IBM Spectrum Protect Plus
Version 10.1.1

REST API Developer Guide

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Note:
Before you use this information and the product it supports, read the information in "Notices" at the end of this publication.

This edition applies to version 10, release 1, modification 1 of IBM Spectrum Protect Plus (product number 5737-F11) and to all subsequent releases and modifications until otherwise indicated in new editions.

Table of Contents

IBM Spectrum Protect Plus

This document presents API usage guidelines. The examples are for illustration only and should not be explicitly used for production.

Chapter 1. Welcome

The documentation in this Developer Guide provides information for the IBM Spectrum Protect Plus API based on the RESTful framework. Use this RESTful API to connect your applications to product components in order to query information about objects and to perform basic operations by using HTTP protocols and the principles of RESTful API.

This application programming interface uses RESTful architecture designed to work with web-based applications in a simplified way, by using four basic HTTP methods for applications to interact with: GET, POST, PUT, and DELETE.

```
This Developer Guide contains several RESTful API interaction examples that demonstrate
basic functions such as getting a session ID, assigning a VM, and starting a job.
Additionally, this guide discusses RESTful API conventions and security concepts.
```

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To keep the text in the examples brief, some of the error checking has been omitted.

Chapter 2. Quick Start

This is a simple example of interacting with the API using curl to retrieve a session ID.

```
curl -X POST -i -H 'Accept:application/json' -H 'Content-type:application/json' --user
"username:password" https://<hostname|IP>/api/endeavour/session
```

Chapter 3. Conventions

The following are conventions that cover HATEOAS, Pagination, Filtering, etc.

3.1. JSON

RESTful API requests and responses are in JSON format.

3.2. HATEOAS

Responses also support Hypermedia as the Engine of Application State. The main component of HATEOAS is the notion of discoverability. The client application must discover, via Hypermedia or response links, resources that are accessible within the response. This means the client does not require up front knowledge of methods of resource interaction.

HATEOAS is primarily driven by the response's link format. The examples in this document offer a sense of how the RESTful API is designed and what responses are expected.

3.3. Discoverability Links

```
{
  "links": {
    "<namedLink>": {
      "rel": "self|up|create|update|delete|related|action"
    }
  }
}
```

3.4. Predefined Name Links

This example assumes that users are configured within the system. By default, there is a user predefined. Consult the documentation for user credential specifics.

3.4.1. self

```
{
  "self": {
    "rel": "self",
    "href": "https://<hostname|IP>/api/endeavour/policy/1001"
  }
}
```

3.4.2. up

Returns one level up on directory path.

```
{
  "up": {
    "rel": "up",
    "href": "https://<hostname|IP>/api/endeavour/policy"
  }
}
```

3.4.3. create

```
{
  "create": {
    "rel": "create",
    "href": "https://<hostname|IP>/api/endeavour/policy"
  }
}
```

3.4.4. edit

```
{
  "edit": {
    "rel": "edit",
    "href": "https://<hostname|IP>/api/endeavour/policy/1001"
  }
}
```

3.4.5. delete

```
{
  "delete": {
    "rel": "delete",
    "href": "https://<hostname|IP>/api/endeavour/policy/1001"
  }
}
```

3.5. Headers

The following headers are required for every RESTful API operation:

Header	Description
x-endeavour-sessionid	with a valid sessionid value.
x-endeavour-auditrequest	with the value set to true or false; true indicates that the call is tracked in the audit log.
Content-Type	with the value set to application/json.
Accept	with the value set to application/json.

3.6. Verbs

This product tries to adhere as closely as possible to standard HTTP and REST conventions in its use of HTTP verbs.

Verb	Description
GET	Used to retrieve a resource
POST	Used to create a new resource
PUT	Used to update an existing resource, including partial updates
DELETE	Used to delete an existing resource

3.7. Status Codes

This product tries to adhere as closely as possible to standard HTTP and REST conventions in its use of HTTP status codes.

Status code	Usage
200 OK	The request completed successfully
201 Created	A new resource has been created successfully. The resource's URI is available from the response's Location header
204 No Content	An update to an existing resource has been applied successfully
400 Bad Request	The request was malformed. The response body will include an error providing further information
401 Unauthrorized	Login attempt with invalid credentials
403 Forbidden	Generally related to permissioning through Role Base Access Control

Status code	Usage
404 Not Found	The requested resource did not exist
405 Method Not Allowed	URL is unsupported
500 Unrecoverable Error	Diagnosed in Virgo log
503 Service Unavailable	This status is returned when too many requests are going to the same controller

For additional information, visit https://en.wikipedia.org/wiki/List_of_HTTP_status_codes .

3.8. Pagination

Many GET RESTful APIs support pagination using the following syntax:

GET

```
https://<hostname|IP>/api/endeavour/trigger?pageSize=25&pageStartIndex=50
```

3.9. Sorting

Many GET RESTful APIs support sorting using the following syntax, without the line breaks:

GET

```
https://<hostname|IP>/api/endeavour/trigger?sort=[{"property":"name","direction":"ASC"},{
"property":"date","direction":"DESC"}]
```

3.10. Filtering

Filtering of results is supported. The following is an example of filtering schedules, without the line breaks:

GET

```
https://<hostname|IP>/api/endeavour/trigger?filterType=all&filter=[{"property":"name","op
":"=","value":"Daily"},{"property":"creationDate","op":"<","value":"1234567890"}]
```

filterType can either be all or any. All must match all criteria, any must match any criteria. Also, operator is a SQL operator, such as <, ⇐, =. !=,>=, >, <>, IN. If operator is not specified, = is the default value.

3.11. Embedded Objects

You can embed a related link in the response. To do this, add the embed query parameter. Following is the parameter format:

GET

```
https://<hostname|IP>/api/endeavour/job?embed=(policy)
```

This eliminates round trips to the server when retrieving job resources that are tied to specific policies. An embedded policy object can be returned for each job within the response of a job list request.

3.12. Actions

RESTful API leverages HTTP verbs to perform resource-based operations. See Verbs in this document. The "POST" verb along with a JSON request body manages the execution of various actions. The action is specified as a query parameter called action on the URI. The following is an example of performing an action:

POST

```
https://<hostname|IP>/api/hypervisor/{hypervisorId}/vm/{vmid}?action=createSnapshot
```

3.12.1. Action Request Body

```
{
  "name": "snapshot.1"
}
```

An Action Request Body is not required for all action calls. A "schema" link can be used to provide action context.

Chapter 4. Examples

The following sections walk through the APIs used to accomplish implementing various operations. All APIs, except a POST to the session endpoint, require a session id passed in the header, so we start with getting a session id. The next example shows how to perform search operations with the session id. This is followed by a set of examples that show how to programmatically register a resource provider, create a policy with it, use the policy to create a job, run the job and then monitor it.

4.1. Getting a Session ID

This example assumes that users have been configured within the system. By default there is a user predefined within IBM Spectrum Protect Plus. Consult the IBM Spectrum Protect Plus documentation for user credential specifics.

4.1.1. Headers

The following headers are required for every RESTful API operation:

Header	Description
x-endeavour-sessionid	with a valid sessionid value.
x-endeavour-auditrequest	with the value set to true or false; true indicates that the call is tracked in the audit log.
Content-Type	with the value set to application/json.
Accept	with the value set to application/json.

4.1.2. Endpoint

POST	/api/endeavour/session

This product uses HTTP's basic authentication mechanism where the user name and password should be sent in the Authorization header. The user name and password need to be base64 encoded. When a POST operation to the endpoint above is performed which includes a valid Authorization header, the corresponding response will contain a session-id, which can then be used for subsequent API calls.

4.1.3. Request

The following example provides the steps for establishing the session-id using Google's Chrome Postman rest client. You can also refer to the **Quick Start** section at the beginning of the document to see an example using **curl**.

1) In the Basic Auth tab enter the username and password.

2) Click the Refresh headers button. A base encoded string will be produced.

3) Enter the following URL : https://ipaddress/api/endeavour/session

4) Select the POST operation

5) With the Authorization header set you can now hit send, which will execute a Post operation against the https://ipaddress/api/endeavour/session endpoint.

6) The following response, which includes the session-id value, is returned.

