restrictio n)	-
									resourceC riteria			Empty list	-
									hostSettin g			-	-
									type				
									properti es				
									hostsfil ter		Filtering criteria of Host		
									type				
									readOn ly				
									hidden				
									proper ties				
									condit ion				
									type				
									proper ties				
									jo in		Join		
									type				
									visibility				
									valueList				



Data nesting information										Explanati on	Rang e	Remarks	Repeat able
									defaultVa lue				
									expressions	Identifier			
									type				
									itemInsta nces				
									ty p e				
									proper ties				
									op	Operator			
									type				
									visibility				
									valueLis t				
									default Value				
									na me	Name			
									type				
									visibility				
									valueLis t				
									default Value				
									val ue	Value			
									type				
									visibility				
									default Value				

Data nesting information							Explanation	Range	Remarks	Repeatable
		targetHosts							Same as Allocate Volumes (provisioning.hostSetting.targetHosts.restriction)	

**Table 151 createRemoteCopy.topologySetting.copyPairSettings.value**

Data nesting information			Explanation	Range	Remarks	Repeatable
values			-			
	copyTopologyForm		CopyTopology Form	"2DC Remote Copy (TCS)", "2DC Remote Copy (UR)", "3DC Cascade", "3DC Multi Target", "3DC Multi Target with Delta Resync", "global-active device", "global-active device and Universal Replicator with Delta Resync"		
	primarySecondaryRemote		Primary - Secondary Remote Pair Setting			

Data nesting information				Explanation	Range	Remarks	Repeatable
		copyType		Copy Type of TCS/UR/GAD	"TCS" or "UR" or "GAD"		
		copyGroup Name		Copy Group name of TCS/UR/GAD			
		noCopy		No Copy of TCS/UR/GAD			
		copyPace		CopyPace of TCS	1 - 15		
		fenceLevelT C		Fence Level Of TCS			
		fenceLevel UR		Fence Level Of UR			
		fenceLevel GAD		Fence Level Of GAD			
		assignCtg		Assign CTG ID or Not of TCS/UR/GAD			
		ctgId		CTG ID of TCS/UR/GAD			
		muNumber		MU Number of UR/GAD			
		quorumDiskId		Quorum Disk ID of GAD			
		primaryConfigFile		Primary Config File			
			management Server				
			name	Primary Pair Management Server Name			

Data nesting information					Explanation	Range	Remarks	Repeatable
				objectId	Primary Pair Management Server ID		Not necessarily to specify the value when using the API.	
			instanceNumber	Instance Number	0 - 2047			
			portNumber	PortNumber <b>Note:</b> Specify a value only if the selected instance number is not used by the existing instance.	0 - 65535			
			ipType	IPType	"HostName" or "IPV6" or "IPV4"			
		secondaryConfigFile						
			managementServer					
				name	Secondary Pair Management Server Name			
				objectId	Secondary Pair Management Server ID		Not necessarily to specify the value when using the API.	
			instanceNumber	Instance Number	0 - 2047			

Data nesting information				Explanation	Range	Remarks	Repeatable
			portNumber	PortNumber <b>Note:</b> Specify a value only if the selected instance number is not used by the existing instance.	0 - 65535		
			ipType	IPType	"HostName" or "IPV6" or "IPV4"		
			primaryPathGroupID	Primary Path Group ID of TCS/UR			
			secondaryPathGroupID	Secondary Path Group ID of TCS/UR			
			primaryJnlID	Primary JNLG ID of UR			
			secondaryJnlID	Secondary JNLG ID of UR			
		primaryTertiaryRemote		Primary - Tertiary Remote Pair Setting			
			*Same as primarySecondaryRemote				
		secondaryTertiaryRemote		Secondary - Tertiary Remote Pair Setting			
			*Same as primarySecondaryRemote				
		primaryTI		Primary TI Pair Setting			

Data nesting information				Explanation	Range	Remarks	Repeatable
		copyGroup Name		Copy Group Name of TI			
		isSnapshot Group		SnapshotGroup or not of TI			
		assignCtgForAtTimeSplit		Assign CTG ID or Not of TI			
		ctgId		CTG ID of TI			
		muNumber		MU Number of TI			
		primaryConfigFile					
			management Server				
			name	Primary Pair Management Server Name			
			objectId	Primary Pair Management Server ID		Not necessary to specify the value when using the API.	
			instanceNumber	Instance Number	0 - 2047		
			portNumber	PortNumber  <b>Note:</b> Specify a value only if the selected instance number is not used by the existing instance.	0 - 65535		
			ipType	IPType	"HostName" or "IPV6" or "IPV4"		

Data nesting information				Explanation	Range	Remarks	Repeatable
		secondaryConfigFile					
			managementServer				
			name	Secondary Pair Management Server Name			
			objectId	Secondary Pair Management Server ID		Not necessary to specify the value when using the API.	
			instanceNumber	Instance Number	0 - 2047		
			portNumber	PortNumber <b>Note:</b> Specify a value only if the selected instance number is not used by the existing instance.	0 - 65535		
			ipType	IPType	"HostName" or "IPV6" or "IPV4"		
		toPoolId		TI Pool ID	"		
	primarySI			Primary SI Pair Setting			
		copyGroupName		Copy Group name of SI			
		copyPace		CopyPace of SI	1 - 15		
		assignCtgForAtTimeSplit		Assign CTG ID or Not of SI			

Data nesting information				Explanation	Range	Remarks	Repeatable
		ctgid		CTG ID of SI			
		muNumber		MU Number of SI			
		primaryConfigFile					
			managementServer				
			name	Primary Pair Management Server Name			
			objectId	Primary Pair Management Server ID		Not necessarily to specify the value when using the API.	
			instanceNumber	Instance Number	0 - 2047		
			portNumber	PortNumber <b>Note:</b> Specify a value only if the selected instance number is not used by the existing instance.	0 - 65535		
			ipType	IPType	"HostName" or "IPV6" or "IPV4"		
		secondaryConfigFile					
			secondaryConfigFile				



Data nesting information					Explanation	Range	Remarks	Repeatable
				name	Secondary Pair Management Server Name			
				objectId	Secondary Pair Management Server ID		Not necessarily to specify the value when using the API.	
			instanceNumber		Instance Number	0 - 2047		
			portNumber		PortNumber <b>Note:</b> Specify a value only if the selected instance number is not used by the existing instance.	0 - 65535		
			ipType		IPType	"HostName" or "IPV6" or "IPV4"		
		split			Split	"None" , "Steady Split" or "Quick Split"		
	secondaryTI				Secondary TI Pair Setting			
		*Same as primaryTI						
	secondarySI				Secondary SI Pair Setting			
		*Same as primarySI						

Data nesting information				Explanation	Range	Remarks	Repeatable
	tertiaryTI			Tertiary TI Pair Setting			
		*Same as primaryTI					
	tertiarySI			Tertiary SI Pair Setting			
		*Same as primarySI					

**Table 152 createRemoteCopy.topologySetting.copyPairSettings.restriction**

Data nesting information										Explanation	Range	Remarks	Repeat..
value	s												
properties													
	copyTopology	Form								'Copy Topology Form			
	type												
	visibility												
	readOnly												

Data nesting information									Explanat ion	Range	Remark s	Rep eat..
		valueList								"2DC Remot e Copy (TCS)"," 2DC Remot e Copy (UR)"," 3DC Cascad e", "3DC Multi Target" , "3DC Multi Target with Delta Resync ", "global -active device" , "global -active device and Univer sal Replica tor with Delta Resync "		
		defaultVal ue										

Data nesting information										Explanat ion	Range	Remark s	Rep eat..
	primarySecondary Remote									Primary - Seconda ry Remote Pair Setting			
	typ e												
	visi bilit y												
	itemInsta nces												
		typ e											
		visi bilit y											
		pro per ties											
			copyTy pe										-
				ty pe									
				visibilit y									
				valueLi st									
				default Value						Default values of Copy Type			
				copyGroup Name									-

Data nesting information										Explanat ion	Range	Remark s	Rep eat..
					ty pe								
					visibilit y								
					default Value					Default values of Copy Group Name			
					noCop y								-
					ty pe								
					visibilit y								
					readOn ly								
					hidden								
					default Value					Default values of No Copy			
					copyP ace								-
					ty pe								
					visibilit y								
					readOn ly								
					hidden								
					default Value					Default values of Copy Pace			
					fenceLevelT C								-

Data nesting information										Explanat ion	Range	Remark s	Rep eat..
					ty pe								
					vis ibi lit y								
					readOn ly								
					hidden								
					valueLi st								
					default Value					Default values of Fence Level TCS			
					fenceLevel UR								-
					ty pe								
					visibilit y								
					readOn ly								
					hidden								
					valueLi st								
					default Value					Default values of Fence Level UR			
					fenceLevel GAD								
					type								
					visibilit y								

Data nesting information										Explanat ion	Range	Remark s	Rep eat..
					readOn ly								
					hidden								
					default Value								
					assignCtg								-
					ty pe								
					visibilit y								
					default Value					Default values of Assign CTG or Not			
					ct gl d								-
					ty pe								
					visibilit y								
					optionValue s								
						metho d							
						values							
					default Value					Default values of CTG ID			
					muNumber								-
					ty pe								
					visibilit y								

Data nesting information								Explanat ion	Range	Remark s	Rep eat..
					optionV alues						
						metho d					
						values					
					default Value			Default values of MU Number			
					quorumDis kId						
					type						
					visibilit y						
					optionValue s						
						metho d					
						values					
					default Value						
					primaryCon figFile						-
					type						
					propert ies						
						managementSer ver					-
						type					
						propert ies					
							na me				-



Data nesting information										Explanat ion	Range	Remark s	Rep eat..
									typ e				
									visi bili ty				
									readO nly				
									default Value	'Default values of Primary Pair Manage ment Server Name			
									objectId			Not necessa ry to specify the value when using the API.	
									type				
									visibilit y				
									readO nly				
									hidden				
									default Value	Default values of Primary Pair Manage ment Server ID			

Data nesting information							Explanat ion	Range	Remark s	Rep eat..
					instanceNu mber					-
					type					
					visibilit y					
					optionValue s					
					method					
					values					
					default tValue		Default values of Instance Number			
					portNu mber					-
					type					
					visibilit y					
					optionValue s					
					method					
					values					
					defaultValue		Default values of Port Number			
					ipType					-
					type					
					visibilit y					
					valueLi st					

Data nesting information										Explanat ion	Range	Remark s	Rep eat..
							default tValue			Default values of IP Type			
				secondaryConfi gFile									-
					type								
					propert ies								
						managem entServer							-
						type							
						proper ties							
							name						-
							type						
							visibilit y						
							readO nly						
							hidden						
							default Value	'Default values of Seconda ry Pair Manage ment Server Name					
							objectId					Not necessa ry to specify the value when using the API.	

Data nesting information								Explanat ion	Range	Remark s	Rep eat..
							type				
							visibilit y				
							ready Only				
							hidden				
							default Value	Default values of Seconda ry Pair Manage ment Server ID			
						instanceNu mber					-
						type					
						visibilit y					
						optionValue s					
						method					
						values	Default values of Instance Number				
						default tValue					
						portNu mber					-
						type					
						visibilit y					
						optionValue s					

Data nesting information										Explanat ion	Range	Remark s	Rep eat..
								method					
								values		Default values of Port Type			
								default tValue					
							ipT yp e						-
								type					
								visibilit y					
								valueLi st					
								default tValue		Default values of IP Type			
							primaryPathGro upId						-
								ty pe					
								visibilit y					
								readOn ly					
								optionValue s					
								metho d					
								values					

Data nesting information										Explanat ion	Range	Remark s	Rep eat..
					default Value					Default values of Primary Path Group ID			
					secondaryPath GroupId								-
					ty pe								
					visibilit y								
					readOn ly								
					optionValue s								
						metho d							
						values							
					default Value					Default values of Seconda ry Path Group ID			
					primaryJnl Id								-
					ty pe								
					visibilit y								
					readOn ly								
					optionValue s								
						metho d							

Data nesting information										Explanat ion	Range	Remark s	Rep eat..
						values							
					default Value					Default values of Primary JNLG ID			
					secondaryj nlgId								-
					ty pe								
					visibilit y								
					readOn ly								
					optionValue s								
						metho d							
						values							
					default Value					Default values of Seconda ry JNLG ID			
					primaryTertiaryRe mote					Primary - Tertiary Remote Pair Setting			-
					*Same as primarySecondary Remote								-
					secondaryTertiaryRem ote					Seconda ry - Tertiary Remote Pair Setting			-

Data nesting information								Explanat ion	Range	Remark s	Rep eat..
		*Same as primarySecondary Remote									-
	primary TI							Primary TI Pair Setting			-
		typ e									
		visi bilit y									
		itemInsta nces									
			typ e								
			properti es								
				copyGroup Name							-
				ty pe							
				visibilit y							
				default Value				Default values of Copy Group Name			
				isSnapshot Group							-
				ty pe							
				visibilit y							
				readOn ly							



