



REST APIs

SnapCenter Plug-in for VMware vSphere 5.0

NetApp
August 30, 2024

Table of Contents

- REST APIs 1
 - Overview 1
 - Access REST APIs using the Swagger API web page 2
 - REST API workflows to add and modify storage VMs 2
 - REST API workflows to create and modify resource groups 3
 - REST API workflow to back up on demand 4
 - REST API workflow to restore VMs 4
 - REST API workflow to restore deleted VMs 5
 - REST API workflow to restore VMDKs 6
 - REST API workflows to attach and detach VMDKs 8
 - REST API workflows to mount and unmount datastores 10
 - REST APIs to download jobs and generate reports 11
 - REST API workflow to modify built-in schedules 12
 - REST API to mark stuck jobs as failed 12
 - REST APIs to generate audit logs 13

REST APIs

Overview

You can use the SnapCenter Plug-in for VMware vSphere REST APIs to perform common data protection operations. The plug-in has different Swagger web pages from the Windows SnapCenter Swagger web pages.

- REST API workflows are documented for the following operations on VMs and datastores using the REST APIs for VMware vSphere:
 - Add, modify, and delete storage VMs and clusters
 - Create, modify, and delete resource groups
 - Backup VMs, scheduled and on-demand
 - Restore existing VMs and deleted VMs
 - Restore VMDKs
 - Attach and detach VMDKs
 - Mount and unmount datastores
 - Download jobs and generate reports
 - Modify built-in schedules
- Operations that are not supported by the REST APIs for VMware vSphere
 - Guest file restore
 - Installation and configuration of the SnapCenter VMware plug-in
 - Assign RBAC roles or access to users
- `uri` parameter

The `uri` parameter always returns a "null" value.

- Login timeout

The default timeout is 120 minutes (2 hours). You can configure a different timeout value in the vCenter settings.

- Token management

For security, REST APIs use a mandatory token that is passed with each request and is used in all API calls for client validation. The REST APIs for VMware vSphere use the VMware authentication API to obtain the token. VMware provides the token management.

To obtain the token, use `/4.1/auth/login` REST API and provide the vCenter credentials.

- API version designations

Each REST API name includes the SnapCenter version number in which the REST API was first released. For example, the REST API `/4.1/datastores/{moref}/backups` was first released in SnapCenter 4.1.

REST APIs in future releases will usually be backward compatible and will be modified to accommodate new features as needed.

Access REST APIs using the Swagger API web page

REST APIs are exposed through the Swagger web page. You can access the Swagger web page to display either the SnapCenter Server or the SnapCenter Plug-in for VMware vSphere REST APIs, as well as to manually issue an API call. Use the SnapCenter Plug-in for VMware vSphere REST APIs to perform operations on VMs and datastores.

The plug-in has different Swagger web pages from the SnapCenter Server Swagger web pages.

Before you begin

For SnapCenter Plug-in for VMware vSphere REST APIs, you must know either the IP address or the host name of the SnapCenter VMware plug-in.



The plug-in only supports REST APIs for the purpose of integrating with third party applications and does not support PowerShell cmdlets or a CLI.

Steps

1. From a browser, enter the URL to access the plug-in Swagger web page:

```
https://<SCV_IP>:8144/api/swagger-ui/index.html
```



Do not use the following characters in the REST API URL: +, ., %, and &.

Example

Access the SnapCenter VMware plug-in REST APIs:

```
https://<SCV_IP>:8144/api/swagger-ui/index.html  
https://OVAhost:8144/api/swagger-ui/index.html
```

Log in use the vCenter authentication mechanism to generate the token.

2. Click an API resource type to display the APIs in that resource type.

REST API workflows to add and modify storage VMs

To perform add and modify storage VM operations using the SnapCenter Plug-in for VMware vSphere REST APIs, you must follow the prescribed sequence of REST API calls.

For each REST API, add `https://<server>:<port>` at the front of the REST API to form a complete endpoint.

To add storage VM operations, follow this workflow:

Step	REST API	Comments
1	/4.1/storage-system	Add Storage System adds the specified storage VM to SnapCenter Plug-in for VMware vSphere.