4.1.4. Response

```
{
  "sessionid": "1b78453f1256c700",
  "user": {
    "links": {
      "self": {
        "rel": "self",
        "href": "https://<hostname|IP>/api/endeavour/user/1000"
      },
      "up": {
        "rel": "up",
        "href": "https://<hostname|IP>/api/endeavour/user"
      },
      "edit": {
        "rel": "update",
        "href": "https://<hostname|IP>/api/endeavour/user/1000"
      },
      "roles": {
        "rel": "related",
        "href": "https://<hostname|IP>/api/endeavour/user/1000/role"
      },
      "changePassword": {
        "rel": "action",
        "href": "https://<hostname|IP>/api/endeavour/user/1000?action=changePassword"
      }
    },
    "name": "admin",
    "type": "NATIVE_USER",
    "roles": [
      {
        "links": {
          "self": {
            "rel": "self",
            "href": "https://<hostname|IP>/api/endeavour/role/1000"
          },
          "up": {
            "rel": "up",
            "href": "https://<hostname|IP>/api/endeavour/role"
          }
        },
        "name": "SUPERUSER",
        "id": "1000"
      }
    ],
    "id": "1000"
  }
}
```

The response contains the session id as well as the information for the logged in user. This information is exactly the same as that returned by a GET call against the following URI:

```
/api/endeavour/user/{userID}.
```

All further requests must include the session-id in the custom header x-endeavour-sessionid.

4.2. Assign VM to a Policy

4.2.1. Request

Assign VM to a Policy: Request Example

```
POST:

https://<hostname|IP>/ngp/hypervisor?action=applySLAPolicies
```

4.2.2. Request Body

Assign VM to a Policy: Request Body Parameters

Property	Sample Value	Element of	Description
"subtype"	"vmware"		Type of hypervisor either vmware or Hyper-v
"version"	"1.0"		
"resources"			
"href"	"https://<hostname>/api/hypervisor/1003?from=hlo"	"resources"	Link to resource
"id"	"1003"	"resources"	ID of resource
"metadataPath"	"/MS:1003"	"resources"	
"slapolicies"			
"href"	"https://<hostname>/api/spec/storageprofile/2103	"slapolicies"	System generated id for SLA Policy
"id"	"2103"	"slapolicies"	ID of SLA policy to be attached with
"name"	"Bronze"	"slapolicies"	Name of the SLA Policy

Assign VM to a Policy: Request Body Example

```
{
  "subtype": "vmware",
  "version": "1.0",
  "resources": [
    {
      "href": "https://<hostname|IP>/api/hypervisor/1003?from=hlo",
      "id": "1003",
      "metadataPath": "/MS:1003"
    }
  ],
  "slapolicies": [
    {
      "href": "https://<hostname|IP>/api/spec/storageprofile/2103",
      "id": "2103",
      "name": "Bronze"
    }
  ]
}
```

4.2.3. Response

Assign VM to a Policy: Response Example

```
{"statusCode":201,"response":null}
```

4.3. Create an SLA Policy

4.3.1. Request

Create an SLA Policy: Request Example

```
POST:
https://<hostname|IP>/ngp/slapolicy
```

4.3.2. Request Body

Create an SLA Policy: Request Body Parameters

Property	Sample Value	Element of	Description
"name"	"jltest"		Name of SLA
"version"	"1.0"		
"spec"			Specifications list of json type
"simple"	true	"spec"	
"subpolicy"		"spec"	
"type"	"REPLICATION"	"subpolicy"	Describes the type of operation for SLA
"software"	true	"subpolicy"	If set to true: (which is default), then it will perform a VMCopy, if set to false, it will perform replication.
"retention"		"subpolicy"	Parent element of age, site and software
"age"	15	"retention"	Number of backup days to retain the primary copy
"trigger"		"subpolicy"	Parent element of frequency, trigger and type
"frequency"	1	"trigger"	Number of times data has to be retained

Property	Sample Value	Element of	Description
"type"	"DAILY"	"trigger"	Describes the occurrence of trigger action
"activateDate"	1508299200000	"trigger"	Creation date for SLA Policy
"site"	"Primary"	"subpolicy"	

Create an SLA Policy: Request Body Example

```
{
  "name": "jltest",
  "version": "1.0",
  "spec": {
    "simple": true,
    "subpolicy": [
      {
        "type": "REPLICATION",
        "software": true,
        "retention": {
          "age": 15
        },
        "trigger": {
          "frequency": 1,
          "type": "DAILY",
          "activateDate": 1508299200000
        },
        "site": "Primary"
      }
    ]
  }
}
```

4.3.3. Response

Create an SLA Policy: Response Body Parameters

Property	Sample Value	Element of	Description
"statusCode"	201		Indicates if SLA was created or not
"response"			Contains all the information about SLA

Property	Sample Value	Element of	Description
"spec"		"response"	json array of simple and subpolicy array
"simple"	true	"spec"	
"subpolicy"			Parent element of retention and trigger
"name"	"VM Replication0"	"subpolicy"	Name of SLA
"description"	"VM Replication0"	"subpolicy"	
"type"	"VMCOPY"	"subpolicy"	Type can be either VMcopy or replication.
"spec"		"subpolicy"	Parent element of subpolicy
"source"		"spec"	Describes the where SLA policy has ebeen applied
"primarysource"	true	"source"	
"name"	""	"source"	
"option"		"subpolicy"	
"retention"		"option"	Describes the age
"age"	15	"retention"	Number of backup days to retain the primary copy
"maxquotasize"	0	"option"	For future use
"maxquotanumber"	0	"option"	For future use
"subpolicylabel"	"VM Replication0"	"option"	For future use
"disablesystemsnapshotpolicy"	false	"option"	For future use
"skipreadonlydatastores"	true	"option"	For future use
"label"	""	"option"	For future use
"targetDatastoreType"	"NFS"	"option"	For future use
"vmcopyptargetvolumeprefix"	""	"option"	For future use
"fullcopymethod"	"clone"	"option"	For future use

Property	Sample Value	Element of	Description
"destination"		"subpolicy"	Parent element of target
"target"		"destination"	Parent element of href, resource type and id
"href"	"https://<hostname>/api/site/1000"	"target"	Link where the snapshot or copy is stored
"resourceType"	"site"	"target"	
"id"	"1000"	"target"	System generated value
"trigger"		"spec"	Parent element of frequency, trigger and type
"frequency"	1	"trigger"	Number of times data has to be retained
"type"	"DAILY"	"trigger"	Describes the occurrence of trigger action
"activateDate"	1508299200000	"trigger"	Creation date for SLA Policy
"id"	"2107"	"spec"	
"description"	null	"response"	
"id"	"2104"	"response"	ID of SLA
"name"	"jltest"	"response"	Name of the SLA
"type"	null	"response"	
"subType"	null	"response"	
"rbacPath"	"root:0/storageprofile:0/storageprofiletype:dummy/storageprofile:2104"	"response"	

Create an SLA Policy: Response Example

```
{
  "statusCode": 201,
  "response": {
    "links": {
      "self": {
        "rel": "self",
        "href": "https://<hostname|IP>/api/spec/storageprofile/2104"
```

```
      },
      "up": {
        "rel": "up",
        "href": "https://<hostname|IP>/api/spec/storageprofile"
      },
      "edit": {
        "rel": "edit",
        "href": "https://<hostname|IP>/api/spec/storageprofile/2104"
      },
      "delete": {
        "rel": "delete",
        "href": "https://<hostname|IP>/api/spec/storageprofile/2104"
      }
    },
    "spec": {
      "simple": true,
      "subpolicy": [
        {
          "name": "VM Replication0",
          "description": "VM Replication0",
          "type": "VMCOPY",
          "spec": {
            "source": {
              "primarysource": true,
              "name": ""
            },
            "option": {
              "retention": {
                "age": 15
              },
              "maxquotasize": 0,
              "maxquotanumber": 0,
              "subpolicylabel": "VM Replication0",
              "disablesystemsnapshotpolicy": false,
              "skipreadonlydatastores": true,
              "label": "",
              "targetDatastoreType": "NFS",
              "vmcopyptargetvolumeprefix": "",
              "fullcopymethod": "clone"
            },
            "destination": {
              "target": {
                "href": "https://<hostname|IP>/api/site/1000",
                "resourceType": "site",
                "id": "1000"
              }
            }
          },
```

```
          "trigger": {
            "frequency": 1,
            "type": "DAILY",
            "activateDate": 1508299200000
          },
          "id": "2107"
        }
      ]
    },
    "description": null,
    "id": "2104",
    "name": "jltest",
    "type": null,
    "subType": null,
    "rbacPath": "root:0/storageprofile:0/storageprofiletype:dummy/storageprofile:2104"
  }
}
```

4.4. Delete an SLA Policy

4.4.1. Request

Delete an SLA Policy: Request Example

```
DELETE:
https://<hostname|IP>/ngp/slapolicy/JLTEST3
```

4.5. Start a Job

4.5.1. Attaining the Job ID

The POST request shown later in this topic requires a job id as an input parameter. To retrieve the job id and other job information given only a policy name, such as "vmware_Gold" in this example, use this GET request:

```
GET:
https://<hostname|IP>/api/endeavour/job?filter=[{"property":"name","op":"="
,"value":"vmware_Gold"}]
```