Data nesting information										Explanat ion	Range	Remark s	Rep eat..
					default Value					Default values of Snapsho t group or not			
					assignCtgForAtT imeSplit								-
					ty pe								
					visibilit y								
					default Value					Default values of Assign CTG or Not			
					ct gl d								-
					ty pe								
					visibilit y								
					optionValue s								
						metho d							
						values							
					default Value					Default values of CTG ID			
					muNu mber								-
					ty pe								
					visibilit y								

Data nesting information										Explanat ion	Range	Remark s	Rep eat..
					optionValue s								
						method							
						values							
					default Value					Default values of MU Number			
					primaryCon figFile								-
					type								
					propert ies								
						managementSer ver							-
						type							
						proper ties							
							na me						-
								type					
								visibilit y					
								readO nly					
								default Value	'Default values of Primary Pair Manage ment Server Name				

Data nesting information										Explanat ion	Range	Remark s	Rep eat..
								objectId				Not necessa ry to specify the value when using the API.	
								type					
								visibilit y					
								readO nly					
								hidden					
								default Value	Default values of Seconda ry Pair Manage ment Server ID				
							instanceNu mber						-
								type					
								visibilit y					
								optionValue s					
								method					
								values					
								default tValue	Default values of Instance Number				

Data nesting information										Explanat ion	Range	Remark s	Rep eat..
						portNu mber							-
						type							
						visibilit y							
						option Values							
						method							
						values							
						default tValue				Default values of Port Number			
						ipT yp e							-
						type							
						visibilit y							
						valueLi st							
						default tValue				Default values of IP Type			
						secondaryConfi gFile							-
						type							
						propert ies							
						managementSer ver							-
						propert ies							

Data nesting information										Explanat ion	Range	Remark s	Rep eat..
								na me					-
								type					
								visibilit y					
								readO nly					
								default Value	Default values of Seconda ry Pair Manage ment Server Name				
								objectId				Not necessa ry to specify the value when using the API.	
								type					
								visibilit y					
								readO nly					
								hidden					
								default Value	Default values of Seconda ry Pair Manage ment Server ID				

Data nesting information								Explanat ion	Range	Remark s	Rep eat..
						instanceNu mber					-
						type					
						visibilit y					
						optionValue s					
						method					
						values	Default values of Instance Number				
						default tValue					
						portNu mber					-
						type					
						visibilit y					
						optionValue s					
						method					
						values	Default values of Port Type				
						default tValue					
						ipT yp e					-
						type					
						visibilit y					

Data nesting information										Explanat ion	Range	Remark s	Rep eat..
							readO nly						
							default tValue			Default values of IP Type			
						tiPoolI d							-
						ty pe							
						visibilit y							
						optionValue s							
							metho d						
							values						
						default Value				Default values of TI Pool ID			
		primary SI								'Primary SI Pair Setting			-
		typ e											
		itemInsta nces											
			typ e										
			visibility										
			properti es										
						copyGroup Name							-

Data nesting information										Explanat ion	Range	Remark s	Rep eat..
					ty pe								
					visibilit y								
					default Value					Default values of Copy Group Name			
					copyP ace								-
					ty pe								
					visibilit y								
					readOn ly								
					hidden								
					valueLi st								
					default Value					Default values of Copy Pace			
					assignCtgForAtT imeSplit								-
					ty pe								
					visibilit y								
					default Value					Default values of Assign CTG or Not			



Data nesting information										Explanat ion	Range	Remark s	Rep eat..
				ct gl d									-
				ty pe									
				visibilit y									
				readOn ly									
				hidden									
				default Value						Default values of CTG ID			
				muNu mber									-
				ty pe									
				visibilit y									
				optionValue s									
						metho d							
						values							
				default Value						Default values of MU Number			
				primaryCon figFile									-
				type									
				propert ies									
						manageme ntServer							-

Data nesting information										Explanat ion	Range	Remark s	Rep eat..
								type					
								proper ties					
								na me					-
								type					
								visibilit y					
								readO nly					
								hidden					
								default Value	'Default values of Primary Pair Manage ment Server Name				
								objectId				Not necessa ry to specify the value when using the API.	
								type					
								visibilit y					
								readO nly					

Data nesting information								Explanat ion	Range	Remark s	Rep eat..
							default Value	Default values of Seconda ry Pair Manage ment Server ID			
						instanceNu mber					-
						type					
						visibilit y					
						optionValue s					
						method					
						values					
						default tValue		Default values of Instance Number			
						portNu mber					-
						type					
						visibilit y					
						optionValue s					
						method					
						values					
						default tValue		Default values of Port Number			

Data nesting information										Explanat ion	Range	Remark s	Rep eat..	
						ipT yp e								-
							type							
							visibilit y							
							default tValue			Default values of IP Type				
						secondaryConfi gFile								-
						type								
						propert ies								
						managementSer ver								-
						type								
						proper ties								
							name							-
							type							
							visibilit y							
							readO nly							
							default Value			'Default values of Seconda ry Pair Manage ment Server Name				

Data nesting information								Explanat ion	Range	Remark s	Rep eat..
							objectId			Not necessa ry to specify the value when using the API.	
							type				
							visibilit y				
							readO nly				
							hidden				
							default Value	Default values of Seconda ry Pair Manage ment Server ID			
							instanceNu mber				-
							type				
							visibilit y				
							optionValue s				
							method				
							values	Default values of Instance Number			
							default tValue				

Data nesting information										Explanat ion	Range	Remark s	Rep eat..
						portNu mber							-
						type							
						visibilit y							
						optionValue s							
						method							
						values			Default values of Port Type				
						default tValue							
						ipT yp e							-
						type							
						visibilit y							
						valueLi st							
						default tValue			Default values of IP Type				
				s pl it									-
					ty pe								
					visibilit y								
					readOn ly								
					hidden								

Data nesting information										Explanat ion	Range	Remark s	Rep eat..
					valueLi st								
					default Value					Default values of Split Option			
		seconda ryTI								Seconda ry TI Pair Setting			-
		*Same as primaryTI											-
		seconda rySI								Seconda ry SI Pair Setting			-
		*Same as primarySI											-
		tertiaryT I								Tertiary TI Pair Setting			-
		*Same as primaryTI											-
		tertiaryS I								Tertiary SI Pair Setting			-
		*Same as primarySI											-

**Allocate replicated volumes on new copy topology (submit)**

keyName	Type	Explanation	Range
createRemoteCopy.topologySetting.cop yPairSettings.value	file	Storage Settings on Primary site (Model, Serial number)	Same as Edit property

keyName	Type	Explanation	Range
createRemoteCopy.topologySetting.secondary.storageSettings.value	file	Storage Settings on Secondary site (Model, Serial number)	Same as Edit property
createRemoteCopy.topologySetting.tertiary.storageSettings.value	file	Storage Settings on Tertiary site (Model, Serial number)	Same as Edit property
createRemoteCopy.topologySetting.primary.volumeSettings.value	file	Primary Volume Settings	Same as Edit property
createRemoteCopy.topologySetting.primarySI.volumeSettings.value	file	Primary SI Volume Settings	Same as Edit property
createRemoteCopy.topologySetting.primaryTI.volumeSettings.value	file	Primary TI Volume Settings	Same as Edit property
createRemoteCopy.topologySetting.secondary.volumeSettings.value	file	Secondary Volume Settings	Same as Edit property
createRemoteCopy.topologySetting.secondarySI.volumeSettings.value	file	Secondary SI Volume Settings	Same as Edit property
createRemoteCopy.topologySetting.secondaryTI.volumeSettings.value	file	Secondary TI Volume Settings	Same as Edit property
createRemoteCopy.topologySetting.tertiary.volumeSettings.value	file	Tertiary Volume Settings	Same as Edit property
createRemoteCopy.topologySetting.tertiarySI.volumeSettings.value	file	Tertiary SI Volume Settings	Same as Edit property
createRemoteCopy.topologySetting.tertiaryTI.volumeSettings.value	file	Tertiary TI Volume Settings	Same as Edit property
createRemoteCopy.topologySetting.copyPairSettings.value	file	Copy Pair Settings	Same as Edit property



**Allocate replicated volumes on new copy topology (task details)**

<b>keyName</b>	<b>Explanation</b>	<b>Input/Output</b>	<b>Type</b>	<b>Range</b>
createRemoteCopy.taskResult.primarySecondaryRemote.copyGroupInformation	Primary-Secondary Copy Group Configuration Information	Output	File	Same as Allocate like replicated volumes on existing copy topology (task details).
createRemoteCopy.taskResult.primary.lunPathConfigurationInformation	Primary Site/Primary Volume LUN Path Configuration Information	Output	File	Same as Allocate like replicated volumes on existing copy topology (task details).
createRemoteCopy.taskResult.primary.numberOfLdev	Primary Site/Number of Volumes for Primary Volumes	Output	String	The number of the allocated volumes
createRemoteCopy.taskResult.primary.numberOfLunPath	Primary Site/Number of LUN Paths for Primary Volumes	Output	String	The number of paths
createRemoteCopy.taskResult.primarySI.copyGroupInformation	Primary Site/Primary SI Copy Group Configuration Information	Output	File	Same as Allocate like replicated volumes on existing copy topology (task details).
createRemoteCopy.taskResult.primarySI.lunPathConfigurationInformation	Primary Site/Primary SI Volume LUN Path Configuration Information	Output	File	Same as createRemoteCopy.taskResult.primary.lunPathConfigurationInformation

keyName	Explanation	Input/Output	Type	Range
createRemoteCopy.taskResult.primarySI.numberOfLdev	Primary Site/Number of Volumes for Primary SI Volumes	Output	String	The number of the allocated volumes
createRemoteCopy.taskResult.primarySI.numberOfLunPath	Primary Site/Number of LUN Paths for Primary SI Volumes	Output	String	The number of paths
createRemoteCopy.taskResult.primaryTI.copyGroupInformation	Primary Site/primary TI Copy Group Configuration Information	Output	File	Same as createRemoteCopy.taskResult.primarySI.copyGroupInformation
createRemoteCopy.taskResult.primaryTI.lunPathConfigurationInformation	Primary Site/Primary TI Volume LUN Path Configuration Information	Output	File	Same as createRemoteCopy.taskResult.primaryTI.lunPathConfigurationInformation
createRemoteCopy.taskResult.primaryTI.numberOfLdev	Primary Site/Number of Volumes for Primary TI Volumes	Output	String	The number of the allocated volumes
createRemoteCopy.taskResult.primaryTI.numberOfLunPath	Primary Site/Number of LUN Paths for Primary TI Volumes	Output	String	The number of paths
createRemoteCopy.taskResult.primaryTertiaryRemote.copyGroupInformation	Primary-Tertiary Copy Group Configuration Information	Output	File	Same as createRemoteCopy.taskResult.primarySI.copyGroupInformation

keyName	Explanation	Input/Output	Type	Range
createRemoteCopy.taskResult.secondary.lunPathConfigurationInformation	Secondary Site/Primary Volume LUN Path Configuration Information	Output	File	Same as createRemoteCopy.taskResult.primary.lunPathConfigurationInformation
createRemoteCopy.taskResult.secondary.numberOfLdev	Secondary Site/Number of Volumes for Secondary Volumes	Output	String	The number of the allocated volumes
createRemoteCopy.taskResult.secondary.numberOfLunPath	Secondary Site/Number of LUN Paths for Secondary Volumes	Output	String	The number of paths
createRemoteCopy.taskResult.secondarySI.copyGroupInformation	Secondary Site/Secondary SI Copy Group Configuration Information	Output	File	Same as createRemoteCopy.taskResult.primarySI.copyGroupInformation
createRemoteCopy.taskResult.secondarySI.lunPathConfigurationInformation	Secondary Site/Secondary SI Volume LUN Path Configuration Information	Output	File	Same as createRemoteCopy.taskResult.primary.lunPathConfigurationInformation
createRemoteCopy.taskResult.secondarySI.numberOfLdev	Secondary Site/Number of Volumes for Secondary SI Volumes	Output	String	The number of the allocated volumes
createRemoteCopy.taskResult.secondarySI.numberOfLunPath	Secondary Site/Number of LUN Paths for Secondary SI Volumes	Output	String	The number of paths

