REST APIs

SnapCenter Plug-in for VMware vSphere

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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 Plug-in for VMware vSphere
  - 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 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 SnapCenter Plug-in for VMware vSphere.

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 SnapCenter Plug-in for VMware vSphere 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/{resouceGroupId}`	`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 `http://<vCenter-IP>/mob`	Find the VM moref from the VMware Managed Objects URL. Note the **moref** for the VM that you want to restore.
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/backups/{backupId}/snapshotlocations`	`Get snapshot locations` gets the location of the Snapshot for the specified backup. Pass the **backupId** from Step 2. Note the **snapshotLocationsList** information.
4	`/4.1/vm/{moref}/backups/availableesxhosts`	`Get available ESX Hosts` gets the information for the host on which the backup is stored. Note the **availableEsxHostsList** information.
5	`/4.1/vm/{moref}/backups/{backupId}/restore`	`Restore a VM from a backup` restores the specified backup. 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". You cannot restore a VM that is a template.

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 `http://<vCenter-IP>/mob`	Find the VM UUID from the VMware Managed Objects URL. Note the **uuid** for the VM that you want to restore.
2	`/4.1/vm/{uuid}/backups`	`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	`/4.1/vm/backups/{backupId}/snapshotlocations`	`Get snapshot locations` gets the location of the Snapshot for the specified backup. Pass the **backupId** from Step 2. Note the **snapshotLocationsList** information.
4	`/4.1/vm/{moref}/backups/availableesxhosts`	`Get available ESX Hosts` gets the information for the host on which the backup is stored. Note the **availableEsxHostsList** information.
5	`/4.1/vm/{uuid}/backups/{backupId}/restore`	`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 `http://<vCenter-IP>/mob`	Find the VM moref from the VMware Managed Objects URL. Note the **moref** for the VM in which the VMDK is located.
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/backups/{backupId}/snapshotlocations`	`Get snapshot locations` gets the location of the Snapshot for the specified backup. Pass the **backupId** from Step 2. Note the **snapshotLocationsList** information.
4	`/4.1/vm/{moref}/backups/vmdklocations`	`Get Vmdk Locations` gets a list of VMDKs for the specified VM. Note the **vmdkLocationsList** information.
5	`/4.1/vm/{ moref}/backups/{backupId}/availabledatastores`	`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	`/4.1/vm/{moref}/backups/availableesxhosts`	`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`	`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: • 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 `http://<vCenter-IP>/mob`	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`	`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. To attach a VMDK to a different VM, pass the moref of the target VM in the alternateVmMoref attribute.

To detach VMDKs, follow this workflow:

Step	REST API	Comments
1	Go to `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 `http://<vCenter-IP>/mob`	Find the datastore moref from the VMware Managed Objects URL. Note the **moref** for the datastore that you want to mount.
2	`/4.1/datastores/{moref}/backups`	`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	`/4.1/datastores/backups/{backupId}/snapshotlocators`	`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	`/4.1/datastores/{moref}/availableEsxHosts`	`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	`/4.1/datastores/backups/{backupId}/mount`	`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, `failJobs` 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

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