The associated response follows. The response reports job specific details including job id.

```
{
  "links": {
    "self": {
      "rel": "self",
      "href":
"https://<hostname|IP>/api/endeavour/job?pageSize=50&pageStartIndex=0&filter=%5B%7B%22pro
perty%22:%22name%22,%22op%22:%22%3D%22,%22value%22:%22vmware_Gold%22%7D%5D"
    },
    "up": {
      "rel": "up",
      "href": "https://<hostname|IP>/api/endeavour/job"
    },
    "create": {
      "rel": "create",
      "href": "https://<hostname|IP>/api/endeavour/job"
    },
    "stats": {
      "rel": "stats",
      "href": "https://<hostname|IP>/api/endeavour/job/stats"
    }
  },
  "jobs": [
    {
      "links": {
        "self": {
          "rel": "self",
          "href": "https://<hostname|IP>/api/endeavour/job/1343"
        },
        "up": {
          "rel": "up",
          "href": "https://<hostname|IP>/api/endeavour/job"
```

```
        },
        "delete": {
          "rel": "delete",
          "href": "https://<hostname|IP>/api/endeavour/job/1343"
        },
        "policyedit": {
          "rel": "update",
          "href": "https://<hostname|IP>/api/endeavour/policy/1347"
        },
        "policydelete": {
          "rel": "delete",
          "href": "https://<hostname|IP>/api/endeavour/policy/1347"
        },
        "edit": {
          "rel": "update",
          "href": "https://<hostname|IP>/api/endeavour/job/1343"
        },
        "policy": {
          "rel": "related",
          "href": "https://<hostname|IP>/api/endeavour/policy/1347"
        },
        "triggers": {
          "rel": "related",
          "href": "https://<hostname|IP>/api/endeavour/job/1343/trigger"
        },
        "jobsessions": {
          "rel": "related",
          "href":
"https://<hostname|IP>/api/endeavour/jobsession?filter=%5B%7B%22property%22:%22jobId%22,%
22value%22:%221343%22%7D%5D"
        },
        "activejobsessions": {
          "rel": "related",
          "href":
"https://<hostname|IP>/api/endeavour/jobsession?filter=%5B%7B%22property%22:%22status%22,
%22op%22:%22%3D%22,%22value%22:%22active%22%7D,%7B%22property%22:%22jobId%22,%22op%22:%22
%3D%22,%22value%22:%221343%22%7D%5D"
        },
        "pendingjobsessions": {
          "rel": "related",
          "href":
"https://<hostname|IP>/api/endeavour/jobsession?filter=%5B%7B%22property%22:%22status%22,
%22op%22:%22%3D%22,%22value%22:%22pending%22%7D,%7B%22property%22:%22jobId%22,%22op%22:%2
2%3D%22,%22value%22:%221343%22%7D%5D"
        },
        "historicaljobsessions": {
          "rel": "related",
          "href":
```

```
"https://<hostname|IP>/api/endeavour/jobsession?filter=%5B%7B%22property%22:%22status%22,
%22op%22:%22%3D%22,%22value%22:%22history%22%7D,%7B%22property%22:%22jobId%22,%22op%22:%2
2%3D%22,%22value%22:%221343%22%7D%5D"
        },
        "livejobsessions": {
          "rel": "related",
          "href":
"https://<hostname|IP>/api/endeavour/jobsession?filter=%5B%7B%22property%22:%22status%22,
%22op%22:%22%3D%22,%22value%22:%22live%22%7D,%7B%22property%22:%22jobId%22,%22op%22:%22%3
D%22,%22value%22:%221343%22%7D%5D"
        },
        "stats": {
          "rel": "related",
          "href": "https://<hostname|IP>/api/endeavour/jobsession/stats/jobid/1343"
        },
        "firetimes": {
          "rel": "related",
          "href":
"https://<hostname|IP>/api/endeavour/firetime?filter=%5B%7B%22property%22:%22jobId%22,%22
value%22:%221343%22%7D%5D"
        },
        "start": {
          "schema":
"https://<hostname|IP>/api/endeavour/job/1343/schema?actionname=start",
          "title": "Start",
          "rel": "action",
          "href":
"https://<hostname|IP>/api/endeavour/job/1343?action=start&actionname=start"
        },
        "hold Schedule": {
          "rel": "action",
          "href": "https://<hostname|IP>/api/endeavour/job/1343?action=hold"
        },
        "status": {
          "rel": "related",
          "href": "https://<hostname|IP>/api/endeavour/job/1343/status"
        },
        "lastrun": {
          "rel": "related",
          "href": "https://<hostname|IP>/api/endeavour/jobsession/1510154602082"
        },
        "lastrunlog": {
          "rel": "related",
          "href":
"https://<hostname|IP>/api/endeavour/log/job?filter=%5B%7B%22property%22:%22jobsessionId%
22,%22value%22:%2215101546020 82%22%7D%5D"
        }
      },
```

```
    "name": "vmware_Gold",
    "description": "Auto-generated job for Policy vmware_Gold",
    "policyId": "1347",
    "policyName": "vmware_Gold",
    "type": "protection",
    "subType": "vmware",
    "serviceId": "serviceprovider.protection.hypervisor",
    "displayName": "Hypervisor Backup",
    "status": "IDLE",
    "lastSessionStatus": "FAILED",
    "triggerIds": [
      "1006"
    ],
    "triggerData": [
      {
        "triggerId": "1006",
        "triggerInfo": {
          "storageworkflowid": "6",
          "storageworkflowname": "VADP"
        }
      }
    ],
    "lastRunTime": 1510154608322,
    "nextFireTime": 1510241002000,
    "lastSessionDuration": 909,
    "tenantId": 1000,
    "actions": null,
    "statistics": null,
    "lastrun": {
      "sessionId": "1510154602082",
      "jobName": "vmware_Gold",
      "type": "protection",
      "subType": "vmware",
      "serviceId": "serviceprovider.protection.hypervisor",
      "start": 1510154608322,
      "end": 1510154609231,
      "duration": 909,
      "status": "FAILED",
      "results": null,
      "properties": {
        "statistics": []
      },
      "numTasks": 2,
      "lastUpdate": 1510154609241,
      "percent": 0,
      "policySnapshot": null
    },
    "id": "1343"
```

```
    }
  ],
  "total": 1,
  "page": 1
```

The following request and response pertain to starting a job.

4.5.2. Request

Start a Job: Request Example

```
POST:
https://<hostname|IP>/api/endeavour/job/1343?action=start&actionname=start
```

4.5.3. Response

Start a Job: Response Body Parameters

Property	Sample Value	Element of	Description
"name"	"vmware_for_vm_admin"		Name of the job
"description"	"Auto-generated job for Policy vmware_for_vm_admin"		Describes what the particular job does
"policyId"	"1011"		Policy associated with the job
"policyName"	"vmware_for_vm_admin"		Name of the policy
"type"		"protection"	
"subType"	"vmware"		Type of the resource
"serviceId"	"serviceprovider.protection.hypervisor"		
"displayName"	"Hypervisor Backup"		Targeted resource and Targeted job on which policy is applied
"status"	"RUNNING"		Indicates the status of the resource; it can be active or running

Property	Sample Value	Element of	Description
"lastSessionStatus"	null		Describes if the job was successful or failed
"triggerIds"	[]		
"triggerData"	[]		Trigger operation associated
"lastRunTime"	0		Time it was started
"nextFireTime"	null		Next scheduled time when policy should run
"lastSessionDuration"	null		Total time spent on a job
"tenantId"	1000		Identify the users uniquely; for future use
"actions"	null		Lifecycle triggers of the job / state of the job
"statistics"	null		Stats about the policy
"policy"			
"spec"		"response"	
"source"	[ ]	"spec"	
"storageworkflow"		"spec"	
"id"	"2102"	"storageworkflow"	Policy ID
"name"	"for_vm_admin"	"storageworkflow"	value of property name for a specific job
"href"	"//<hostname>/api/spec/storageprofile/2102"	"storageworkflow"	HATEOS link
"type"	Null	"storageworkflow"	
"option"		"spec"	
"maxtasks"	0	"option"	For future use
"vmsnapshot"		"option"	For future use
"takesnapshot"	false	"vmsnapshot"	For future use
"concurrentsnapshotsonesx"	3	"vmsnapshot"	For future use
"includememory"	false	"vmsnapshot"	For future use
"consistency"	false	"vmsnapshot"	For future use