keyName	Explanation	Input/Output	Type	Range
createRemoteCopy.taskResult.secondaryTI.copyGroupInformation	Secondary Site/Secondary TI Copy Group Configuration Information	Output	File	Same as createRemoteCopy.taskResult.primarySI.copyGroupInformation
createRemoteCopy.taskResult.secondaryTI.lunPathConfigurationInformation	Secondary Site/Secondary TI Volume LUN Path Configuration Information	Output	File	Same as createRemoteCopy.taskResult.primary.lunPathConfigurationInformation
createRemoteCopy.taskResult.secondaryTI.numberOfDev	Secondary Site/Number of Volumes for Secondary TI Volumes	Output	String	The number of the allocated volumes
createRemoteCopy.taskResult.secondaryTI.numberOfLunPath	Secondary Site/Number of LUN Paths for Secondary TI Volumes	Output	String	The number of paths
createRemoteCopy.taskResult.secondaryTertiaryRemote.copyGroupInformation	Secondary-Tertiary Copy Group Configuration Information	Output	File	Same as createRemoteCopy.taskResult.primarySI.copyGroupInformation
createRemoteCopy.taskResult.tertiary.lunPathConfigurationInformation	Tertiary Site/Tertiary Volume LUN Path Configuration Information	Output	File	Same as createRemoteCopy.taskResult.primary.lunPathConfigurationInformation
createRemoteCopy.taskResult.tertiary.numberOfDev	Tertiary Site/Number of Volumes for Tertiary Volumes	Output	String	The number of the allocated volumes

keyName	Explanation	Input/Output	Type	Range
createRemoteCopy.taskResult.tertiary.numberOfLunPath	Tertiary Site/Number of LUN Paths for Tertiary Volumes	Output	String	The number of paths
createRemoteCopy.taskResult.tertiarySI.copyGroupInformation	Tertiary Site/Tertiary SI Copy Group Configuration Information	Output	File	Same as createRemoteCopy.taskResult.primarySI.copyGroupInformation
createRemoteCopy.taskResult.tertiarySI.lunPathConfigurationInformation	Tertiary Site/Tertiary SI Volume LUN Path Configuration Information	Output	File	Same as createRemoteCopy.taskResult.primary.lunPathConfigurationInformation
createRemoteCopy.taskResult.tertiarySI.numberOfLdev	Tertiary Site/Number of Volumes for Tertiary SI Volumes	Output	String	The number of the allocated volumes
createRemoteCopy.taskResult.tertiarySI.numberOfLunPath	Tertiary Site/Number of LUN Paths for Tertiary SI Volumes	Output	String	The number of paths
createRemoteCopy.taskResult.tertiaryTI.copyGroupInformation	Tertiary Site/Tertiary TI Copy Group Configuration Information	Output	File	Same as createRemoteCopy.taskResult.primarySI.copyGroupInformation
createRemoteCopy.taskResult.tertiaryTI.lunPathConfigurationInformation	Tertiary Site/Tertiary TI Volume LUN Path Configuration Information	Output	File	Same as createRemoteCopy.taskResult.primary.lunPathConfigurationInformation

keyName	Explanation	Input/Output	Type	Range
createRemoteCopy.taskResult.tertiaryTI.numberOfLdev	Tertiary Site/Number of Volumes for Tertiary TI Volumes	Output	String	The number of the allocated volumes
createRemoteCopy.taskResult.tertiaryTI.numberOfLunPath	Tertiary Site/Number of LUN Paths for Tertiary TI Volumes	Output	String	The number of paths
service.errorMessage	Error message	Output	String	Summary information of error messages

## Allocate fabric aware volumes service properties

Use the following properties to modify or create values for the allocate fabric aware volumes service.



**Note:** The term "VSP Gx00 models" refers to the Virtual Storage Platform G200, G400, G600, G800 product models. The term "VSP Fx00 models" refers to the Virtual Storage Platform F400, F600, F800 product models.

## Allocate fabric aware volumes (edit)

key Name	Explanation	Type	Range
provisioning.advancedOption.advancedOptions.value	Advanced Option information.	File	-
provisioning.volumeSetting.volumeSettings.value	Volume Setting information in Edit service.	File	-
provisioning.advancedOption.advancedOptions.value	Advanced Option information.	File	-
provisioning.resourceCriteria.resourceSelectionCriteria.volumeUsageSpecific.value	Criteria information in Edit service.	File	-

key Name	Explanation	Type	Range
provisioning.hostSetting.hostsFilter.value	The target host name to allocate volume.	File	-
provisioning.hostSetting.targetHosts.value		File	-
provisioning.fabricSetting.enabled	Specifying 'true' enables fabric information collection functionality.	boolean	-
provisioning.fabricSetting.connection.type (hidden)	This property defines connection type information. <b>Caution:</b> Do not change this property. If you change it, the service might fail.	list	BNA only
provisioning.fabricSetting.connection.productName (hidden)	Specifies the product name defined in the General Connections on the Administration Tab.	string	-

key Name	Explanation	Type	Range
provisioning.fabricSetting.connection.names	Specifies 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.	string	-
provisioning.fabricSetting.resourcegroups	Specifies the switch management server resource group. Separate multiple values by commas.	string	-
provisioning.fabricSetting.fabrics	Specifies the fabric name. Separate multiple values by commas. If this value is omitted, the system uses all the fabrics that the BNA monitors.	string	-



key Name	Explanation	Type	Range
provisioning.fabricSetting.usingExistingZone	Specifies the fabric name. Separate multiple values by commas. If this value is omitted, the system uses all the fabrics that the BNA monitors.	boolean	-
provisioning.fabricSetting.usingActiveZonesOnly (hidden)	Specifying 'true' selects paths with an active Zone setting only. Specifying False selects connectable paths including those with an inactive Zone setting.	boolean	-
provisioning.fabricSetting.hops.restriction	Specify 'true' if you want to add a Zone to the active Zone Configuration.	boolean	-
provisioning.fabricSetting.hops.range	When using the Host Restriction option, specify the collection range by the number of hops.	integer	0 only
provisioning.zoneSetting.enabled	Specify 'true' to enable modify zone settings functionality.	boolean	-

key Name	Explanation	Type	Range
provisioning.zoneSetting.useExistingZoneAliases	<p>Specify 'true' to use predefined Zone Aliases regardless of the naming conventions the user specifies.</p> <p>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. When selecting the existing Zone Alias, Zone naming is fixed as &lt;HostZoneAliasName&gt;_&lt;StorageZoneAliasName&gt;.</p> <p><b>Note:</b> If the service finds more than one alias candidate which have the same WWN, the alias is chosen based on the following priorities:</p>	boolean	-

key Name	Explanation	Type	Range
	<ol style="list-style-type: none"> <li>1. Search existing aliases which only have that WWN. If more than one alias is found, the system selects the first alias in the list of existing aliases.</li> <li>2. If no alias is found using the first priority, search existing aliases which have multiple WWNs including that WWN. If more than one alias is found, the system selects the first alias in the list of existing aliases.</li> </ol>		

key Name	Explanation	Type	Range
provisioning.zoneSetting.updateActiveZoneConfiguration	Specify 'true' if you want to add a Zone to the active Zone Configuration.	boolean	-
provisioning.zoneSetting.zoneConfigurationName	Specify the name of Zone Configuration to add if you want to add a Zone other than the active Zone Configuration.	string	-
provisioning.zoneSetting.namingScript.zone (hidden)	Specifies the script of the naming convention which determines the Zone name to the path.	file	Refer to the Script example below
provisioning.zoneSetting.namingScript.hostZoneAlias (hidden)	Specifies the script of the naming convention which determines the Zone name to the host port.	file	Refer to the Script example below
provisioning.zoneSetting.namingScript.storageZoneAlias (hidden)	Specifies the script of the naming convention which determines the Zone name to the host port.	file	Refer to the Script example below

**Table 153 provisioning.zoneSetting.expression.zone /  
provisioning.zoneSetting.namingExpression.hostZoneAlias/  
provisioning.zoneSetting.naming.Expression.storageZoneAlias**

Specifications of the script	Explanation
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> <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>

Specifications of the script	Explanation
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 may be up to 60 characters, Zone Alias may 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>

Specifications of the script	Explanation
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 fabric aware volumes (submit)

key Name	Explanation	Type	Range
provisioning.volumeSetting.volumeSettings.value	Volume setting information.	File	-
provisioning.resourceCriteria.resourceSelectionCriteria.volumeUsageSpecific.value	Criteria information in Edit service.	File	-
provisioning.hostSetting.targetHosts.value	The target host name to allocate volume.	File	-

## Allocate fabric aware volumes (task details)

Use the following information to show the task details of allocated fabric aware volumes.

keyName	Explanation	Input/Output	Type	Range
provisioning.taskResult.lunPathConfigurationInformation	The task result.	Output	File	See the "File type property list" section following this table.
provisioning.taskResult.NumberOfLunPath	The task result.	Output	File	Number of paths that allocated.
provisioning.taskResultRawData.lunPaths	The task result.	Output	String	See the "File type property list" section following this table.
provisioning.taskResultRawData.ldevs	The task result.	Output	File	See the "File type property list" section following this table.



keyName	Explanation	Input/Output	Type	Range
provisioning.taskResult.storageArrayInfo	The task result.	Output	File	See the "File type property list" section following this table.
addhost.hostSetting.targetHostsOut.value	See <a href="#">Allocate volumes (task details) (on page 447)</a>	Output	File	See <a href="#">Allocate volumes (task details) (on page 447)</a>
provisioning.taskResult.fabricNames	A list of fabric names used when the path was selected (fabric names are separated by commas).	Output	string	-
provisioning.taskResult.zoneNames	A list of zone names used when the path was selected (zone names are separated by commas).	Output	string	-
provisioning.taskResult.createdZoneConfigurations	List of newly created Zone Configurations.	Output	File	See the "File type property list" section following this table.
provisioning.taskResult.createdZones	List of newly created Zones.	Output	File	See the "File type property list" section following this table.

keyName	Explanation	Input/Output	Type	Range
provisioning.taskResult.createdZoneAliases	List of newly created Zone Aliases.	Output	File	See the "File type property list" section following this table.
provisioning.taskResult.updatedZoneConfigurations	List of Zone Configurations where the settings were updated.	Output	File	See the "File type property list" section following this table.
provisioning.taskResult.updatedZones	List of Zones where the settings were updated.	Output	File	See the "File type property list" section following this table.
provisioning.taskResult.updatedZoneAliases	List of Zone Aliases where the settings were updated.	Output	File	See the "File type property list" section following this table.

### File type property list



**Note:** \*1 : Repeatable items must be repeated and must include all lower layer tags.

**Table 154 provisioning.taskResult.lunPathConfigurationInformation**

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		Run result.	-	-	Yes.
	usage	Volume Usage name.	-	-	
	host	Host name.	-	-	
	hostPort	Host port name.	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	lun	LUN.	-	-	
	storagePort	Port ID.	-	-	
	portName	Storage port name.	-	-	
	portType	Port type (FC or iSCSI).	-	-	
	volume	LDEV ID.	-	-	
	dpPool	Pool ID.	-	-	
	dpPoolName	Pool Name.	-	-	
	storageSystem	Storage Array name.	-	-	
	provisionedCapacity	Create volume capacity.	-	-	
	capacity	Volume capacity when you submit.	-	-	
	hostGroup	Host Group name.	-	-	
	deviceManagerTaskName	Task Name of Device Manager.	-	-	
	deviceManagerName	Device Manager that ran the task.	-	-	
	virtualStorageSystemName	Virtual storage system name.	-	-	
	virtualStorageSystemType	Type of virtual storage system.	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	virtualSerialNumber	Serial number of virtual storage system.	-	-	
	virtualLdevId	Virtual LDEV ID.	-	-	
	resourceGroupName	Resource Group name.	-	-	
	infrastructureGroupName	Infrastructure Group name.	-	-	
*1 : Repeatable items must be repeated and must include all lower layer tags.					

Table 155 provisioning.taskResultRawData.ldevs

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values		Result of allocated volume	-	-	yes
	usage	Created DP/DT volume's LDEV ID	-	-	
	deviceId	Created DP/DT volume's LDEV ID	-	-	
	storageSystemType	Display Array Type of the target storage which volume has been allocated.	-	-	
	storageSystemSerialNumber	Serial Number of the target storage which volume has been allocated.	-	-	
	deviceManagerName	Device Manager name which manages the storage system that has the created volume.	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	displayUnit	Unit name string for displaying volume capacity size.	block/KB/MB /GB/TB	-	
	virtualSerialNumber	Virtual serial Number of the selected virtual storage system.	-	-	
	virtualLdevId	Created virtual DP/DT volume's LDEV ID	-	-	
*1 : Repeatable items must be repeated and must include all lower layer tags.					