To modify storage VM operations, follow this workflow:

Step	REST API	Comments
1	/4.1/storage-system	getSvmAll gets the list of all available storage VMs. Note the name of the storage VM that you want to modify.
2	/4.1/storage-system	Modify Storage System modifies the specified storage VM. Pass the name from Step 1 in addition to all the other required attributes.

REST API workflows to create and modify resource groups

To perform create and modify resource group operations using the SnapCenter Plug-in for VMware vSphere REST APIs, you must follow the prescribed sequence of REST API calls.

For each REST API, add `https://<server>:<port>` at the front of the REST API to form a complete endpoint.

To create resource groups, follow this workflow:

Step	REST API	Comments
1	/4.1/policies	Get Policies gets the list of VMware vSphere client policies. Note the policyId that you want to use when creating the resource group and the policy frequency . If no policies are listed, then use the Create Policy REST API to create a new policy.
2	/4.1/resource-groups	Create a Resource Group creates a resource group with the specified policy. Pass the policyId from Step 1 and enter the policy frequency details in addition to all other required attributes.

To modify resource groups, follow this workflow:

Step	REST API	Comments
1	/4.1/resource-groups	Get List of Resource Groups gets the list of VMware vSphere client resource groups. Note the resourceGroupId that you want to modify.
2	/4.1/policies	If you want to modify the assigned policies, Get Policies gets the list of VMware vSphere client policies. Note the policyId that you want to use when modifying the resource group and the policy frequency .
3	/4.1/resource-groups/{resourceGroupId}	Update a Resource Group modifies the specified resource group. Pass the resourceGroupId from Step 1. Optionally, pass the policyId from Step 2 and enter the frequency details in addition to all other required attributes.

REST API workflow to back up on demand

To perform backup operations on demand using the SnapCenter Plug-in for VMware vSphere REST APIs, you must follow the prescribed sequence of REST API calls.



For each REST API, add `https://<server>:<port>` at the front of the REST API to form a complete endpoint.

Step	REST API	Comments
1	/4.1/resource-groups	Get List of Resource Groups gets the list of VMware vSphere client resource groups. Note the resourceGroupId and the policyId for the resource group you want to back up.
2	/4.1/resource-groups/backupnow	Run a backup on a Resource Group backs up the resource group on demand. Pass the resourceGroupId and the policyId from Step 1.

REST API workflow to restore VMs

To perform restore operations for VM backups using the SnapCenter Plug-in for VMware vSphere REST APIs, you must follow the prescribed sequence of REST API calls.

For each REST API, add `https://<server>:<port>` at the front of the REST API to form a complete endpoint.

Step	REST API	Comments
1	Go to <code>http://<vCenter-IP>/mob</code>	Find the VM moref from the VMware Managed Objects URL. Note the moref for the VM that you want to restore.
2	<code>/4.1/vm/{moref}/backups</code>	Get VM Backups gets a list of backups for the specified VM. Pass the moref from Step 1. Note the backupId of the backup you want to restore.
3	<code>/4.1/vm/backups/{backupId}/snapshotlocations</code>	Get snapshot locations gets the location of the Snapshot for the specified backup. Pass the backupId from Step 2. Note the snapshotLocationsList information.
4	<code>/4.1/vm/{moref}/backups/availableesxhosts</code>	Get available ESX Hosts gets the information for the host on which the backup is stored. Note the availableEsxHostsList information.
5	<code>/4.1/vm/{moref}/backups/{backupId}/restore</code>	<p>Restore a VM from a backup restores the specified backup. Pass the information from Steps 3 and 4 in the restoreLocations attribute.</p> <div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;"> <p> If the VM backup is a partial backup, set the <code>restartVM</code> parameter to "false".</p> <p> You cannot restore a VM that is a template.</p> </div>

REST API workflow to restore deleted VMs

To perform restore operations for VM backups using the SnapCenter Plug-in for VMware vSphere REST APIs, you must follow the prescribed sequence of REST API calls.

For each REST API, add `https://<server>:<port>` at the front of the REST API to form a complete endpoint.