Property	Sample Value	Element of	Description
"consistencyvms"	[ ]	"vmsnapshot"	For future use
"scriptvms"	[ ]	"vmsnapshot"	For future use
"truncateapplicationlogs"	false	"vmsnapshot"	For future use
"skipreadonlydatastores"	true	"option"	
"notification"	[ ]	"spec"	
"lastrun"			Time the job ran last time
"sessionId"	"1508340858096"	"lastrun"	Uniquely identifies the session
"jobName"	"vmware_for_vm_admin"	"lastrun"	Name of the job
"type"	"protection"	"lastrun"	Type of the policy (protection , restore , inventory)
"subType"	"vmware"	"lastrun"	Type of the resource
"serviceId"	"serviceprovider.protection.hypervisor"	"lastrun"	
"start"	1508340858824	"lastrun"	Start time of the job
"end"	null	"lastrun"	End time of the job
"duration"	125141	"lastrun"	Total time to perform the job
"status"	"RUNNING"	"lastrun"	Progress of the job
"results"	null	"lastrun"	"properties"
null	"lastrun"	Statistic analyasis of the job	"numTasks"
2	"lastrun"	Numbers of tasks inside a policy	"lastUpdate"
1508340859409	"lastrun"		"percent"
0	"lastrun"		"policySnapshot"
null	"lastrun"	Metadata about the policy	"id"

Start a Job: Response Example


```
{
  "links": {
    "self": {
      "rel": "self",
      "href": "https://<hostname|IP>/api/endeavour/job/1343"
    },
    "up": {
      "rel": "up",
      "href": "https://<hostname|IP>/api/endeavour/job"
    },
    "delete": {
      "rel": "delete",
      "href": "https://<hostname|IP>/api/endeavour/job/1343"
    },
    "policyedit": {
      "rel": "update",
      "href": "https://<hostname|IP>/api/endeavour/policy/1343"
    },
    "policydelete": {
      "rel": "delete",
      "href": "https://<hostname|IP>/api/endeavour/policy/1343"
    },
    "edit": {
      "rel": "update",
      "href": "https://<hostname|IP>/api/endeavour/job/1343"
    },
    "policy": {
      "rel": "related",
      "href": "https://<hostname|IP>/api/endeavour/policy/1343"
    },
    "triggers": {
      "rel": "related",
      "href": "https://<hostname|IP>/api/endeavour/job/1343/trigger"
    },
    "jobsessions": {
      "rel": "related",
      "href":
"https://<hostname|IP>/api/endeavour/jobsession?filter=%5B%7B%22property%22:%22jobId%22,%
22value%22:%221343%22%7D%5D"
    },
    "activejobsessions": {
      "rel": "related",
      "href":
"https://<hostname|IP>/api/endeavour/jobsession?filter=%5B%7B%22property%22:%22status%22,
%22op%22:%22%3D%22,%22value%22:%22active%22%7D,%7B%22property%22:%22jobId%22,%22op%22:%22
```

```
%3D%22,%22value%22:%221343%22%7D%5D"
    },
    "pendingjobsessions": {
      "rel": "related",
      "href":
"https://<hostname|IP>/api/endeavour/jobsession?filter=%5B%7B%22property%22:%22status%22,
%22op%22:%22%3D%22,%22value%22:%22pending%22%7D,%7B%22property%22:%22jobId%22,%22op%22:%2
2%3D%22,%22value%22:%221343%22%7D%5D"
    },
    "historicaljobsessions": {
      "rel": "related",
      "href":
"https://<hostname|IP>/api/endeavour/jobsession?filter=%5B%7B%22property%22:%22status%22,
%22op%22:%22%3D%22,%22value%22:%22history%22%7D,%7B%22property%22:%22jobId%22,%22op%22:%2
2%3D%22,%22value%22:%221343%22%7D%5D"
    },
    "livejobsessions": {
      "rel": "related",
      "href":
"https://<hostname|IP>/api/endeavour/jobsession?filter=%5B%7B%22property%22:%22status%22,
%22op%22:%22%3D%22,%22value%22:%22live%22%7D,%7B%22property%22:%22jobId%22,%22op%22:%22%3
D%22,%22value%22:%221343%22%7D%5D"
    },
    "stats": {
      "rel": "related",
      "href": "https://<hostname|IP>/api/endeavour/jobsession/stats/jobid/1343"
    },
    "firetimes": {
      "rel": "related",
      "href":
"https://<hostname|IP>/api/endeavour/firetime?filter=%5B%7B%22property%22:%22jobId%22,%22
value%22:%221343%22%7D%5D"
    },
    "start": {
      "rel": "action",
      "href":
"https://<hostname|IP>/api/endeavour/job/1343?action=start&actionname=start"
    },
    "cancel": {
      "schema": "https://<hostname|IP>/api/endeavour/job/1343/schema?actionname=cancel",
      "title": "Cancel",
      "rel": "action",
      "href":
"https://<hostname|IP>/api/endeavour/job/1343?action=cancel&actionname=cancel"
    },
    "hold Schedule": {
      "rel": "action",
      "href": "https://<hostname|IP>/api/endeavour/job/1343?action=hold"
```

```
    },
    "status": {
      "rel": "related",
      "href": "https://<hostname|IP>/api/endeavour/job/1343/status"
    },
    "lastrun": {
      "rel": "related",
      "href": "https://<hostname|IP>/api/endeavour/jobsession/1508340858096"
    },
    "lastrunlog": {
      "rel": "related",
      "href":
"https://<hostname|IP>/api/endeavour/log/job?filter=%5B%7B%22property%22:%22jobsessionId%
22,%22value%22:%221508340858096%22%7D%5D"
    }
  },
  "name": "vmware_for_vm_admin",
  "description": "Auto-generated job for Policy vmware_for_vm_admin",
  "policyId": "1343",
  "policyName": "vmware_for_vm_admin",
  "type": "protection",
  "subType": "vmware",
  "serviceId": "serviceprovider.protection.hypervisor",
  "displayName": "Hypervisor Backup",
  "status": "RESOURCE ACTIVE",
  "lastSessionStatus": null,
  "triggerIds": [],
  "triggerData": [],
  "lastRunTime": 0,
  "nextFireTime": null,
  "lastSessionDuration": null,
  "tenantId": 1000,
  "actions": null,
  "statistics": null,
  "policy": {
    "links": {
      "self": {
        "rel": "self",
        "href": "https://<hostname|IP>/api/endeavour/policy/1343"
      },
      "up": {
        "rel": "up",
        "href": "https://<hostname|IP>/api/endeavour/policy"
      },
      "edit": {
        "rel": "update",
        "href": "https://<hostname|IP>/api/endeavour/policy/1343"
      },
```

```
      "delete": {
        "rel": "delete",
        "href": "https://<hostname|IP>/api/endeavour/policy/1343"
      },
      "jobs": {
        "rel": "related",
        "href":
"https://<hostname|IP>/api/endeavour/job?filter=%5B%7B%22property%22%3A%22policyId%22%2C%
22value%22%3A%221343%22%7D%5D"
      }
    },
    "name": "vmware_for_vm_admin",
    "type": "protection",
    "subType": "vmware",
    "serviceId": "serviceprovider.protection.hypervisor",
    "description": "",
    "version": "3.0",
    "rbacPath":
"root:0/policy:0/policytype:serviceprovider.protection.hypervisor/policy:1343",
    "tenantId": 1000,
    "creationTime": 1508178551618,
    "lastUpdated": 1508179076216,
    "spec": {
      "source": [],
      "storageworkflow": [
        {
          "id": "2102",
          "name": "for_vm_admin",
          "href": "//<hostname|IP>/api/spec/storageprofile/2102",
          "type": null
        }
      ],
      "option": {
        "maxtasks": 0,
        "vmsnapshot": {
          "takesnapshot": false,
          "concurrentsnapshotsonesx": 3,
          "includememory": false,
          "consistency": false,
          "consistencyvms": [],
          "scriptvms": [],
          "truncateapplicationlogs": false
        },
        "skipreadonlydatastores": true
      },
      "notification": []
    },
    "logicalDelete": false,
```

```
    "script": {
      "preScript": null,
      "postScript": null,
      "preSnap": null,
      "postSnap": null,
      "preGuest": null,
      "postGuest": null,
      "preGuestSnap": null,
      "postGuestSnap": null,
      "continueScriptsOnError": false
    },
    "id": "1343"
  },
  "triggers": [],
  "lastrun": {
    "sessionId": "1508340858096",
    "jobName": "vmware_for_vm_admin",
    "type": "protection",
    "subType": "vmware",
    "serviceId": "serviceprovider.protection.hypervisor",
    "start": null,
    "end": null,
    "duration": null,
    "status": "WAITING",
    "results": null,
    "properties": null,
    "numTasks": 0,
    "lastUpdate": 1508340858196,
    "percent": null,
    "policySnapshot": null
  },
  "id": "1343"
}
```