Table 156 provisioning.taskResultRawData.lunPaths

Data nesting information		Explanation	Range	Remarks	Repeatable *1
values			-	-	Yes
	usage	Volume usage	-	-	
	hostName	Host Name	-	-	
	hostPortName	Host port name	-	-	
	hostStorageDomainName	Host Storage Domain name	-	-	
	hostStorageDomainId	Host Storage Domain ID	-	-	
	lun	LUN Number	-	-	
	portWorldWideName	Storage Port WWN	-	-	
	targetIscsiName	iSCSI name	-	-	
	portName	Storage system's port name	-	-	
	portType	Port Type of storage system (FC or iSCSI)	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	portObjectId	Port Object ID of Storage system	-	-	
	portId	Port ID of storage system	-	-	
	ldevNumber	LDEV number	-	-	
	ldevLabel	LDEV Label	-	-	
	dpPoolId	Pool ID	-	-	
	storageSystemName	Storage System name	-	-	
	storageSystemModel	Model name of Storage system	-	-	
	family	Array Family of Storage system	-	-	
	storageSystemSerialNumber	Serial Number of storage system	-	-	
	capacity	Volume Capacity	-	-	
	unit	Unit of volume capacity for display	-	-	
	provisionedCapacityInBlock	Created volume capacity(in number of Block)	-	-	
	pairVolumeType	Volume's pair type (P or S)	-	-	
	volLdevId	LDEV ID	-	-	
	volLuNumber	LU number	-	-	
	deviceManagerTaskName	Device Manager task name	-	-	
	deviceManagerName	Device Manager name	-	-	
	virtualStorageSystemName	Virtual storage array name	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable *1
	virtualStorageSystemType	Display name of virtual storage array's virtual model (Array Type)	-	-	
	virtualSerialNumber	Serial Number of virtual storage array	-	-	
	virtualLdevId	Virtual LDEV ID	-	-	
*1 : Repeatable items must be repeated and must include all lower layer tags.					

**Table 157 provisioning.taskResult.zoneConfiguration**

Data nesting information		Explanation	Range	Remarks	Repeatable
values		List of newly created Zone Configuration	-	8.5.0 or later	0
	name	Name of newly created Zone Configuration name	-	8.5.0 or later	-
	bnaname	Name of BNA that manages the settings	-	8.5.0 or later	-
	fabricName	Name of Fabric where the settings exist	-	8.5.0 or later	-
	zoneNames	Zone to add to the created Zone Configuration	-	8.5.0 or later	0

**Table 158 provisioning.taskResult.createdZones**

Data nesting information		Explanation	Range	Remarks	Repeatable
values		List of newly created zone		8.5.0 or later	0
	name	'Name of newly created zone	-	8.5.0 or later	-
	bnaname	Name of BNA that manages the settings	-	8.5.0 or later	-
	fabricName	Name of Fabric where the settings exist	-	8.5.0 or later	-
	Zone Alias to add to the created Zone	Zone to add to the created Zone Configuration	-	8.5.0 or later	0
	memberNames	WWN of the port added to the created Zone	-	8.5.0 or later	0

**Table 159 provisioning.taskResult.createdZoneAliases**

Data nesting information		Explanation	Range	Remarks	Repeatable
values		List of newly created Zone alias		8.5.0 or later	0
	name	Name of newly created zone alias	-	8.5.0 or later	-
	bnaname	Name of BNA that manages the settings	-	8.5.0 or later	-
	fabricName	Name of Fabric where the settings exist	-	8.5.0 or later	-
	memberNames	WWN of the port added to the created Zone	-	8.5.0 or later	0



**Table 160 provisioning.taskResult.updatedZoneConfigurations**

Data nesting information		Explanation	Range	Remarks	Repeatable
values		Zone to add to the created Zone Configuration		8.5.0 or later	0
	name	Name of updated zone configuration	-	8.5.0 or later	-
	bnaname	Name of BNA that manages the settings	-	8.5.0 or later	-
	fabricName	Name of Fabric where the settings exist	-	8.5.0 or later	-
	zoneNames	Name of added zone	-	8.5.0 or later	0

**Table 161 provisioning.taskResult.updatedZones**

Data nesting information		Explanation	Range	Remarks	Repeatable
values		List of zones where the settings were updated		8.5.0 or later	0
	name	Name of zone where settings were updated	-	8.5.0 or later	-
	bnaname	Name of BNA that manages the settings	-	8.5.0 or later	-
	fabricName	Name of Fabric where the settings exist	-	8.5.0 or later	-
	aliasNames	Name of added Zone alias	-	8.5.0 or later	0
	memberNames	WWN of the added port	-	8.5.0 or later	0

**Table 162 provisioning.taskResult.updatedZoneAliases**

Data nesting information		Explanation	Range	Remarks	Repeatable
values		List of Zone alias where settings were updated		8.5.0 or later	0
	name	Name of Zone alias where settings were updated	-	8.5.0 or later	-
	bnaname	Name of BNA that manages the settings	-	8.5.0 or later	-
	fabricName	Name of Fabric where the settings exist	-	8.5.0 or later	-
	memberNames	WWN of added port	-	8.5.0 or later	0

## 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	Remark	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.	-	-

keyName	Type	Description	Range	Remark	Default value
ResourceGroup	File	Specify the Resource Group.	See the "File type property list" section following this table.	-	-
NumberOfVolumes	Integer	Specify the number of volumes.	1-500	-	1
LDEVIDStartsFrom	Integer	Specify the startup LDEV ID for the volume to allocated.	0-FEFF	-	0
VolumeCapacity	Integer	Specify the volume capacity.	Refer to the <i>capacity</i> row in the <i>AddVirtualVolume command parameters</i> table in Hitachi Automation Director CLI Reference Guide.	-	-
Pool	File	Specify the pool.	See the "File type property list" section following this table.	-	-
VolumeLabel	String	Specify the volume label.	A maximum of 64 characters can be entered.	-	-
LUN Starts from	Integer	Specify the starting logical unit number assigned to the volume for a host.	0-07FF	-	0

keyName	Type	Description	Range	Remark	Default value
VirtualLDEVIDStartsFrom	Integer	Specify the startup Virtual LDEV ID for the volume to allocated.	0-FEFF	-	-
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 in order 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"

keyName	Type	Description	Range	Remark	Default value
provisioning.fabricSetting.connection.names	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.	-	-	-
provisioning.fabricSetting.resourcegroups	String	Specify the switch management server resource group. Separate multiple values by commas.	-	-	-

keyName	Type	Description	Range	Remark	Default value
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.	-	-	-
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.hops.restriction	Boolean	Determines whether the service will fail if there is no path that matches the specified collection range.	-	-	"False"

keyName	Type	Description	Range	Remark	Default value
provisioning.fabricSetting.hops.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"
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"

keyName	Type	Description	Range	Remark	Default value
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.	-	-	Refer to the Script example below.
provisioning.zoneSetting.namingScript.hostZoneAlias	File	Specify the naming convention script that determines the Zone Alias name for the host port.	-	-	Refer to the Script example below.
provisioning.zoneSetting.namingScript.storageZoneAlias	File	Specify the naming convention script that determines the Zone Alias name for the storage port.	-	-	Refer to the Script example below.



**Table 163 provisioning.zoneSetting.expression.zone/  
provisioning.zoneSetting.namingExpression.hostZoneAlias/  
provisioning.zoneSetting.naming.Expression.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	<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. Only alphanumeric characters and "_" are allowed.</li> <li>2. The first character must be alphabetic.</li> <li>3. Zone may be up to 60 characters, Zone Alias may 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>

Specifications of the script	Explanation
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>

**File type property list**

**Table 164 ConfigurationManagerConnection**

Data nesting information		Description	Range	Remarks	Repeatable
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 165 StorageSystem**

Data nesting information		Description	Range	Remarks	Repeatable
values					
	storageDeviceId	Storage Device ID.	-	-	-
	model	Model.	-	-	-
	serialNumber	Serial Number.	-	-	-
	svplp	SVP IP Address.	-	-	-

**Table 166 ResourceGroup**

Data nesting information		Description	Range	Remarks	Repeatable
values					

Data nesting information		Description	Range	Remarks	Repeatable
	resourceGroupId	Resource Group ID.	-	-	-
	resourceGroupName	Resource Group Name.	-	-	-
	virtualStorageId	Virtual Storage System ID.	-	-	-

**Table 167 Pool**

Data nesting information		Description	Range	Remarks	Repeatable
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 168 ResourceCriteria**

Data nesting information		Description	Range	Remarks	Repeatable
values					
	storagePortCriteria	Storage Port Criteria.	-	-	-
	condition	Condition.	-	-	-
	expressions	Expression.	-	-	Yes.
	name	Name.	"Name".	-	-

Data nesting information		Description	Range	Remarks	Repeatable
	op	Operation.	"Equals", "Not Equals", "Starts With", "Ends With".	-	-
	value	Value.	-	-	-
	join	Join condition of the Expressions.	"All", "Any".	-	-

**Table 169 HostGroupSettings**

Data nesting information		Description	Range	Remarks	Repeatable
values					Yes.
	hostGroup name	Host Group name.	A maximum of 64 characters can be entered.	When "PortType" is "Fibre", hostGroup Name can be specified.	-
	iScsiTargetName	iSCSI target name.	A maximum of 32 characters can be entered.	When "PortType" is "iSCSI", iScsiTarget Name can be specified.	-
	wwnSettings	WWN settings.		When "PortType" is "Fibre", wwnSettings can be specified.	Yes.

Data nesting information	Description	Range	Remarks	Repeatable
wwn	WWN.	A maximum of 16 characters is allowed in hexadecimal.	-	-
wwnNickname	WWN nickname.	A maximum of 64 characters can be entered.	-	-
iScsiSettings	iSCSI settings.		When "PortType" is "iSCSI", iScsiSettings can be specified.	Yes.
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."	-	-

Data nesting information	Description	Range	Remarks	Repeatable
iScsiNickName	iSCSI nickname.	A maximum of 32 characters can be entered.	-	-
hostMode	Host Mode.	"HP-UX", "SOLARIS", "AIX", "WIN", "LINUX/IRIX", "TRU64", "OVMS", "NETWARE", "VMWARE", "VMWARE_EX", "WIN_EX"	Refer to <i>Values that can be specified in the hostmode parameter</i> in the Hitachi Command Suite CLI Reference Guide.	-
hostMode Options	Host Mode options.	Refer to "Values that can be specified in the hostmodeoptions parameter" in the Hitachi Command Suite CLI Reference Guide.	-	-

**Allocate fabric aware volumes with Configuration Manager (submit)**

keyName	Type	Description	Range	Remark	Default value
ConfigurationManager Connection	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.	-	-
NumberOfVolumes	Integer	Specify the number of volumes.	1-500	-	1
LDEVIDStartsFrom	Integer	Specify the startup LDEV ID for the volume to allocated.	0-FEFF	-	0
VolumeCapacity	Integer	Specify the volume capacity.	Refer to the <i>capacity</i> raw in the <i>AddVirtualVolume command parameters</i> table in Hitachi Automation Director CLI Reference Guide.	-	-
Pool	File	Specify the pool.	See the "File type property list" section following this table.	-	-



keyName	Type	Description	Range	Remark	Default value
VolumeLabel	String	Specify the volume label.	A maximum of 64 characters can be entered.	-	-
LUN Starts from	Integer	Specify the starting logical unit number assigned to the volume for a host.	0-07FF	-	0
VirtualLDEVIDStartsFrom	Integer	Specify the startup Virtual LDEV ID for the volume to allocated.	0-FEFF	-	-
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 in order to create a new Host Group/ iSCIS Target.	See the "File type property list" section following this table.	-	-

**File type property list**

**Table 170 ConfigurationManagerConnection**

Data nesting information	Description	Range	Remarks	Repeatable
values				

Data nesting information		Description	Range	Remarks	Repeatable
	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 171 StorageSystem**

Data nesting information		Description	Range	Remarks	Repeatable
values					
	storageDeviceId	Storage Device ID.	-	-	-
	model	Model.	-	-	-
	serialNumber	Serial Number.	-	-	-
	svplp	SVP IP Address.	-	-	-

**Table 172 ResourceGroup**

Data nesting information		Description	Range	Remarks	Repeatable
values					
	resourceGroupId	Resource Group ID.	-	-	-

Data nesting information		Description	Range	Remarks	Repeatable
	resourceGroupName	Resource Group Name.	-	-	-
	virtualStorageId	Virtual Storage System ID.	-	-	-

**Table 173 Pool**

Data nesting information		Description	Range	Remarks	Repeatable
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 174 ResourceCriteria**

Data nesting information		Description	Range	Remarks	Repeatable
values					
	storagePortCriteria	Storage Port Criteria.	-	-	-
	condition	Condition.	-	-	-
	expressions	Expression.	-	-	Yes.
	name	Name.	"Name".	-	-

Data nesting information		Description	Range	Remarks	Repeatable
	op	Operation.	"Equals", "Not Equals", "Starts With", "Ends With".	-	-
	value	Value.	-	-	-
	join	Join condition of the Expressions.	"All", "Any".	-	-

**Table 175 HostGroupSettings**

Data nesting information		Description	Range	Remarks	Repeatable
values					Yes.
	hostGroup name	Host Group name.	A maximum of 64 characters can be entered.	When "PortType" is "Fibre", hostGroup Name can be specified.	-
	iScsiTargetName	iSCSI target name.	A maximum of 32 characters can be entered.	When "PortType" is "iSCSI", iScsiTarget Name can be specified.	-
	wwnSettings	WWN settings.		When "PortType" is "Fibre", wwnSettings can be specified.	Yes.