Step	REST API	Comments
1	Go to <code>http://<vCenter-IP>/mob</code>	Find the VM UUID from the VMware Managed Objects URL. Note the uuid for the VM that you want to restore.
2	<code>/4.1/vm/{uuid}/backups</code>	Get VM Backups gets a list of backups for the specified VM. Pass the uuid from Step 1. Note the backupId of the backup you want to restore.
3	<code>/4.1/vm/backups/{backupId}/ snapshotlocations</code>	Get snapshot locations gets the location of the Snapshot for the specified backup. Pass the backupId from Step 2. Note the snapshotLocationsList information.
4	<code>/4.1/vm/{moref}/backups/ availableesxhosts</code>	Get available ESX Hosts gets the information for the host on which the backup is stored. Note the availableEsxHostsList information.
5	<code>/4.1/vm/{uuid}/backups/ {backupId}/restore</code>	Restore VM from a backup using uuid or restore a deleted VM restores the specified backup. Pass the uuid from Step 1. Pass the backupId from Step 2. Pass the information from Steps 3 and 4 in the restoreLocations attribute. If the VM backup is a partial backup, set the restartVM parameter to "false". Note: You cannot restore a VM that is a template.

REST API workflow to restore VMDKs

To perform restore operations for VMDKs using the SnapCenter Plug-in for VMware vSphere REST APIs, you must follow the prescribed sequence of REST API calls.

For each REST API, add `https://<server>:<port>` at the front of the REST API to form a complete endpoint.

Step	REST API	Comments
1	Go to <code>http://<vCenter-IP>/mob</code>	Find the VM moref from the VMware Managed Objects URL. Note the moref for the VM in which the VMDK is located.
2	<code>/4.1/vm/{moref}/backups</code>	Get VM Backups gets a list of backups for the specified VM. Pass the moref from Step 1. Note the backupId of the backup you want to restore.
3	<code>/4.1/vm/backups/{backupId}/ snapshotlocations</code>	Get snapshot locations gets the location of the Snapshot for the specified backup. Pass the backupId from Step 2. Note the snapshotLocationsList information.
4	<code>/4.1/vm/{moref}/backups/ vmdklocations</code>	Get Vmdk Locations gets a list of VMDKs for the specified VM. Note the vmdkLocationsList information.
5	<code>/4.1/vm/{ moref}/backups/ {backupId}/ availabledatastores</code>	Get Available Datastores gets a list of datastores that are available for the restore operation. Pass the moref from Step 1. Pass the backupId from Step 2. Note the DatastoreNameList information.
6	<code>/4.1/vm/{moref}/backups/ availableesxhosts</code>	Get available ESX Hosts gets the information for the host on which the backup is stored. Pass the moref from Step 1. Note the availableEsxHostsList information.

Step	REST API	Comments
7	/4.1/vm/{moref}/backups/{backupId}/restorevmdks	<p>Restore a VMDK from a backup restores the specified VMDK from the specified backup. In the esxHost attribute, pass the information from availableEsxHostsList in Step 6. Pass the information from Steps 3 through 5 to the vmdkRestoreLocations attribute:</p> <ul style="list-style-type: none"> • In the restoreFromLocation attribute, pass the information from snapshotLocationsList in Step 3. • In the vmdkToRestore attribute, pass the information from vmdkLocationsList in Step 4. • In the restoreToDatastore attribute, pass the information from DatastoreNameList in Step 5.


REST API workflows to attach and detach VMDKs

To perform attach and detach operations for VMDKs using the SnapCenter Plug-in for VMware vSphere REST APIs, you must follow the prescribed sequence of REST API calls.

For each REST API, add `https://<server>:<port>` at the front of the REST API to form a complete endpoint.

To attach VMDKs, follow this workflow:

Step	REST API	Comments
1	Go to <code>http://<vCenter-IP>/mob</code>	Find the VM moref from the VMware Managed Objects URL. Note the moref for the VM to which you want to attach a VMDK.
2	/4.1/vm/{moref}/backups	Get VM Backups gets a list of backups for the specified VM. Pass the moref from Step 1. Note the backupId of the backup you want to restore.