4.6. Cancel a Job

4.6.1. Request

Cancel a Job: Request Example

```
POST:
https://<hostname|IP>/api/endeavour/job/1011?action=cancel&actionname=cancel
```

4.6.2. Response

Cancel a Job: Response Parameters

Property	Sample Value	Element of	Description
"name"	"vmware_for_vm_admin"		Name of the cancelled job
"description"	"Auto-generated job for Policy vmware_for_vm_admin"		Describes what the particular cancelled job did
"policyId"	"1011"		Policy associated with the cancelled job
"policyName"	"vmware_for_vm_admin"		Name of the policy
"type"	"protection"		
"subType"	"vmware"		Type of the resource
"serviceId"	"serviceprovider.protection.hypervisor"		
"displayName"	"Hypervisor Backup"		Targeted resource and Targeted job on which cancelled policy is applied
"status"	"RUNNING"		Indicates the status of the resource; it can be active or running
"lastSessionStatus"	null		Status of the canceled job(failed / completed)
"triggerIds"	[]		Trigger related to a particular job

Property	Sample Value	Element of	Description
"triggerData"	[]		Trigger information related to a job
"lastRunTime"	0		Time the cancelled job was started
"nextFireTime"	null		Next scheduled time when policy should run
"lastSessionDuration"	null		Total time spent on a job
"tenantId"	1000		Identify the users uniquely; for future use
"actions"	null		Lifecycle triggers of the job /state of the job
"statistics"	null		Stats about the policy
"lastrun"	"lastrun"		Time job was started
"sessionId"	"1508340858096"	"lastrun"	Uniquely identifies the session
"jobName"	"vmware_for_vm_admin"	"lastrun"	Name of the job
"type"	"protection"	"lastrun"	
"subType"	"vmware"	"lastrun"	Type of hypervisor where the job last ran
"serviceId"	"serviceprovider.protection.hypervisor"	"lastrun"	
"start"	1508340858824	"lastrun"	
"end"	null	"lastrun"	
"duration"	125141	"lastrun"	
"status"	"RUNNING"	"lastrun"	Indicates the status of the resource; it can be active or running
"results"	null	"lastrun"	Stats about the job
"properties"	null	"lastrun"	
"numTasks"	2	"lastrun"	Numbers of tasks inside a policy
"lastUpdate"	1508340859409	"lastrun"	
"percent"	0	"lastrun"	

Property	Sample Value	Element of	Description
"policySnapshot"	null	"lastrun"	Metadata about the policy
"id"	"1011"		Id of the cancelled job

Cancel a Job: Response Example

```
{
  "links": {
    "self": {
      "rel": "self",
      "href": "https://<hostname|IP>/api/endeavour/job/1011"
    },
    "up": {
      "rel": "up",
      "href": "https://<hostname|IP>/api/endeavour/job"
    },
    "delete": {
      "rel": "delete",
      "href": "https://<hostname|IP>/api/endeavour/job/1011"
    },
    "policyedit": {
      "rel": "update",
      "href": "https://<hostname|IP>/api/endeavour/policy/1011"
    },
    "policydelete": {
      "rel": "delete",
      "href": "https://<hostname|IP>/api/endeavour/policy/1011"
    },
    "edit": {
      "rel": "update",
      "href": "https://<hostname|IP>/api/endeavour/job/1011"
    },
    "policy": {
      "rel": "related",
      "href": "https://<hostname|IP>/api/endeavour/policy/1011"
    },
    "triggers": {
      "rel": "related",
      "href": "https://<hostname|IP>/api/endeavour/job/1011/trigger"
    },
    "jobsessions": {
      "rel": "related",
      "href":
"https://<hostname|IP>/api/endeavour/jobsession?filter=%5B%7B%22property%22:%22jobId%22,%
```

```
22value%22:%221011%22%7D%5D"
    },
    "activejobsessions": {
      "rel": "related",
      "href":
"https://<hostname|IP>/api/endeavour/jobsession?filter=%5B%7B%22property%22:%22status%22,
%22op%22:%22%3D%22,%22value%22:%22active%22%7D,%7B%22property%22:%22jobId%22,%22op%22:%22
%3D%22,%22value%22:%221011%22%7D%5D"
    },
    "pendingjobsessions": {
      "rel": "related",
      "href":
"https://<hostname|IP>/api/endeavour/jobsession?filter=%5B%7B%22property%22:%22status%22,
%22op%22:%22%3D%22,%22value%22:%22pending%22%7D,%7B%22property%22:%22jobId%22,%22op%22:%2
2%3D%22,%22value%22:%221011%22%7D%5D"
    },
    "historicaljobsessions": {
      "rel": "related",
      "href":
"https://<hostname|IP>/api/endeavour/jobsession?filter=%5B%7B%22property%22:%22status%22,
%22op%22:%22%3D%22,%22value%22:%22history%22%7D,%7B%22property%22:%22jobId%22,%22op%22:%2
2%3D%22,%22value%22:%221011%22%7D%5D"
    },
    "livejobsessions": {
      "rel": "related",
      "href":
"https://<hostname|IP>/api/endeavour/jobsession?filter=%5B%7B%22property%22:%22status%22,
%22op%22:%22%3D%22,%22value%22:%22live%22%7D,%7B%22property%22:%22jobId%22,%22op%22:%22%3
D%22,%22value%22:%221011%22%7D%5D"
    },
    "stats": {
      "rel": "related",
      "href": "https://<hostname|IP>/api/endeavour/jobsession/stats/jobid/1011"
    },
    "firetimes": {
      "rel": "related",
      "href":
"https://<hostname|IP>/api/endeavour/firetime?filter=%5B%7B%22property%22:%22jobId%22,%22
value%22:%221011%22%7D%5D"
    },
    "start": {
      "rel": "action",
      "href": "//<hostname|IP>/api/endeavour/job/1011?action=start&actionname=start"
    },
    "hold Schedule": {
      "rel": "action",
      "href": "https://<hostname|IP>/api/endeavour/job/1011?action=hold"
    },
```

```
    "status": {
      "rel": "related",
      "href": "https://<hostname|IP>/api/endeavour/job/1011/status"
    },
    "lastrun": {
      "rel": "related",
      "href": "https://<hostname|IP>/api/endeavour/jobsession/1508340858096"
    },
    "lastrunlog": {
      "rel": "related",
      "href":
"https://<hostname|IP>/api/endeavour/log/job?filter=%5B%7B%22property%22:%22jobsessionId%
22,%22value%22:%221508340858096%22%7D%5D"
    }
  },
  "name": "vmware_for_vm_admin",
  "description": "Auto-generated job for Policy vmware_for_vm_admin",
  "policyId": "1011",
  "policyName": "vmware_for_vm_admin",
  "type": "protection",
  "subType": "vmware",
  "serviceId": "serviceprovider.protection.hypervisor",
  "displayName": "Hypervisor Backup",
  "status": "RUNNING",
  "lastSessionStatus": null,
  "triggerIds": [],
  "triggerData": [],
  "lastRunTime": 0,
  "nextFireTime": null,
  "lastSessionDuration": null,
  "tenantId": 1000,
  "actions": null,
  "statistics": null,
  "lastrun": {
    "sessionId": "1508340858096",
    "jobName": "vmware_for_vm_admin",
    "type": "protection",
    "subType": "vmware",
    "serviceId": "serviceprovider.protection.hypervisor",
    "start": 1508340858824,
    "end": null,
    "duration": 125141,
    "status": "RUNNING",
    "results": null,
    "properties": null,
    "numTasks": 2,
    "lastUpdate": 1508340859409,
    "percent": 0,
```

```
    "policySnapshot": null
  },
  "id": "1011"
}
```

4.7. Register a vCenter

4.7.1. Request

Register a vCenter: Request Example

```
POST:
https://<hostname|IP>/ngp/hypervisor
```

4.7.2. Request Body

Register a vCenter: Request Body Example

```
{"hostAddress":"<IP>","portNumber":443,"username":"ad.ibm.us\\qatester","password":"abcd"
,"sslConnection":true,"type":"vmware","opProperties":{"snapshotConcurrency":3}}
```