Data nesting information	Description	Range	Remarks	Repeatable
wwn	WWN.	A maximum of 16 characters is allowed in hexadecimal.	-	-
wwnNickname	WWN nickname.	A maximum of 64 characters can be entered.	-	-
iScsiSettings	iSCSI settings.		When "PortType" is "iSCSI", iScsiSettings can be specified.	Yes.
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."	-	-

Data nesting information	Description	Range	Remarks	Repeatable
iScsiNickName	iSCSI nickname.	A maximum of 32 characters can be entered.	-	-
hostMode	Host Mode.	"HP-UX", "SOLARIS", "AIX", "WIN", "LINUX/IRIX", "TRU64", "OVMS", "NETWARE", "VMWARE", "VMWARE_EX", "WIN_EX"	Refer to <i>Values that can be specified in the hostmode parameter</i> in the Hitachi Command Suite CLI Reference Guide.	-
hostMode Options	Host Mode options.	Refer to "Values that can be specified in the hostmodeoptions parameter" in the Hitachi Command Suite CLI Reference Guide.	-	-

## 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	Remark	Default value
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 newly created Zone.	-	-	-
provisioning.taskResult.createdZones	File	List of newly created Zones.	-	-	-
provisioning.taskResult.createdZoneAliases	File	Stores the newly created zone aliases.	-	-	-
provisioning.taskResult.updatedZoneConfigurations	File	Stores the newly created zone aliases.	-	-	-
provisioning.taskResult.updatedZones	File	Stores the newly created zone aliases.	-	-	-
provisioning.taskResult.updatedZoneAliases	File	Stores the newly created zone aliases.	-	-	-

**File type property list**

**Table 176 LUNPathConfigurationInformation**

Data nesting information	Description	Range	Remarks	Repeatable
value				Yes.
storageDeviceId	Storage device ID.	-	-	-
hostPort	WWN/iSCSI name.	-	-	-
storagePort	Storage port.	-	-	-

<b>Data nesting information</b>	<b>Description</b>	<b>Range</b>	<b>Remarks</b>	<b>Repeatable</b>
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.	-	-	-



**Table 177 provisioning.taskResult.zoneConfiguration**

Data nesting information		Explanation	Range	Remarks	Repeatable
values		List of newly created Zone Configuration	-	8.5.0 or later	0
	name	Name of newly created Zone Configuration name	-	8.5.0 or later	-
	bnaname	Name of BNA that manages the settings	-	8.5.0 or later	-
	fabricName	Name of Fabric where the settings exist	-	8.5.0 or later	-
	zoneNames	Zone to add to the created Zone Configuration	-	8.5.0 or later	0

**Table 178 provisioning.taskResult.createdZones**

Data nesting information		Explanation	Range	Remarks	Repeatable
values		List of newly created zone		8.5.0 or later	0
	name	'Name of newly created zone	-	8.5.0 or later	-
	bnaname	Name of BNA that manages the settings	-	8.5.0 or later	-
	fabricName	Name of Fabric where the settings exist	-	8.5.0 or later	-
	Zone Alias to add to the created Zone	Zone to add to the created Zone Configuration	-	8.5.0 or later	0

Data nesting information		Explanation	Range	Remarks	Repeatable
	memberNames	WWN of the port added to the created Zone	-	8.5.0 or later	0

**Table 179 provisioning.taskResult.createdZoneAliases**

Data nesting information		Explanation	Range	Remarks	Repeatable
values		List of newly created Zone alias		8.5.0 or later	0
	name	Name of newly created zone alias	-	8.5.0 or later	-
	bnaname	Name of BNA that manages the settings	-	8.5.0 or later	-
	fabricName	Name of Fabric where the settings exist	-	8.5.0 or later	-
	memberNames	WWN of the port added to the created Zone	-	8.5.0 or later	0

**Table 180 provisioning.taskResult.updatedZoneConfigurations**

Data nesting information		Explanation	Range	Remarks	Repeatable
values		Zone to add to the created Zone Configuration		8.5.0 or later	0
	name	Name of updated zone configuration	-	8.5.0 or later	-
	bnaname	Name of BNA that manages the settings	-	8.5.0 or later	-
	fabricName	Name of Fabric where the settings exist	-	8.5.0 or later	-

Data nesting information		Explanation	Range	Remarks	Repeatable
	zoneNames	Name of added zone	-	8.5.0 or later	0

**Table 181 provisioning.taskResult.updatedZones**

Data nesting information		Explanation	Range	Remarks	Repeatable
values		List of zones where the settings were updated		8.5.0 or later	0
	name	Name of zone where settings were updated	-	8.5.0 or later	-
	bnaName	Name of BNA that manages the settings	-	8.5.0 or later	-
	fabricName	Name of Fabric where the settings exist	-	8.5.0 or later	-
	aliasNames	Name of added Zone alias	-	8.5.0 or later	0
	memberNames	WWN of the added port	-	8.5.0 or later	0

**Table 182 provisioning.taskResult.updatedZoneAliases**

Data nesting information		Explanation	Range	Remarks	Repeatable
values		List of Zone alias where settings were updated		8.5.0 or later	0
	name	Name of Zone alias where settings were updated	-	8.5.0 or later	-
	bnaName	Name of BNA that manages the settings	-	8.5.0 or later	-

Data nesting information		Explanation	Range	Remarks	Repeatable
	fabricName	Name of Fabric where the settings exist	-	8.5.0 or later	-
	memberNames	WWN of added port	-	8.5.0 or later	0

## Allocate volumes from virtual storage machine service properties

Use the following properties to modify or create values for the allocate volumes from virtual storage machine service.



**Note:** The term "VSP Gx00 models" refers to the Virtual Storage Platform G200, G400, G600, G800 product models. The term "VSP Fx00 models" refers to the Virtual Storage Platform F400, F600, F800 product models.

## Allocate volumes from virtual storage machine (edit)

key Name	Explanation	Input/Output	Type	Range	Default value
ConfigurationManagerConnection	Configuration Manager Connection.	Input	File	See the "File type property list" section following this table.	
StorageSystem	Storage System.	Input	File	See the "File type property list" section following this table.	
VirtualStorageMachine	Virtual Storage Machine.	Input	string	Virtual Storage Machine specified in Shared Properties.	
NumberOfVolumes	Number of Volumes.	Input	integer	1-500.	

key Name	Explanation	Input/Output	Type	Range	Default value
LDEVIDStartsFrom	Starting number of LDEVID.	Input	integer	00:00:00-00:FE:FF.	
VolumeCapacity	Volume capacity.	Input	integer	Refer to the "capacity" row in the "AddVirtualVolume command parameters" table in the Hitachi Command Suite CLI Reference Guide.	
Pool	Pool.	Input	File	See the "File type property list" section following this table.	
VolumeLabel	Volume level.	Input	string	Enter a maximum of 64 characters.	
LUN Starts from	Starting number of LUN.	Input	integer	0-07FF.	
ExistingOrCreateNew	Existing or Create new.	Input	string	"Existing Host Group/iSCSI Target" or "New Host Group/iSCSI Target".	Existing Host Group/iSCSI Target
ExistingHostGroupsOrISCSITargets	Existing Host Groups or iSCSI Targets.	Input	File	See the "File type property list" section following this table.	
PortType	Port Type.	Input	string	"Fibre" or "iSCSI".	Fibre

key Name	Explanation	Input/Output	Type	Range	Default value
HostGroupSettings	Host Group Settings which created new.	Input	File	See the "File type property list" section following this table.	
ReservationTargets	Reservation Targets.	Input	File	See the "File type property list" section following this table.	

**File type property list**

**Table 183 ConfigurationManagerConnection**

Data nesting information		Explanation	Range	Remarks	Repeatable
values					
	productName	Product name to register to the Web Service Connection	"Configuration Manager"	-	
	name	Name	-	-	
	ipAddress	IpAddress	-	-	
	Port	Port	-	-	
	protocol	Protocol	-	-	
	userID	UserID	-		
	status	Status of the connection	-	-	
	connectedTime	Connected time	-	-	

**Table 184 StorageSystem**

Data nesting information		Explanation	Range	Remarks	Repeatable
values					

Data nesting information		Explanation	Range	Remarks	Repeatable
	storageDeviceId	Storage Device ID	-	-	
	model	Model	-	-	
	serialNumber	Serial Number	-	-	
	svplp	SVP IP Address	-	-	

**Table 185 ReservationTargets**

Data nesting information		Explanation	Range	Remarks	Repeatable
values					yes
	configurationManagerConnection	Configuration Manager Connection			
	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 the connection	-	-	
	connectedTime	Connected time	-	-	
	storageSystem	Storage System	-	-	
	storageDeviceId	Storage Device ID	-	-	
	model	Model	-	-	
	serialNumber	Serial Number	-	-	
	svplp	SVP IP Address	-	-	

**Table 186 ExistingHostGroupsOriSCSITargets**

Data nesting information		Explanation	Range	Remarks	Repeatable
values					yes
	storageDeviceId	Storage Device ID	-	-	
	portId	Port ID	-	-	
	hostGroupNumber	Host Group number	-	-	
	hostGroupName	Host Group name	-	-	
	iscsiName	iSCSI name	-	-	
	hostMode	Host Mode	-	-	

**Table 187 Pool**

Data nesting information		Explanation	Range	Remarks	Repeatable
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 188 HostGroupSettings**

Data nesting information		Explanation	Range	Remarks	Repeatable
values					yes
	port	Port	-	-	



Data nesting information		Explanation	Range	Remarks	Repeatable
	wwnSettings	WWN Settings		When "PortType" is "Fibre", you can specify WWN Settings.	yes
	wwn	WWN	Enter a maximum of 16 characters in hexadecimal format.	-	
	wwnNickname	WWN Nickname	Enter a maximum of 64 characters.	-	
	hostGroupName	Host Group name	Enter a maximum of 64 characters.	When "PortType" is "Fibre", you can specify hostGroupName.	
	iScsiSettings	iScsiSettings	-	When "PortType" is "iSCSI", you can specify iSCSI Settings.	yes

Data nesting information		Explanation	Range	Remarks	Repeatable
	iScsiName	iSCSI name	Specify in iqn 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	Enter a maximum of 32 characters.	-	
	iScsiTargetName	iSCSI Target Name	Enter a maximum of 32 characters	When "PortType" is "iSCSI", you can specify iSCSI Target Name.	
	hostMode	Host Mode	Refer to "Values that can be specified in the hostmode parameter" in the Hitachi Command Suite CLI Reference Guide.	-	

Data nesting information		Explanation	Range	Remarks	Repeatable
	hostModeOptions	Host Mode Options	Refer to "Values that can be specified in the hostmodeoptions parameter" in the Hitachi Command Suite CLI Reference Guide.	-	

### Allocate volumes from virtual storage machine (submit)

key Name	Explanation	Input/Output	Type	Range	Default value
ConfigurationManagerConnection	Configuration Manager Connection	Input	File	See the "File type property list" section following this table.	
StorageSystem	Storage System.	Input	File	See the "File type property list" section following this table.	
VirtualStorageeMachine	Virtual Storage Machine.	Input	string	Virtual Storage Machine specified in Shared Properties.	
NumberOfVolumes	Number of Volumes.	Input	integer	1-500.	

key Name	Explanation	Input/Output	Type	Range	Default value
LDEVIDStarts From	Starting number of LDEVID.	Input	integer	00:00:00-00:FE:FF.	
VolumeCapacity	Volume capacity.	Input	integer	Refer to the "capacity" row in the "AddVirtualVolume command parameters" table in the Hitachi Command Suite CLI Reference Guide.	
Pool	Pool.	Input	File	See the "File type property list" section following this table.	
VolumeLabel	Volume level.	Input	string	Enter a maximum of 64 characters.	
LUN Starts from	Starting number of LUN.	Input	integer	0-07FF.	
ExistingOrCreateNew	Existing or Create new.	Input	string	"Existing Host Group/iSCSI Target" or "New Host Group/iSCSI Target".	Existing Host Group/iSCSI Target
ExistingHostGroupsOrISCSITargets	Existing Host Groups or iSCSI Targets.	Input	File	See the "File type property list" section following this table.	

key Name	Explanation	Input/Output	Type	Range	Default value
PortType	Port Type.	Input	string	"Fibre" or "iSCSI".	Fibre
HostGroupSettings	Host Group Settings which created new.	Input	File	See the "File type property list" section following this table.	
ReservationTargets	Reservation Targets.	Input	File	See the "File type property list" section following this table.	