Step	REST API	Comments
3	/4.1/vm/{moref}/backups/{backupId}/vmdklocations	Get VMDK Locations gets a list of VMDKs for the specified VM. Pass the backupId from Step 2 and the moref from Step 1. Note the vmdkLocationsList information.
4	/4.1/vm/{moref}/attachvmdks	<p>Attach VMDKs attaches the specified VMDK to the original VM. Pass the backupId from Step 2 and the moref from Step 1. Pass the vmdkLocationsList from Step 3 to the vmdkLocations attribute.</p> <div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;">  To attach a VMDK to a different VM, pass the moref of the target VM in the alternateVmMoref attribute. </div>

To detach VMDKs, follow this workflow:

Step	REST API	Comments
1	Go to <a href="http://<vCenter-IP>/mob">http://<vCenter-IP>/mob	Find the VM moref from the VMware Managed Objects URL. Note the moref for the VM on which you want to detach a VMDK.
2	/4.1/vm/{moref}/backups	Get VM Backups gets a list of backups for the specified VM. Pass the moref from Step 1. Note the backupId of the backup you want to restore.
3	/4.1/vm/{moref}/backups/{backupId}/vmdklocations	Get VMDK Locations gets a list of VMDKs for the specified VM. Pass the backupId from Step 2 and the moref from Step 1. Note the vmdkLocationsList information.
4	/4.1/vm/{moref}/detachvmdks	Detach VMDKs detaches the specified VMDK. Pass the moref from Step 1. Pass the VMDK vmdkLocationsList details from Step 3 to the vmdksToDetach attribute.

REST API workflows to mount and unmount datastores

To perform mount and unmount operations for datastore backups using the SnapCenter Plug-in for VMware vSphere REST APIs, you must follow the prescribed sequence of REST API calls.

For each REST API, add `https://<server>:<port>` at the front of the REST API to form a complete endpoint.

To mount datastores, follow this workflow:

Step	REST API	Comments
1	Go to <code>http://<vCenter-IP>/mob</code>	Find the datastore moref from the VMware Managed Objects URL. Note the moref for the datastore that you want to mount.
2	<code>/4.1/datastores/{moref}/backups</code>	Get the list of backups for a datastore gets a list of backups for the specified datastore. Pass the moref from Step 1. Note the backupId that you want to mount.
3	<code>/4.1/datastores/backups/{backupId}/snapshotLocations</code>	Get the list of Snapshot Locations gets details about the location of the specified backup. Pass the backupId from Step 2. Note the datastore and the location from the snapshotLocationsList list.
4	<code>/4.1/datastores/{moref}/availableEsxHosts</code>	Get the list of Available Esxi Hosts gets the list of ESXi hosts that are available for mount operations. Pass the moref from Step 1. Note the availableEsxHostsList information.
5	<code>/4.1/datastores/backups/{backupId}/mount</code>	Mount datastores for a backup mounts the specified datastore backup. Pass the backupId from Step 2. In the datastore and location attributes, pass the information from snapshotLocationsList in Step 3. In the esxHostName attribute, pass the information from availableEsxHostsList in Step 4.

To unmount datastores, follow this workflow:

Step	REST API	Comments
1	/4.1/datastores/backups/{backupId}/mounted	Get the list of mounted datastores. Note the datastore moref(s) that you want to unmount.
2	/4.1/datastores/unmount	UnMount datastores for a backup unmounts the specified datastore backup. Pass the datastore moref(s) from Step 1.

REST APIs to download jobs and generate reports

To generate reports and download logs for VMware vSphere client jobs using the SnapCenter Plug-in for VMware vSphere REST APIs, you must use the REST API calls for VMware vSphere.

For each REST API, add `https://<server>:<port>` at the front of the REST API to form a complete endpoint.

Use the following REST APIs in the Jobs section to get detailed information on jobs:

REST API	Comments
/4.1/jobs	Get all jobs gets the job details for multiple jobs. You can narrow the scope of the request by specifying a job type, such as backup, mountBackup, or restore.
/4.1/jobs/{id}	Get job details gets detailed information for the specified job.

Use the following REST API in the Jobs section to download job logs:

REST API	Comments
/4.1/jobs/{id}/logs	getJobLogsById downloads the logs for the specified job.