4.7.3. Response

Register a vCenter: Response Example

```
{
  "statusCode": 201,
  "response": {
    "links": {
      "self": {
        "rel": "self",
        "href": "//<hostname|IP>/api/hypervisor/1003"
      },
      "up": {
        "rel": "up",
        "href": "https://<hostname|IP>/api/hypervisor"
      },
      "edit": {
        "rel": "edit",
        "href": "https://<hostname|IP>/api/hypervisor/1003"
      },
      "delete": {
        "rel": "delete",
        "href": "https://<hostname|IP>/api/hypervisor/1003"
      },
      "usedby": {
        "rel": "related",
        "href":
```

```
"https://<hostname|IP>/api/endeavour/association/resource/hypervisor/1003?action=listUsin
gResources"
      },
      "clusters": {
        "rel": "related",
        "href": "https://<hostname|IP>/api/hypervisor/1003/cluster"
      },
      "hosts": {
        "rel": "related",
        "href": "https://<hostname|IP>/api/hypervisor/1003/host"
      },
      "vms": {
        "rel": "related",
        "href": "https://<hostname|IP>/api/hypervisor/1003/vm"
      },
      "vmgroups": {
        "rel": "related",
        "href": "https://<hostname|IP>/api/hypervisor/1003/vmgroup"
      },
      "volumes": {
        "rel": "related",
        "href": "https://<hostname|IP>/api/hypervisor/1003/volume"
      },
      "vmview": {
        "rel": "related",
        "href": "https://<hostname|IP>/api/hypervisor/1003/vmcontent"
      },
      "storageview": {
        "rel": "related",
        "href": "https://<hostname|IP>/api/hypervisor/1003/storagecontent"
      }
    },
    "name": "<IP>",
    "hostAddress": "<IP>",
    "user": {
      "href": "//<hostname|IP>/api/identity/user/1011"
    },
    "sslConnection": true,
    "portNumber": 443,
    "type": "vmware",
    "id": "1003",
    "uniqueId": "418ee9d2-7075-43cd-bdcd-c3bbe2980315",
    "siteName": "Primary",
    "properties": {},
    "logicalDelete": false,
    "opProperties": {
      "snapshotConcurrency": 3,
      "veServerInfo": {
```

```
        "name": null,
        "hostAddress": null,
        "portNumber": 0,
        "osType": null,
        "useKeyAuthentication": false,
        "osuser": null,
        "oskey": null
      }
    },
    "rbacPath": "root:0/site:0/site:1000/site.all.hypervisor:1000/hypervisor:1003",
    "resourceType": "hypervisor"
  }
}
```

4.8. Delete a vCenter

4.8.1. Request

Delete a vCenter: Request Example

```
DELETE:
https://<hostname|IP>/api/hypervisor/1003
```

4.9. Restore a Virtual Machine

4.9.1. Request

Restore a VM: Request Example

```
POST:
https://<hostname|IP>/ngp/hypervisor?action=restore
```

4.9.2. Request Body

Restore a VM: Request Body Parameters

Property	Sample Value	Element of	Description
"spec"			
"source"		"spec"	
"metadata"		"source"	
"name"	"AXADummy3"	"metadata"	Name of restore action
"resourceType"	"vm"	"source"	Type of the resource that needs to be associated. Resource can be either vm, vapp, datastore, vdisk, folder
"id"	"51e62d3f751e3efe0b1ac26c1948c1cc"	"source"	ID of VM
"include"	true	"source"	"version"
	"source"	Version of the resource to be recovered	
"metadata"		"version"	Metadata of VM
"useLatest"	false	"metadata"	Use the latest version of the resource for restore
"protectionTime"	"1508094130464"	"metadata"	
"subpolicy"		"spec"	
"type"	"IV"	"subpolicy"	RECOVERY Policy can either be IA(instant access) or IV (instant virtualization)

Property	Sample Value	Element of	Description
"destination"		"subpolicy"	
"systemDefined"	true	"destination"	Use whatever system defined subnet/IP address for destination after restoring to target location
"option"		"subpolicy"	
"protocolpriority"	"iSCSI"	"option"	Can either be FC or iSCI. The default is iSCI
"poweron"	false	"option"	
"continueonerror"	true	"option"	Continue restore operation even if some resources are failed to be restored
"autocleanup"	true	"option"	Automatically clean up resources on failure
"allowsessoverwrite"	true	"option"	If new scheduled session allowed to overwrite and force cleanup of pending old session
"mode"	"test"	"option"	Disk mode for vmdk, default is persistent
"vmscripts"	false	"option"	Scripts to run before/after restore operation

Restore a VM: Request Body Example

```
{
  "subType": "vmware",
  "spec": {
    "source": [
      {
        "href":
"https://<hostname|IP>/api/hypervisor/1001/vm/51e62d3f751e3efe0b1ac26c1948c1cc?from=recov
ery",
        "metadata": {
          "name": "AXADummy3"
        },
        "resourceType": "vm",
        "id": "51e62d3f751e3efe0b1ac26c1948c1cc",
        "include": true,
        "version": {
          "href":
"https://<hostname|IP>/api/hypervisor/1001/version/vm.51e62d3f751e3efe0b1ac26c1948c1cc.15
08094000071?from=recovery",
          "metadata": {
            "useLatest": false,
            "protectionTime": "1508094130464"
          }
        }
      }
    ],
    "subpolicy": [
      {
        "type": "IV",
        "destination": {
          "systemDefined": true
        },
        "option": {
          "protocolpriority": "iSCSI",
          "poweron": false,
          "continueonerror": true,
          "autocleanup": true,
          "allowsessoverwrite": true,
          "mode": "test",
          "vmscripts": false
        }
      }
    ]
  }
}
```

4.9.3. Response

Restore a VM: Response Parameters

Property	Sample Value	Element of	Description
"statusCode"	201		Indicates if the request was successful or not.
"response"		"response"	Contains all the information about the resource
"name"	"onDemandRestore_1508341891370"	"response"	Name of the user defined policy name
"description"	"Auto-generated job for Policy onDemandRestore_1508341891370"	"response"	User defined policy description
"policyId"	"1022"	"response"	Policy id number
"policyName"	"onDemandRestore_1508341891370"	"response"	User defined name
"type"	"recovery"	"response"	Policy type
"subType"	"vmware"	"response"	Type of hypervisor
"serviceId"	"serviceprovider.recovery.hypervisor"	"response"	
"displayName"	"Hypervisor Recovery"	"response"	Targeted resource and targeted job
"status"	"RESOURCE ACTIVE"	"response"	Indicates the status of the resource
"lastSessionStatus"	null	"response"	
"triggerIds"	[]	"response"	Trigger related to a job
"triggerData"	[]	"response"	Data of the particular trigger
"lastRunTime"	0	"response"	time when the last job ran
"nextFireTime"	null	"response"	Next scheduled time when policy should run
"lastSessionDuration"	null	"response"	Total time spent on a job

Property	Sample Value	Element of	Description
"tenantId"	1000	"response"	Identify the users uniquely; for future use
"actions"	null	"response"	Lifecycle triggers of the job /state of the job
"statistics"	null	"response"	Stats about the policy
"policy"		"response"	
"links"			
"self"		"links"	
"rel"	"self"	"self"	
"href"	"//<hostname>/api/endeavour/policy/1022"	"self"	
"up"		"links"	
"rel"	"up"	"up"	
"href"	"https://<hostname>/api/endeavour/policy"	"up"	
"edit"		"links"	
"rel"	"update"	"edit"	
"href"	"https://<hostname>/api/endeavour/policy/1022"	"edit"	
"delete"		"links"	
"rel"	"delete"	"delete"	
"href"	https://<hostname>/api/endeavour/policy/1022		
"delete"			
"jobs"		"links"	
"rel"	"related"	"jobs"	
"name"	"onDemandRestore_1508341891370"	"policy"	
"type"	"recovery"	"policy"	
"subtype"	"vmware"	"policy"	
"serviceId"	"serviceprovider.recovery.hypervisor"	"policy"	

Property	Sample Value	Element of	Description
"description"	""	"policy"	
"version"	"3.1"	"policy"	Describes the version of policy of the resource
"rbacPath"	"root:0/policy:0/policytype: serviceprovider.recovery.hypervisor /policy:1022"	"policy"	
"tenantId"	1000	"policy"	Identify the users uniquely; for future use
"creationTime"	1508341891415	"policy"	Time describing the creation time
"lastUpdated"	0	"policy"	
"spec"		"policy"	
"source"		"spec"	
"metadata"		"source"	
"name"	"AXADummy3"	"metadata"	Name of restore action
"resourceType"	"vm"	"source"	Type of the resource that needs to be associated. Resource can be either vm, vapp, datastore, vdisk, folder
"id"	"51e62d3f751e3efe0b1ac26c1948c1cc"	"source"	Id of VM
"include"	true	"source"	
"version"		"source"	Version of the resource to be recovered
"metadata"		"version"	
"useLatest"	false	"metadata"	Use the latest version of the resource for restore
"protectionTime"	"1508094130464"	"metadata"	
"subpolicy"		"spec"	