**File type property list**

**Table 189 ConfigurationManagerConnection**

Data nesting information		Explanation	Range	Remarks	Repeatable
values					
	productName	Product name to register to the Web Service Connection	"Configuration Manager"	-	
	name	Name	-	-	
	ipAddress	IpAddress	-	-	
	Port	Port	-	-	
	protocol	Protocol	-	-	
	userID	UserID	-		
	status	Status of the connection	-	-	
	connectedTime	Connected time	-	-	

**Table 190 StorageSystem**

Data nesting information		Explanation	Range	Remarks	Repeatable
values					
	storageDeviceId	Storage Device ID	-	-	
	model	Model	-	-	
	serialNumber	Serial Number	-	-	
	svplp	SVP IP Address	-	-	

**Table 191 ReservationTargets**

Data nesting information		Explanation	Range	Remarks	Repeatable
values					yes
	configurationManagerConnection	Configuration Manager Connection			
	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 the connection	-	-	
	connectedTime	Connected time	-	-	
	storageSystem	Storage System	-	-	
	storageDeviceId	Storage Device ID	-	-	
	model	Model	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable
	serialNumber	Serial Number	-	-	
	svplp	SVP IP Address	-	-	

**Table 192 ExistingHostGroupsOriSCSITargets**

Data nesting information		Explanation	Range	Remarks	Repeatable
values					yes
	portId	Port ID	-	-	
	storageDeviceId	Storage Device ID	-	-	
	hostGroupId	Host Group ID	-	-	
	hostGroupName	Host Group name	-	-	
	iscsiName	iSCSI name	-	-	
	hostMode	Host Mode	-	-	

**Table 193 Pool**

Data nesting information		Explanation	Range	Remarks	Repeatable
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 194 HostGroupSettings**

Data nesting information		Explanation	Range	Remarks	Repeatable
values					yes
	port	Port	-	-	
	wwnSettings	WWN Settings		When "PortType" is "Fibre", you can specify WWN Settings.	yes
	wwn	WWN	Enter a maximum of 16 characters in hexadecimal format.	-	
	wwnNickname	WWN Nickname	Enter a maximum of 64 characters.	-	
	hostGroupName	Host Group name	Enter a maximum of 64 characters.	When "PortType" is "Fibre", you can specify hostGroupName	
	iScsiSettings	iScsiSettings	-	When "PortType" is "iSCSI", you can specify iSCSI Settings.	yes



Data nesting information		Explanation	Range	Remarks	Repeatable
	iScsiName	iSCSI name	Specify in iqn 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	Enter a maximum of 32 characters.	-	
	iScsiTargetName	iSCSI Target Name	Enter a maximum of 32 characters	When "PortType" is "iSCSI", you can specify iSCSI Target Name.	
	hostMode	Host Mode	Refer to "Values that can be specified in the hostmode parameter" in the Hitachi Command Suite CLI Reference Guide.	-	

Data nesting information		Explanation	Range	Remarks	Repeatable
	hostModeOptions	Host Mode Options	Refer to "Values that can be specified in the hostmodeoptions parameter" in the Hitachi Command Suite CLI Reference Guide.	-	

### Allocate volumes from virtual storage machine (task details)

key Name	Explanation	Input/Output	Type	Range	Default value
PrimarySite_PrimaryVolumesLUNPathConfigurationInformation	Primary volumes LUN path configuration information for the primary site.	Output	File	See the "File type property list" section following this table.	
OtherSite_HAReservedVolumesInformation	Reserved volumes information for other sites.	Output	File	See the "File type property list" section following this table.	

## File type property list

Table 195 PrimarySite\_PrimaryVolumesLUNPathConfigurationInformation

Data nesting information		Explanation	Range	Remarks	Repeatable
values					yes
	hostWWN	WWN/iSCSI name	-	-	
	storagePort	Storage port	-	-	
	lun	LUN	-	-	
	portType	Port type	-	-	
	capacity	Capacity	-	-	
	ldevId	LDEV ID	-		
	hostGroupNameOrIscsiTarget	Host Group name/iSCSI target name	-	-	
	model	Model	-	-	
	serialNumber	Serial number	-	-	
	ldevLabel	LDEV label	-	-	
	virtualStorageMachineResourceGroupName	Virtual Storage Machine resource group name	-	-	
	virtualModel	Virtual model	-	-	
	virtualSerialNumber	Virtual serial number	-	-	
	configurationManager	Configuration manager	-	-	
	poolId	Pool ID	-	-	
	asymmetricAccessStatus	Asymmetric access status	-	-	

Table 196 OtherSite\_HAReservedVolumesInformation

Data nesting information		Explanation	Range	Remarks	Repeatable
values					yes

Data nesting information		Explanation	Range	Remarks	Repeatable
	ldevId	LDEV ID	-	-	
	model	Model	-	-	
	serialNumber	Serial number	-	-	
	ldevLabel	LDEV label	-	-	
	virtualStorageMachineResourceGroupName	Virtual Storage Machine resource group name	-	-	
	virtualModel	Virtual model	-	-	
	virtualSerialNumber	Virtual serial number	-	-	
	configurationManager	Configuration manager	-	-	
	PoolId	Pool ID	-	-	

## Create high availability pair for migration service properties

Use the following properties to modify or create values for the create high availability pair for migration service.



**Note:** The term "VSP Gx00 models" refers to the Virtual Storage Platform G200, G400, G600, G800 product models. The term "VSP Fx00 models" refers to the Virtual Storage Platform F400, F600, F800 product models.

## Create high availability pair for migration (edit)

key Name	Explanation	Input/Output	Type	Range	Default value
SourceConfigurationManagerConnection	Migration Source Configuration Manager Connection	Input	File	See the "File type property list" section following this table.	

key Name	Explanation	Input/Output	Type	Range	Default value
SourceStorageSystem	Migration Source Storage System	Input	File	See the "File type property list" section following this table.	
SourceVolumesFilter	Migration Source Volume Filter	Input	File	See the "File type property list" section following this table.	
JoinFiltersBy	Join Filter By	Input	string	"and" or "or"	
SourceVolumes	Migration Source Volumes	Input	File	See the "File type property list" section following this table.	
TargetConfigurationManagerConnection	Migration Target Configuration Manager Connection	Input	File	See the "File type property list" section following this table.	
TargetStorageSystem	Migration Target Storage System	Input	File	See the "File type property list" section following this table.	
Pool	Pool	Input	File	See the "File type property list" section following this table.	
LUN Starts from	Starting number of LUN	Input	integer	0-07FF	

key Name	Explanation	Input/Output	Type	Range	Default value
ExistingOrCreateNewHostGroup	Existing or Create new Host Group	Input	string	Existing Host Group/iSCSI Target "Existing Host Group/iSCSI Target" or "New Host Group/iSCSI Target"	Existing Host Group/iSCSI Target
ExistingHostGroupsOriSCSITargets	Existing Host Groups or iSCSI Targets	Input	File	See the "File type property list" section following this table.	
PortType	Port Type	Input	string	"Fibre" or "iSCSI"	Fibre
HostGroupSettings	Host Group Settings which created new	Input	File	See the "File type property list" section following this table.	
ExistingOrCreateNewCopyGroup	Existing or Create new Copy Group	Input	string	"Existing Copy Group" or "New Copy Group"	Existing Copy Group
CopyGroupName	Copy Group Name	Input	string	Enter a maximum of 29 characters.	
ExistingCopyGroup	Existing Copy Group	Input	File	See the "File type property list" section following this table.	

key Name	Explanation	Input/Output	Type	Range	Default value
CopyPairName	Copy Pair Name	Input	string	Enter a maximum of 26 characters.	Specify the new copy pair name to create using the following format: {Copy Pair Name}_{sequential number (for-digits)}. When you create one copy pair, sequential numbers are not added. When you create multiple copy pairs, the sequential numbers are added.
QuorumDiskId	Quorum Disk ID	Input	integer	0-1F	Must <code>^[01][0-9A-Fa-f]\$</code> .
PathGroupID	Path Group ID	Input	integer	0-FF	Must <code>^[0-9A-Fa-f][0-9A-Fa-f]\$</code> .
ConsistencyGroup	Consistency Group	Input	boolean	"true" or "false"	False
ConsistencyGroupId	Consistency Group ID	Input	integer	0-255	-
MuNumber	MU Number	Input	integer	-	-
CopyPace	Copy Pace	Input	integer	1-15	3
PerformInitialCopy	Whether perform Initial Copy	Input	boolean	"true" or "false"	True

## File type property list

Table 197 SourceConfigurationManagerConnection

Data nesting information		Explanation	Range	Remarks	Repeatable
value					
	productName	Product name to register to the Web Service Connection	"Configuration Manager"	-	
	name	Name	-	-	
	ipAddress	IpAddress	-	-	
	Port	Port	-	-	
	protocol	Protocol	-	-	
	userID	UserID	-	-	
	status	Status of the connection	-	-	
	connectedTime	Connected time	-	-	

Table 198 SourceStorageSystem

Data nesting information		Explanation	Range	Remarks	Repeatable
value					
	storageDeviceId	Storage Device ID	-	-	
	model	Model	-	-	
	serialNumber	Serial Number	-	-	
	svplp	SVP IP Address	-	-	

Table 199 TargetConfigurationManagerConnection

Data nesting information		Explanation	Range	Remarks	Repeatable
value					



Data nesting information		Explanation	Range	Remarks	Repeatable
	productName	Product name to register to the Web Service Connection	"Configuration Manager"	-	
	name	Name	-	-	
	ipAddress	IpAddress	-	-	
	Port	Port	-	-	
	protocol	Protocol	-	-	
	userID	UserID	-		
	status	Status of the connection	-	-	
	connectedTime	Connected time	-	-	

**Table 200 TargetStorageSystem**

Data nesting information		Explanation	Range	Remarks	Repeatable
value					
	storageDeviceId	Storage Device ID	-	-	
	model	Model	-	-	
	serialNumber	Serial Number	-	-	
	svplp	SVP IP Address	-	-	

**Table 201 Pool**

Data nesting information		Explanation	Range	Remarks	Repeatable
value					
	poolId	Pool ID	-	-	
	poolName	Pool name	-	-	
	poolType	Pool Type	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable
	usedCapacityRate	Used capacity rate	-	-	
	availableVolumeCapacity	Available Volume capacity	-	-	
	totalPoolCapacity	Total Pool capacity	-	-	
	numOfLdevs	Number of LDEVs	-	-	

Table 202 ExistingHostGroupsOriSCSITargets

Data nesting information		Explanation	Range	Remarks	Repeatable
value					yes
	portId	Port ID	-	-	
	storageDeviceId	Storage Device ID	-	-	
	hostGroupId	Host Group ID	-	-	
	hostGroupName	Host Group name	-	-	
	iscsiName	iSCSI name	-	-	
	hostMode	Host Mode	-	-	

Table 203 ExistingCopyGroup

Data nesting information		Explanation	Range	Remarks	Repeatable
value					
	copyGroupName	Copy Group name	-	-	
	muNumber	Mu number	-	-	
	localDeviceGroupName	Local Device Group name	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable
	remoteDeviceGroupname	Remote Device Group name	-	-	

Table 204 SourceVolumesFilter

Data nesting information		Explanation	Range	Remarks	Repeatable
value					yes
	key	Key used by the source volume filter	"LDEV ID," "Label," or "Pool ID."	-	
	operator	operator	<p>When specifying "LDEV ID", use the following operators: "=", "&lt;", "&gt;", "&lt;=", "&gt;=", "!=".</p> <p>When specifying "Label", use the following operators: "=", "!=", "starts with", "ends with".</p> <p>When specifying "Pool ID", use the following operators: "=", "&lt;", "&gt;", "&lt;=", "&gt;=", "!=".</p>	-	
	value	value	-	-	

**Table 205 SourceVolumes**

Data nesting information		Explanation	Range	Remarks	Repeatable
value					yes
	storageDeviceId	Storage Device ID	-	-	
	ldevId	LDEV ID	-	-	
	label	Volume name	-	-	
	byteFormatCapacity	Byte format capacity	-	-	
	poolId	Pool ID	-	-	

**Table 206 HostGroupSettings**

Data nesting information		Explanation	Range	Remarks	Repeatable
value					yes
	port	Port	-	-	-
	wwnSettings	WWN Settings	-	When "PortType" is "Fibre", you can specify WWN Settings.	yes
	wwn	WWN	Enter a maximum of 16 characters in hexadecimal format.	-	
	wwnNickname	WWN Nickname	Enter a maximum of 64 characters.	-	

Data nesting information		Explanation	Range	Remarks	Repeatable
	hostGroupName	Host Group name	Enter a maximum of 64 characters.	When "PortType" is "Fibre", you can specify hostGroupName	
	iScsiSettings	iScsiSettings	-	'When "PortType" is "iSCSI", you can specify iScsi Settings.	yes
	iScsiName	iSCSI name	Specify in iqn 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	Enter a maximum of 32 characters.	-	
	iScsiTargetName	iSCSI Target Name	Enter a maximum of 32 characters	'When "PortType" is "iSCSI", you can specify iScsi Target Name.	