Use the following REST APIs in the Reports section to generate reports:

REST API	Comments
4.1/reports/protectedVM	Get Protected VM List gets a list of the protected VMs during the last seven days.

REST API	Comments
/4.1/reports/unProtectedVM	Get Unprotected VM List gets a list of the unprotected VMs during the last seven days.

REST API workflow to modify built-in schedules

To modify built-in schedules for VMware vSphere client jobs using the SnapCenter Plug-in for VMware vSphere REST APIs, you must follow the prescribed sequence of REST API calls.

Built-in schedules are the schedules that are provided as part of the product; for example, the MySQL database dump schedule. You can modify the following schedules:

Schedule-DatabaseDump
Schedule-PurgeBackups
Schedule-AsupDataCollection
Schedule-ComputeStorageSaving
Schedule-PurgeJobs

For each REST API, add `https://<server>:<port>` at the front of the REST API to form a complete endpoint.

Step	REST API	Comments
1	/4.1/schedules	Get all built-in schedules gets a list of the job schedules that were originally provided in the product. Note the schedule name that you want to modify and the associated cron expression.
2	/4.1/schedules	Modify any built-in schedule changes the named schedule. Pass the schedule name from Step 1 and create a new cron expression for the schedule.

REST API to mark stuck jobs as failed

To find job IDs for VMware vSphere client jobs using the SnapCenter Plug-in for VMware vSphere REST APIs, you must use the REST API calls for VMware vSphere. These REST APIs were added in SnapCenter Plug-in for VMware vSphere 4.4.

For each REST API, add `https://<server>:<port>` at the front of the REST API to form a complete endpoint.

Use the following REST API in the Jobs section to change jobs that are stuck in a running state to a failed state:

REST API	Comments
/4.1/jobs/{id}/failJobs	When you pass the IDs of jobs that are stuck in a running state, <code>failJobs</code> marks those jobs as failed. To identify jobs that are stuck in a running state, use the job monitor GUI to see the state of every job and the job ID.

REST APIs to generate audit logs

You can collect the audit log details from swagger rest APIs as well as the SCV plugin user interface.

Given below are the swagger rest APIs:

1. GET 4.1/audit/logs: Get audit data for all logs
2. GET 4.1/audit/logs/{filename}: Get audit data for a specific log file
3. POST 4.1/audit/verify: Trigger audit log verification.
4. GET 4.1/audit/config: Get the audit and syslog server config
5. PUT 4.1/audit/config: Update the audit and syslog server config

To generate audit logs for VMware vSphere client jobs using the SnapCenter Plug-in for VMware vSphere REST APIs, you must use the REST API calls for VMware vSphere.

For each REST API, add `https://<server>:<port>/api` at the front of the REST API to form a complete endpoint.

Use the following REST APIs in the Jobs section to get detailed information on jobs:

REST API	Comments
4.1/audit/logs	returns audit log files with integrity data
4.1/audit/logs/{filename}	get specific audit log file with integrity data
4.1/audit/verify	triggers audit verification
4.1/audit/syslogcert	updates the syslog server certificate

Copyright information

Copyright © 2024 NetApp, Inc. All Rights Reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means—graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system—without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP “AS IS” AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

LIMITED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (b)(3) of the Rights in Technical Data -Noncommercial Items at DFARS 252.227-7013 (FEB 2014) and FAR 52.227-19 (DEC 2007).

Data contained herein pertains to a commercial product and/or commercial service (as defined in FAR 2.101) and is proprietary to NetApp, Inc. All NetApp technical data and computer software provided under this Agreement is commercial in nature and developed solely at private expense. The U.S. Government has a non-exclusive, non-transferrable, nonsublicensable, worldwide, limited irrevocable license to use the Data only in connection with and in support of the U.S. Government contract under which the Data was delivered. Except as provided herein, the Data may not be used, disclosed, reproduced, modified, performed, or displayed without the prior written approval of NetApp, Inc. United States Government license rights for the Department of Defense are limited to those rights identified in DFARS clause 252.227-7015(b) (FEB 2014).

Trademark information

NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.