Property	Sample Value	Element of	Description
"type"	"IV"	"subpolicy"	RECOVERY Policy can either be IA(instant access) or IV (instant virtualization)
"destination"		"subpolicy"	
"systemDefined"	true	"subpolicy"	Use whatever system defined subnet/IP address for destination after restoring to target location
"option"			
"protocolpriority"	"iSCSI"	"option"	Can either be FC or iSCI. The default is iSCI
"poweron"	false	"option"	
"continueonerror"	true	"option"	Continue restore operation even if some resources are failed to be restored
"autocleanup"	true	"option"	Automatically clean up resources on failure
"allowsessoverwrite"	true	"option"	If new scheduled session allowed to overwrite and force cleanup of pending old session - default is true
"mode"	"test"	"option"	Disk mode for vmdk, default is persistent
"vmscripts"	false	"option"	Scripts to run before/after restore operation
"name"	"onDemandRestore_1508341891370"	"subpolicy"	
"logicalDelete"	false	"policy"	
"script"		"policy"	
"preScript"	null	"script"	Scripts description to run the restore operation

Property	Sample Value	Element of	Description
"postScript"	null	"script"	Script to run after the restore operation
"preSnap"	null	"script"	
"postSnap"	null	"script"	
"preGuest"		"script"	
"appserver"	null	"preGuest"	
"identity"	null	"preGuest"	
"script"	null	"preGuest"	
"postGuest"		"script"	
"appserver"	null	"postGuest"	
"identity"	null	"postGuest"	
"script"	null	"postGuest"	
"preGuestSnap"	null	"script"	
"postGuestSnap"	null	"script"	
"continueScriptsOnError"	false	"script"	
"id"	"1022"	"policy"	
"triggers"	[]	"response"	
"lastrun"		"response"	
"sessionId"	"1508341891139"	"lastrun"	Uniquely identifying the session
"jobName"	"onDemandRestore_1508341891370"	"lastrun"	Job last ran on the Hypervisor
"type"	"recovery"	"lastrun"	Type of job last run
"subType"	"vmware"	"lastrun"	Type of hypervisor
"serviceId"	"serviceprovider.recovery.hypervisor"	"lastrun"	
"start"	null	"lastrun"	Start time of the job last ran
"end"	null	"lastrun"	End time of the job
"duration"	null	"lastrun"	Total time to perform the job

Property	Sample Value	Element of	Description
"status"	"WAITING"	"lastrun"	Indicates the status of the resource; it can be active or running
"results"	null	"lastrun"	
"properties"	null	"lastrun"	Statistics analysis of the job
"numTasks"	0	"lastrun"	Number of tasks inside the policy
"lastUpdate"	1508341891721	"lastrun"	
"percent"	null	"lastrun"	
"policySnapshot"	null	"lastrun"	Metadata about the policy
"id"	"1021"	"response"	ID of the job

Restore a VM: Response Example

```
{
  "statusCode": 201,
  "response": {
    "links": {
      "self": {
        "rel": "self",
        "href": "https://<hostname|IP>/api/endeavour/job/1021"
      },
      "up": {
        "rel": "up",
        "href": "https://<hostname|IP>/api/endeavour/job"
      },
      "delete": {
        "rel": "delete",
        "href": "https://<hostname|IP>/api/endeavour/job/1021"
      },
      "policyedit": {
        "rel": "update",
        "href": "https://<hostname|IP>/api/endeavour/policy/1022"
      },
      "policydelete": {
        "rel": "delete",
        "href": "https://<hostname|IP>/api/endeavour/policy/1022"
      },
      "edit": {
```

```
        "rel": "update",
        "href": "https://<hostname|IP>/api/endeavour/job/1021"
      },
      "policy": {
        "rel": "related",
        "href": "https://<hostname|IP>/api/endeavour/policy/1022"
      },
      "triggers": {
        "rel": "related",
        "href": "https://<hostname|IP>/api/endeavour/job/1021/trigger"
      },
      "jobsessions": {
        "rel": "related",
        "href":
"https://<hostname|IP>/api/endeavour/jobsession?filter=%5B%7B%22property%22:%22jobId%22,%
22value%22:%221021%22%7D%5D"
      },
      "activejobsessions": {
        "rel": "related",
        "href":
"https://<hostname|IP>/api/endeavour/jobsession?filter=%5B%7B%22property%22:%22status%22,
%22op%22:%22%3D%22,%22value%22:%22active%22%7D,%7B%22property%22:%22jobId%22,%22op%22:%22
%3D%22,%22value%22:%221021%22%7D%5D"
      },
      "pendingjobsessions": {
        "rel": "related",
        "href":
"https://<hostname|IP>/api/endeavour/jobsession?filter=%5B%7B%22property%22:%22status%22,
%22op%22:%22%3D%22,%22value%22:%22pending%22%7D,%7B%22property%22:%22jobId%22,%22op%22:%2
2%3D%22,%22value%22:%221021%22%7D%5D"
      },
      "historicaljobsessions": {
        "rel": "related",
        "href":
"https://<hostname|IP>/api/endeavour/jobsession?filter=%5B%7B%22property%22:%22status%22,
%22op%22:%22%3D%22,%22value%22:%22history%22%7D,%7B%22property%22:%22jobId%22,%22op%22:%2
2%3D%22,%22value%22:%221021%22%7D%5D"
      },
      "livejobsessions": {
        "rel": "related",
        "href":
"https://<hostname|IP>/api/endeavour/jobsession?filter=%5B%7B%22property%22:%22status%22,
%22op%22:%22%3D%22,%22value%22:%22live%22%7D,%7B%22property%22:%22jobId%22,%22op%22:%22%3
D%22,%22value%22:%221021%22%7D%5D"
      },
      "stats": {
        "rel": "related",
        "href": "https://<hostname|IP>/api/endeavour/jobsession/stats/jobid/1021"
```

```
      },
      "firetimes": {
        "rel": "related",
        "href":
"https://<hostname|IP>/api/endeavour/firetime?filter=%5B%7B%22property%22:%22jobId%22,%22
value%22:%221021%22%7D%5D"
      },
      "start": {
        "schema": "https://<hostname|IP>/api/endeavour/job/1021/schema?actionname=start",
        "title": "Start",
        "rel": "action",
        "href":
"https://<hostname|IP>/api/endeavour/job/1021?action=start&actionname=start"
      },
      "hold Schedule": {
        "rel": "action",
        "href": "https://<hostname|IP>/api/endeavour/job/1021?action=hold"
      },
      "status": {
        "rel": "related",
        "href": "//<hostname|IP>/api/endeavour/job/1021/status"
      },
      "lastrun": {
        "rel": "related",
        "href": "//<hostname|IP>/api/endeavour/jobsession/1508341891139"
      },
      "lastrunlog": {
        "rel": "related",
        "href":
"https://<hostname|IP>/api/endeavour/log/job?filter=%5B%7B%22property%22:%22jobsessionId%
22,%22value%22:%221508341891139%22%7D%5D"
      }
    },
    "name": "onDemandRestore_1508341891370",
    "description": "Auto-generated job for Policy onDemandRestore_1508341891370",
    "policyId": "1022",
    "policyName": "onDemandRestore_1508341891370",
    "type": "recovery",
    "subType": "vmware",
    "serviceId": "serviceprovider.recovery.hypervisor",
    "displayName": "Hypervisor Recovery",
    "status": "RESOURCE ACTIVE",
    "lastSessionStatus": null,
    "triggerIds": [],
    "triggerData": [],
    "lastRunTime": 0,
    "nextFireTime": null,
    "lastSessionDuration": null,
```

```
    "tenantId": 1000,
    "actions": null,
    "statistics": null,
    "policy": {
      "links": {
        "self": {
          "rel": "self",
          "href": "//<hostname|IP>/api/endeavour/policy/1022"
        },
        "up": {
          "rel": "up",
          "href": "https://<hostname|IP>/api/endeavour/policy"
        },
        "edit": {
          "rel": "update",
          "href": "https://<hostname|IP>/api/endeavour/policy/1022"
        },
        "delete": {
          "rel": "delete",
          "href": "https://<hostname|IP>/api/endeavour/policy/1022"
        },
        "jobs": {
          "rel": "related",
          "href":
"https://<hostname|IP>/api/endeavour/job?filter=%5B%7B%22property%22%3A%22policyId%22%2C%
22value%22%3A%221022%22%7D%5D"
        }
      },
      "name": "onDemandRestore_1508341891370",
      "type": "recovery",
      "subType": "vmware",
      "serviceId": "serviceprovider.recovery.hypervisor",
      "description": "",
      "version": "3.1",
      "rbacPath":
"root:0/policy:0/policytype:serviceprovider.recovery.hypervisor/policy:1022",
      "tenantId": 1000,
      "creationTime": 1508341891415,
      "lastUpdated": 0,
      "spec": {
        "source": [
          {
            "href":
"https://<hostname|IP>/api/hypervisor/1001/vm/51e62d3f751e3efe0b1ac26c1948c1cc?from=recov
ery",
            "metadata": {
              "name": "AXADummy3"
            },
```

```
            "resourceType": "vm",
            "id": "51e62d3f751e3efe0b1ac26c1948c1cc",
            "include": true,
            "version": {
              "href":
"https://<hostname|IP>/api/hypervisor/1001/version/vm.51e62d3f751e3efe0b1ac26c1948c1cc.15
080940000071?from=recovery",
              "metadata": {
                "useLatest": false,
                "protectionTime": "1508094130464"
              }
            }
          }
        ],
        "subpolicy": [
          {
            "type": "IV",
            "destination": {
              "systemDefined": true
            },
            "option": {
              "protocolpriority": "iSCSI",
              "poweron": false,
              "continueonerror": true,
              "autocleanup": true,
              "allowsessoverwrite": true,
              "mode": "test",
              "vmscripts": false
            },
            "name": "onDemandRestore_1508341891370"
          }
        ]
      },
      "logicalDelete": false,
      "script": {
        "preScript": null,
        "postScript": null,
        "preSnap": null,
        "postSnap": null,
        "preGuest": {
          "appserver": null,
          "identity": null,
          "script": null
        },
        "postGuest": {
          "appserver": null,
          "identity": null,
          "script": null
```

```
        },
        "preGuestSnap": null,
        "postGuestSnap": null,
        "continueScriptsOnError": false
      },
      "id": "1022"
    },
    "triggers": [],
    "lastrun": {
      "sessionId": "1508341891139",
      "jobName": "onDemandRestore_1508341891370",
      "type": "recovery",
      "subType": "vmware",
      "serviceId": "serviceprovider.recovery.hypervisor",
      "start": null,
      "end": null,
      "duration": null,
      "status": "WAITING",
      "results": null,
      "properties": null,
      "numTasks": 0,
      "lastUpdate": 1508341891721,
      "percent": null,
      "policySnapshot": null
    },
    "id": "1021"
  }}
```