Create high availability pair for migration (submit)

Data nesting information		Explanation	Range	Remarks	Repeatable
	hostMode	Host Mode	Refer to "Values that can be specified in the hostmode parameter" in the Hitachi Command Suite CLI Reference Guide.	-	
	hostModeOptions	Host Mode Options	Refer to "Values that can be specified in the hostmodeoptions parameter" in the Hitachi Command Suite CLI Reference Guide.	-	

Create high availability pair for migration (submit)

key Name	Explanation	Input/Output	Type	Range	Default value
SourceConfigurationManagerConnection	Migration Source Configuration Manager Connection	Input	File	See the "File type property list" section following this table.	
SourceStorageSystem	Migration Source Storage System	Input	File	See the "File type property list" section following this table.	

key Name	Explanation	Input/Output	Type	Range	Default value
SourceVolumesFilter	Migration Source Volume Filter	Input	File	See the "File type property list" section following this table.	
JoinFiltersBy	Join Filter By	Input	string	"and" or "or"	
SourceVolumes	Migration Source Volumes	Input	File	See the "File type property list" section following this table.	
TargetConfigurationManagerConnection	Migration Target Configuration Manager Connection	Input	File	See the "File type property list" section following this table.	
TargetStorageSystem	Migration Target Storage System	Input	File	See the "File type property list" section following this table.	
Pool	Pool	Input	File	See the "File type property list" section following this table.	
LUN Starts from	Starting number of LUN	Input	integer	0-07FF	

key Name	Explanation	Input/Output	Type	Range	Default value
ExistingOrCreateNewHostGroup	Existing or Create new Host Group	Input	string	Existing Host Group/iSCSI Target "Existing Host Group/iSCSI Target" or "New Host Group/iSCSI Target"	Existing Host Group/iSCSI Target
ExistingHostGroupsOriSCSITargets	Existing Host Groups or iSCSI Targets	Input	File	See the "File type property list" section following this table.	
PortType	Port Type	Input	string	"Fibre" or "iSCSI"	Fibre
HostGroupSettings	Host Group Settings which created new	Input	File	See the "File type property list" section following this table.	
ExistingOrCreateNewCopyGroup	Existing or Create new Copy Group	Input	string	"Existing Copy Group" or "New Copy Group"	Existing Copy Group
CopyGroupName	Copy Group Name	Input	string	Enter a maximum of 29 characters.	
ExistingCopyGroup	Existing Copy Group	Input	File	See the "File type property list" section following this table.	



key Name	Explanation	Input/Output	Type	Range	Default value
CopyPairName	Copy Pair Name	Input	string	Enter a maximum of 26 characters.	Specify the new copy pair name to create using the following format: {Copy Pair Name}_{sequential number (for-digits)}. When you create one copy pair, sequential numbers are not added. When you create multiple copy pairs, the sequential numbers are added.
QuorumDiskId	Quorum Disk ID	Input	integer	0-1F	Must <code>^[01][0-9A-Fa-f]\$</code> .
PathGroupID	Path Group ID	Input	integer	0-FF	Must <code>^[0-9A-Fa-f][0-9A-Fa-f]\$</code> .
ConsistencyGroup	Consistency Group	Input	boolean	"true" or "false"	False
ConsistencyGroupId	Consistency Group ID	Input	integer	0-255	-
MuNumber	MU Number	Input	integer	-	-
CopyPace	Copy Pace	Input	integer	1-15	3
PerformInitialCopy	Whether perform Initial Copy	Input	boolean	"true" or "false"	True

## File type property list

Table 207 SourceConfigurationManagerConnection

Data nesting information		Explanation	Range	Remarks	Repeatable
value					
	productName	Product name to register to the Web Service Connection	"Configuration Manager"	-	
	name	Name	-	-	
	ipAddress	IpAddress	-	-	
	Port	Port	-	-	
	protocol	Protocol	-	-	
	userID	UserID	-	-	
	status	Status of the connection	-	-	
	connectedTime	Connected time	-	-	

Table 208 SourceStorageSystem

Data nesting information		Explanation	Range	Remarks	Repeatable
value					
	storageDeviceId	Storage Device ID	-	-	
	model	Model	-	-	
	serialNumber	Serial Number	-	-	
	svplp	SVP IP Address	-	-	

Table 209 TargetConfigurationManagerConnection

Data nesting information		Explanation	Range	Remarks	Repeatable
value					

Data nesting information		Explanation	Range	Remarks	Repeatable
	productName	Product name to register to the Web Service Connection	"Configuration Manager"	-	
	name	Name	-	-	
	ipAddress	IpAddress	-	-	
	Port	Port	-	-	
	protocol	Protocol	-	-	
	userID	UserID	-		
	status	Status of the connection	-	-	
	connectedTime	Connected time	-	-	

**Table 210 TargetStorageSystem**

Data nesting information		Explanation	Range	Remarks	Repeatable
value					
	storageDeviceId	Storage Device ID	-	-	
	model	Model	-	-	
	serialNumber	Serial Number	-	-	
	svplp	SVP IP Address	-	-	

**Table 211 Pool**

Data nesting information		Explanation	Range	Remarks	Repeatable
value					
	poolId	Pool ID	-	-	
	poolName	Pool name	-	-	
	poolType	Pool Type	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable
	usedCapacityRate	Used capacity rate	-	-	
	availableVolumeCapacity	Available Volume capacity	-	-	
	totalPoolCapacity	Total Pool capacity	-	-	
	numOfLdevs	Number of LDEVs	-	-	

**Table 212 ExistingHostGroupsOriSCSITargets**

Data nesting information		Explanation	Range	Remarks	Repeatable
value					yes
	portId	Port ID	-	-	
	storageDeviceId	Storage Device ID	-	-	
	hostGroupId	Host Group ID	-	-	
	hostGroupName	Host Group name	-	-	
	iscsiName	iSCSI name	-	-	
	hostMode	Host Mode	-	-	

**Table 213 ExistingCopyGroup**

Data nesting information		Explanation	Range	Remarks	Repeatable
value					
	copyGroupName	Copy Group name	-	-	
	muNumber	Mu number	-	-	
	localDeviceGroupName	Local Device Group name	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable
	remoteDeviceGroup	Remote Device Group name	-	-	

**Table 214 SourceVolumesFilter**

Data nesting information		Explanation	Range	Remarks	Repeatable
value					yes
	key	Key used by the source volume filter	"LDEV ID," "Label," or "Pool ID."	-	
	operator	operator	<p>When specifying "LDEV ID", use the following operators: "=", "&lt;", "&gt;", "&lt;=", "&gt;=", "!=".</p> <p>When specifying "Label", use the following operators: "=", "!=", "starts with", "ends with".</p> <p>When specifying "Pool ID", use the following operators: "=", "&lt;", "&gt;", "&lt;=", "&gt;=", "!=".</p>	-	
	value	value	-	-	

**Table 215 SourceVolumes**

Data nesting information		Explanation	Range	Remarks	Repeatable
value					yes
	storageDeviceId	Storage Device ID	-	-	
	ldevId	LDEV ID	-	-	
	label	Volume name	-	-	
	byteFormatCapacity	Byte format capacity	-	-	
	poolId	Pool ID	-	-	

**Table 216 HostGroupSettings**

Data nesting information		Explanation	Range	Remarks	Repeatable
value					yes
	port	Port	-	-	-
	wwnSettings	WWN Settings	-	When "PortType" is "Fibre", you can specify WWN Settings.	yes
	wwn	WWN	Enter a maximum of 16 characters in hexadecimal format.	-	
	wwnNickname	WWN Nickname	Enter a maximum of 64 characters.	-	

Data nesting information		Explanation	Range	Remarks	Repeatable
	hostGroupName	Host Group name	Enter a maximum of 64 characters.	When "PortType" is "Fibre", you can specify hostGroupName	
	iScsiSettings	iScsiSettings	-	'When "PortType" is "iSCSI", you can specify iScsi Settings.	yes
	iScsiName	iSCSI name	Specify in iqn 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	Enter a maximum of 32 characters.	-	
	iScsiTargetName	iSCSI Target Name	Enter a maximum of 32 characters	'When "PortType" is "iSCSI", you can specify iScsi Target Name.	

Data nesting information		Explanation	Range	Remarks	Repeatable
	hostMode	Host Mode	Refer to "Values that can be specified in the hostmode parameter" in the Hitachi Command Suite CLI Reference Guide.	-	
	hostModeOptions	Host Mode Options	Refer to "Values that can be specified in the hostmodeoptions parameter" in the Hitachi Command Suite CLI Reference Guide.	-	

### Create high availability pair for migration (task details)

key Name	Explanation	Input/Output	Type	Range	Default value
PrimarySite_PrimaryVolumesLUNPathConfigurationInformation	Primary volumes LUN path configuration information for the primary site.	Output	File	See the "File type property list" section following this table.	



key Name	Explanation	Input/Output	Type	Range	Default value
SecondarySite_SecondaryVolumesLUNPathConfigurationInformation	Secondary volumes LUN path configuration information for the secondary site.	Output	File	See the "File type property list" section following this table.	
CopyGroupConfigurationInformation	Copy group configuration information.	Output	File	See the "File type property list" section following this table.	

**File type property list**

**Table 217 PrimarySite\_PrimaryVolumesLUNPathConfigurationInformation**

Data nesting information	Explanation	Range	Remarks	Repeatable
values				yes
hostWWN	WWN/iSCSI name	-	-	
storagePort	Storage port	-	-	
lun	LUN	-	-	
portType	Port type	-	-	
capacity	Capacity	-	-	
ldevId	LDEV ID	-		
hostGroupNameOrIscsiTarget	Host Group name/iSCSI target name	-	-	
model	Model	-	-	
serialNumber	Serial number	-	-	
ldevLabel	LDEV label	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable
	virtualStorageMachineResourceGroupName	Virtual Storage Machine resource group name	-	-	
	virtualModel	Virtual model	-	-	
	virtualSerialNumber	Virtual serial number	-	-	
	configurationManager	Configuration manager	-	-	
	poolId	Pool ID	-	-	
	asymmetricAccessStatus	Asymmetric access status	-	-	

**Table 218 SecondarySite\_SecondaryVolumesLUNPathConfigurationInformation**

Data nesting information		Explanation	Range	Remarks	Repeatable
values					yes
	hostWWN	WWN/iSCSI name	-	-	
	storagePort	Storage port	-	-	
	lun	LUN	-	-	
	portType	Port type	-	-	
	capacity	Capacity	-	-	
	ldevId	LDEV ID	-	-	
	hostGroupNameOrIScsiTarget	Host Group name/iSCSI target name	-	-	
	model	Model	-	-	
	serialNumber	Serial number	-	-	
	ldevLabel	LDEV label	-	-	
	virtualStorageMachineResourceGroupName	Virtual Storage Machine resource group name	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable
	virtualModel	Virtual model	-	-	
	virtualSerialNumber	Virtual serial number	-	-	
	configurationManager	Configuration manager	-	-	
	poolId	Pool ID	-	-	
	asymmetricAccessStatus	Asymmetric access status	-	-	

**Table 219 CopyGroupConfigurationInformation**

Data nesting information		Explanation	Range	Remarks	Repeatable
values					
	copyGroupName	Copy group name	-	-	
	ctgId	Consistency group ID	-	-	
	muNumber	MU number	-	-	
	quorumDiskId	Quorum disk ID	-	-	
	siteInformation	Site information	-	-	yes
	primaryOrSecondary	Primary/Secondary	-	-	
	model	Model	-	-	
	serialNumber	Serial number	-	-	
	virtualStorageMachineResourceGroupName	Virtual Storage Machine resource group name	-	-	
	virtualModel	Virtual model	-	-	
	virtualSerialNumber	Virtual serial number	-	-	
	pathGroupId	Path group ID	-	-	
	configurationManager	Configuration Manager	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable
	deletedCopyPairs		-	-	yes
	primaryModel	Primary model	-	-	
	primarySerialNumber	Primary serial number	-	-	
	secondaryModel	Secondary model	-	-	
	secondarySerialNumber	Secondary serial number	-	-	
	virtualStorageMachineResourceGroupName	Virtual Storage Machine resource group name	-	-	
	virtualModel	Virtual model	-	-	
	virtualSerialNumber	Virtual serial number	-	-	
	primaryConfigurationManager	Primary Configuration Manager	-	-	
	secondaryConfigurationManager	Secondary Configuration Manager	-	-	
	copyPairName	Copy pair name	-	-	
	copyPace	Copy pace	-	-	
	fenceLevel	Fence level	-	-	
	ldevId	LDEV ID	-	-	

## Migrate data using high availability pair service properties

Use the following properties to modify or create values for the migrate data using high availability pair service.



**Note:** The term "VSP Gx00 models" refers to the Virtual Storage Platform G200, G400, G600, G800 product models. The term "VSP Fx00 models" refers to the Virtual Storage Platform F400, F600, F800 product models.