4.10. Get Job Sessions

4.10.1. Request

Get Job Sessions: Request Example

```
GET:
https://<hostname|IP>/api/endeavour/job
```

4.10.2. Response

Get Job Sessions: Response Example


```
{
  "links": {
    "self": {
      "rel": "self",
      "href": "https://<hostname|IP>/api/endeavour/job"
    },
    "up": {
      "rel": "up",
      "href": "https://<hostname|IP>/api/endeavour/job"
    },
    "create": {
      "rel": "create",
      "href": "https://<hostname|IP>/api/endeavour/job"
    },
    "stats": {
      "rel": "stats",
      "href": "https://<hostname|IP>/api/endeavour/job/stats"
    }
  },
  "jobs": [
    {
      "links": {
        "self": {
          "rel": "self",
          "href": "https://<hostname|IP>/api/endeavour/job/1007"
        },
        "up": {
          "rel": "up",
          "href": "https://<hostname|IP>/api/endeavour/job"
        },
        "delete": {
          "rel": "delete",
```

```
          "href": "https://<hostname|IP>/api/endeavour/job/1007"
        },
        "policyedit": {
          "rel": "update",
          "href": "https://<hostname|IP>/api/endeavour/policy/1007"
        },
        "policydelete": {
          "rel": "delete",
          "href": "https://<hostname|IP>/api/endeavour/policy/1007"
        },
        "edit": {
          "rel": "update",
          "href": "https://<hostname|IP>/api/endeavour/job/1007"
        },
        "policy": {
          "rel": "related",
          "href": "https://<hostname|IP>/api/endeavour/policy/1007"
        },
        "triggers": {
          "rel": "related",
          "href": "https://<hostname|IP>/api/endeavour/job/1007/trigger"
        },
        "jobsessions": {
          "rel": "related",
          "href":
"https://<hostname|IP>/api/endeavour/jobsession?filter=%5B%7B%22property%22:%22jobId%22,%
22value%22:%221007%22%7D%5D"
        },
        "activejobsessions": {
          "rel": "related",
          "href":
"https://<hostname|IP>/api/endeavour/jobsession?filter=%5B%7B%22property%22:%22status%22,
%22op%22:%22%3D%22,%22value%22:%22active%22%7D,%7B%22property%22:%22jobId%22,%22op%22:%22
%3D%22,%22value%22:%221007%22%7D%5D"
        },
        "pendingjobsessions": {
          "rel": "related",
          "href":
"https://<hostname|IP>/api/endeavour/jobsession?filter=%5B%7B%22property%22:%22status%22,
%22op%22:%22%3D%22,%22value%22:%22pending%22%7D,%7B%22property%22:%22jobId%22,%22op%22:%2
2%3D%22,%22value%22:%221007%22%7D%5D"
        },
        "historicaljobsessions": {
          "rel": "related",
          "href":
"https://<hostname|IP>/api/endeavour/jobsession?filter=%5B%7B%22property%22:%22status%22,
%22op%22:%22%3D%22,%22value%22:%22history%22%7D,%7B%22property%22:%22jobId%22,%22op%22:%2
2%3D%22,%22value%22:%221007%22%7D%5D"
```

```
        },
        "livejobsessions": {
          "rel": "related",
          "href":
"https://<hostname|IP>/api/endeavour/jobsession?filter=%5B%7B%22property%22:%22status%22,
%22op%22:%22%3D%22,%22value%22:%22live%22%7D,%7B%22property%22:%22jobId%22,%22op%22:%22%3
D%22,%22value%22:%221007%22%7D%5D"
        },
        "stats": {
          "rel": "related",
          "href": "https://<hostname|IP>/api/endeavour/jobsession/stats/jobid/1007"
        },
        "firetimes": {
          "rel": "related",
          "href":
"https://<hostname|IP>/api/endeavour/firetime?filter=%5B%7B%22property%22:%22jobId%22,%22
value%22:%221007%22%7D%5D"
        },
        "start": {
          "schema":
"https://<hostname|IP>/api/endeavour/job/1007/schema?actionname=start",
          "title": "Start",
          "rel": "action",
          "href":
"https://<hostname|IP>/api/endeavour/job/1007?action=start&actionname=start"
        },
        "hold Schedule": {
          "rel": "action",
          "href": "https://<hostname|IP>/api/endeavour/job/1007?action=hold"
        },
        "status": {
          "rel": "related",
          "href": "https://<hostname|IP>/api/endeavour/job/1007/status"
        },
        "lastrun": {
          "rel": "related",
          "href": "https://<hostname|IP>/api/endeavour/jobsession/1519534800056"
        },
        "lastrunlog": {
          "rel": "related",
          "href":
"https://<hostname|IP>/api/endeavour/log/job?filter=%5B%7B%22property%22:%22jobsessionId%
22,%22value%22:%2215195348000056%22%7D%5D"
        }
      },
      "name": "vmware_Gold",
      "description": "",
      "policyId": "1007",
```

```
    "policyName": "vmware_Gold",
    "type": "protection",
    "subType": "vmware",
    "serviceId": "serviceprovider.protection.hypervisor",
    "displayName": "Hypervisor Backup",
    "status": "IDLE",
    "lastSessionStatus": "FAILED",
    "triggerIds": [
      "1017",
      "1018"
    ],
    "triggerData": [
      {
        "triggerId": "1017",
        "triggerInfo": {
          "subpolicy_id": "VM Replication0(2103)"
        }
      },
      {
        "triggerId": "1018",
        "triggerInfo": {
          "subpolicy_id": "Backup Storage Replication(2103)"
        }
      }
    ],
    "lastRunTime": 1519534802983,
    "nextFireTime": 1519621200000,
    "lastSessionDuration": 30782,
    "tenantId": 1000,
    "actions": null,
    "statistics": null,
    "lastrun": {
      "sessionId": "1519534800056",
      "jobName": "vmware_Gold",
      "type": "protection",
      "subType": "vmware",
      "serviceId": "serviceprovider.protection.hypervisor",
      "start": 1519534802983,
      "end": 1519534833765,
      "duration": 30782,
      "status": "FAILED",
      "results": null,
      "properties": {
        "statistics": [
          {
            "resourceType": "vm",
            "total": 1,
            "success": 0,
```

```
              "failed": 1
            },
            {
              "resourceType": "datastore",
              "total": 1,
              "success": 0,
              "failed": 0
            }
          ]
        },
        "numTasks": 2,
        "lastUpdate": 1519534833775,
        "percent": 60,
        "policySnapshot": null
      },
      "id": "1007"
    },
    ...
  ],
  "total": 12,
  "page": 1
}
```

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