## Migrate data using high availability pair (edit)

keyName	Explanation	Input/Output	Type	Range	Remark	Default Value
SourceConfigurationManagerConnection	Migration source configuration manager connection.	Input	File	See the "File type property list" section following this table.		
SourceStorageSystem	Migration source storage system.	Input	File	See the "File type property list" section following this table.		
SpecifyTargetBy	Specify target by.	Input	String	"Source Volume" or "Copy Group".		"Source Volume"
SourceVolumesFilter	Migration source volume filter.	Input	File	See the "File type property list" section following this table.		
JoinFiltersBy	Join filter by.	Input	String	"and" or "or".		"and"
SourceVolumes	Migration source volumes.	Input	File	See the "File type property list" section following this table.		

keyName	Explanation	Input/Output	Type	Range	Remark	Default Value
TargetConfigurationManagerConnection	Migration target configuration on manager connection.	Input	File		See the "File type property list" section following this table.	
DeleteHostGroupOption	Delete the host.	Input	Boolean	True	Group or iSCSI target only when all the LUN paths are deleted.	
TargetStorageSystem	Migration target storage system.	Input	File		See the "File type property list" section following this table.	
CopyGroup	Copy group.	Input	File		See the "File type property list" section following this table.	

**File Type property list****Table 220 SourceConfigurationManagerConnection / TargetConfigurationManagerConnection**

Data nesting information		Description	Range	Remarks	Repeatable
values					
	productName	Product name for which you are registering the 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 221 SourceStorageSystem / TargetStorageSystem**

Data nesting information		Description	Range	Remarks	Repeatable
values					
	storageDeviceId	Storage Device ID	-	-	
	model	Model	-	-	
	serialNumber	Serial Number	-	-	
	svplp	SVP IP Address	-	-	

**Table 222 SourceVolumesFilter**

Data nesting information		Description	Range	Remarks	Repeatable
values					Yes
	key	Key used by the source volume filter	"LDEV ID", "Label" or "Pool ID"	-	
	operator	Operator	<p>When specifying "LDEV ID", the following operators can be specified: "=", "&lt;", "&gt;", "&lt;=", "&gt;=", "!=", ".".</p> <p>When specifying "Label", the following operators can be specified: "=", "!=", "starts with", "ends with".</p> <p>When specifying "Pool ID", the following operators can be specified: "=", "&lt;", "&gt;", "&lt;=", "&gt;=", "!=", ".".</p>	-	
	value	Value	-	-	

**Table 223 SourceVolumes**

Data nesting information		Description	Range	Remarks	Repeatable
value					Yes
	storageDeviceId	Storage Device ID	-	-	
	ldevId	LDEV ID	-	-	
	label	Label	-	-	
	byteFormatCapacity	Byte format and capacity	-	-	



Data nesting information		Description	Range	Remarks	Repeatable
	poolId	Pool ID	-	-	

**Table 224 CopyGroup**

Data nesting information		Description	Range	Remarks	Repeatable
value					
	copyGroupName	Copy group name	-	-	
	muNumber	MU number	-	-	
	localDeviceGroupName	Local device group name	-	-	
	remoteDeviceGroupName	Remote device group name	-	-	

**Migrate data using high availability pair (submit)**

keyName	Explanation	Input/Output	Type	Range	Remark	Default Value
SourceConfigurationManagerConnection	Migration source configuration manager connection.	Input	File	See the "File type property list" section following this table.		
SourceStorageSystem	Migration source storage system.	Input	File	See the "File type property list" section following this table.		

keyName	Explanation	Input/Output	Type	Range	Remark	Default Value
SpecifyTargetBy	Specify target by.	Input	String	"Source Volume" or "Copy Group"		"Source Volume"
SourceVolumesFilter	Migration source volume filter.	Input	File	See the "File type property list" section following this table.		
JoinFiltersBy	Join filter by.	Input	String	"and" or "or"		"and"
SourceVolumes	Migration source volumes.	Input	File	See the "File type property list" section following this table.		
TargetConfigurationManagerConnection	Migration target configuration manager connection.	Input	File	See the "File type property list" section following this table.		
TargetStorageSystem	Migration target storage system.	Input	File	See the "File type property list" section following this table.		

keyName	Explanation	Input/Output	Type	Range	Remark	Default Value
CopyGroup	Copy group.	Input	File	See the "File type property list" section following this table.		

**File Type property list**

**Table 225 SourceConfigurationManagerConnection / TargetConfigurationManagerConnection**

Data nesting information		Description	Range	Remarks	Repeatable
values					
	productName	Product name for which you are registering the 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 226 SourceStorageSystem / TargetStorageSystem**

Data nesting information		Description	Range	Remarks	Repeatable
values					
	storageDeviceId	Storage Device ID	-	-	
	model	Model	-	-	
	serialNumber	Serial Number	-	-	
	svplp	SVP IP Address	-	-	

**Table 227 SourceVolumesFilter**

Data nesting information		Description	Range	Remarks	Repeatable
values					Yes
	key	Key used by the source volume filter	"LDEV ID", "Label" or "Pool ID"	-	
	operator	Operator	<p>When specifying "LDEV ID", the following operators can be specified: "=", "&lt;", "&gt;", "&lt;=", "&gt;=", "!=".</p> <p>When specifying "Label", the following operators can be specified: "=", "!=", "starts with", "ends with".</p> <p>When specifying "Pool ID", the following operators can be specified: "=", "&lt;", "&gt;", "&lt;=", "&gt;=", "!=".</p>	-	
	value	Value	-	-	

**Table 228 SourceVolumes**

Data nesting information		Description	Range	Remarks	Repeatable
value					Yes
	storageDeviceId	Storage Device ID	-	-	
	ldevId	LDEV ID	-	-	
	label	Label	-	-	
	byteFormatCapacity	Byte format and capacity	-	-	
	poolId	Pool ID	-	-	

**Table 229 CopyGroup**

Data nesting information		Description	Range	Remarks	Repeatable
value					
	copyGroupName	Copy group name	-	-	
	muNumber	MU number	-	-	
	localDeviceGroupName	Local device group name	-	-	
	remoteDeviceGroupName	Remote device group name	-	-	

**Migrate data using high availability pair (task details)**

key Name	Explanation	Input/Output	Type	Range	Default value
VolumeLUNPathConfigurationInformation	Volume LUN path configuration information.	Output	File	See the "File type property list" section following this table.	

key Name	Explanation	Input/Output	Type	Range	Default value
DeletedCopyPairsInformation	Deleted copy pairs information.	Output	File	See the "File type property list" section following this table.	
DeletedHostGroupsInformation	Deleted host groups/iSCSI targets information.	Output	File	See the "File type property list" section following this table.	

### File type property list

**Table 230 VolumeLUNPathConfigurationInformation**

Data nesting information	Explanation	Range	Remarks	Repeatable
values				
primarySite	Primary site	-	-	
migrationSourceVolumes <sup>1</sup>	Migration source volumes	-	-	yes
hostWWN	WWN/iSCSI name	-	-	
storagePort	Storage port	-	-	
lun	LUN	-	-	
portType	Port type	-	-	
capacity	Capacity	-	-	
ldevId	LDEV ID	-	-	
hostGroupNameOrIscsiTarget	Host group name/iSCSI target name	-	-	
model	Model	-	-	

Data nesting information			Explanation	Range	Remarks	Repeatable
		serialNumber	Serial number	-	-	
		ldevLabel	LDEV label	-	-	
		virtualStorageMachineResourceGroupName	Virtual Storage Machine resource group name	-	-	
		virtualModel	Virtual model	-	-	
		virtualSerialNumber	Virtual serial number	-	-	
		configurationManager	Configuration Manager	-	-	
		poolId	Pool ID	-	-	
		asymmetricAccessStatus	Asymmetric access status	-	-	
		otherVolumesBelongingToTheSameHostGroupAsMigrationSourceVolumes	Other volumes belonging to the same host group as migration source volumes	-	-	yes
		The same as <sup>1</sup>		-	-	
		secondarySite	Secondary site	-	-	
		migrationTargetVolumes	Migration target volumes	-	-	yes
		The same as <sup>1</sup>		-	-	
		otherVolumesBelongingToTheSameHostGroupAsMigrationTargetVolumes	Other volumes belonging to the same Host Group as migration target volumes	-	-	yes
		The same as <sup>1</sup>		-	-	

**Table 231 DeletedCopyPairsInformation**

Data nesting information		Explanation	Range	Remarks	Repeatable
values					
	copyGroupName	Copy group name	-	-	
	ctgId	Consistency group ID	-	-	
	muNumber	MU number	-	-	
	quorumDiskId	Quorum disk ID	-	-	
	siteInformation	Site information	-	-	yes
	primaryOrSecondary	Primary/Secondary	-	-	
	model	Model	-	-	
	serialNumber	Serial number	-	-	
	virtualStorageMachineResourceGroupName	Virtual Storage Machine resource group name	-	-	
	virtualModel	Virtual model	-	-	
	virtualSerialNumber	Virtual serial number	-	-	
	configurationManager	Configuration Manager	-	-	
	deletedCopyPairs		-	-	yes
	primaryModel	Primary model	-	-	
	primarySerialNumber	Primary serial number	-	-	
	secondaryModel	Secondary model	-	-	
	secondarySerialNumber	Secondary serial number	-	-	
	virtualStorageMachineResourceGroupName	Virtual Storage Machine resource group name	-	-	



Data nesting information		Explanation	Range	Remarks	Repeatable
	virtualModel	Virtual model	-	-	
	virtualSerialNumber	Virtual serial number	-	-	
	primaryConfigurationManager	Primary Configuration Manager	-	-	
	secondaryConfigurationManager	Secondary Configuration Manager	-	-	
	copyPairName	Copy pair name	-	-	
	copyPace	Copy pace	-	-	
	fenceLevel	Fence level	-	-	
	ldevId	LDEV ID	-	-	

**Table 232 DeletedHostGroupsInformation**

Data nesting information		Explanation	Range	Remarks	Repeatable
value			-	-	yes
	hostGroupNameOrIscsiTargetName	Host Group name/iSCSI target name	-	-	
	hostWWN	WWN/iSCSI name	-	-	
	storagePort	Storage port	-	-	
	portType	Port type	-	-	
	hostMode	Host mode	-	-	
	hostModeOptions	Host mode options	-	-	
	hostGroupNumber	Host group number	-	-	
	model	Model	-	-	
	serialNumber	Serial number	-	-	

## Export VSM configuration information across sites service properties

Use the following properties to modify or create values for the export VSM configuration information across sites service.



**Note:** The term "VSP Gx00 models" refers to the Virtual Storage Platform G200, G400, G600, G800 product models. The term "VSP Fx00 models" refers to the Virtual Storage Platform F400, F600, F800 product models.

### Export virtual storage machine configuration across sites (edit)

keyName	Explanation	Input/Output	Type	Range	Default value
VirtualStorageMachine	Specifies information about the virtual storage machines to include when exporting configuration information.	Input	String	-	
ReportOutputFilePath	Specifies the file path in which to output the configuration information report file.	Input	String	-	

**Export virtual storage machine configuration across sites (submit)**

keyName	Explanation	Input/Output	Type	Range	Default value
VirtualStorageMachine	Specifies information about the virtual storage machines to include when exporting configuration information.	Input	String	-	
ReportOutputFilePath	Specifies the file path in which to output the configuration information report file.	Input	String	-	

**Export virtual storage machine configuration across sites (task details)**

key Name	Explanation	Input/Output	Type	Range	Default value
CreatedTime	Created time.	Output	String	-	
VirtualStorageMachineOutput	Virtual storage machine output.	Output	String	-	
PhysicalStorageMachines	Physical storage machines.	Output	File	See the "File type property list" section following this table.	

key Name	Explanation	Input/Output	Type	Range	Default value
ReservedVolumes	Reserved volumes.	Output	File	See the "File type property list" section following this table.	
ReportOutputFilePathOut	Report output file path out.	Output	String	-	

### File type property list

**Table 233 PhysicalStorageMachines**

Data nesting information	Explanation	Range	Remarks	Repeatable
value				yes
storageDeviceId	Storage device ID	-	-	
model	Model	-	-	
serialNumber	Serial number	-	-	
svplp	SVP IP	-	-	

**Table 234 Reserved volumes**

Data nesting information	Explanation	Range	Remarks	Repeatable
value				yes
ldevId	LDEV ID	-	-	
primaryStorageSystem	Primary storage system	-	-	
secondaryStorageSystem	Secondary storage system	-	-	
reservedStorageSystems	Reserved storage system	-	-	
highAvailabilityActivated	High availability activated	-	-	

Data nesting information		Explanation	Range	Remarks	Repeatable
	primaryTargetHostGroups	Primary target host groups	-	-	
	secondaryTargetHostGroups	Secondary target host groups	-	-	



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