



## **Metadata**

### **Cloud Manager Automation**

NetApp

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# Metadata

## Get GCP regions

This workflow retrieves the GCP regions in which a Cloud Volumes ONTAP working environment might be created.

### 1. Get the list of regions

HTTP method	Path
GET	/occm/api/gcp/vsa/metadata/regions

#### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/gcp/vsa/metadata/regions'
--header 'Content-Type: application/json' --header 'x-agent-id:
<AGENT_ID>' --header 'Authorization: Bearer <ACCESS_TOKEN>'
```

#### Input

None

#### Output

The JSON output provides an example of a list of GCP regions.

#### JSON output example

```
[
  {
    "displayName": "asia-east1",
    "name": "asia-east1",
    "zones": [
      {
        "name": "asia-east1-a"
      },
      {
        "name": "asia-east1-b"
      },
      {
        "name": "asia-east1-c"
      }
    ],
    "vpcs": [
      {
        "name": "default",
        "subnets": [
```

```

        {
            "ipCidrRange": "10.140.0.0/20",
            "name": "default",
            "path": "projects/occm-dev/regions/asia-
east1/subnetworks/default",
            "availableIps": 4090,
            "minimumRequiredIps": 6
        }
    ],
    "firewalls": [
        {
            "name": "allow-all",
            "vpc": "default"
        },
        {
            "name": "allow-ssh-netapp",
            "vpc": "default"
        }
    ]
},
{
    "name": "eli-vpc",
    "subnets": [
        {
            "ipCidrRange": "10.0.0.0/00",
            "name": "eli-subnet",
            "path": "projects/occm-dev/regions/asia-
east1/subnetworks/eli-subnet",
            "availableIps": 250,
            "minimumRequiredIps": 6
        }
    ],
    "firewalls": [
        {
            "name": "eli-vpc-allow-http",
            "vpc": "eli-vpc"
        },
        {
            "name": "eli-vpc-allow-https",
            "vpc": "eli-vpc"
        }
    ]
},
],
},
{

```

```

    "displayName": "asia-northeast1",
    "name": "asia-northeast1",
    "zones": [
      {
        "name": "asia-northeast1-a"
      },
      {
        "name": "asia-northeast1-b"
      },
      {
        "name": "asia-northeast1-c"
      }
    ],
    "vpcs": [
      {
        "name": "default",
        "subnets": [
          {
            "ipCidrRange": "00.000.0.0/20",
            "name": "default",
            "path": "projects/occm-dev/regions/asia-northeast1/subnetworks/default",
            "availableIps": 4090,
            "minimumRequiredIps": 6
          }
        ],
        "firewalls": [
          {
            "name": "allow-all",
            "vpc": "default"
          },
          {
            "name": "allow-ssh-netapp",
            "vpc": "default"
          }
        ]
      }
    ]
  }
}

```

## Get GCP permutations

You can use the permutations endpoint to retrieve the Cloud Volumes ONTAP configuration information such as `ontapVersion`, `license`, `instanceType`, `region`

and more. You can check the possible permutations that can potentially be provided for the GCP workflows while provisioning a Cloud Volumes ONTAP instance.

## 1. Get the permutations

HTTP method	Path
GET	/occm/api/gcp/vsa/metadata/permutations

### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/gcp/vsa/metadata/permutations?latest_only=true' --header 'x-agent-id: <AGENT_ID>' --header
'Authorization: Bearer <ACCESS_TOKEN>' --header 'Content-Type:
application/json'
```

### Input

There are several **optional** query parameters you can use:

- region string
- version string
- license string
- machine\_type string
- latest\_only string

### Output

The JSON output example includes the list of Cloud Volumes ONTAP configurations.

### JSON output example

```
[
  {
    "ontapVersion": "ONTAP-9.9.0X4.T1.gcp",
    "license": {
      "type": "gcp-cot-explore-paygo",
      "name": "Cloud Volumes ONTAP Explore",
      "description": "Suitable for smaller capacity applications.
Supports up to 2 TB of underlying GCP storage.",
      "subName": "",
      "subDescription": "Support of tiering to object storage is not
included.",
      "capacity_limit": "2TB",
      "platformLicenseRequired": false,
      "default": false,
      "capacityLimit": {
```

```

        "size": 2.0,
        "unit": "TB"
    }
},
"instanceType": "custom-4-16384",
"region": {
    "name": "asia east 1",
    "code": "asia-east1",
    "location": "Changhua County, Taiwan",
    "s3Region": null
},
"defaultInstance": false,
"features": [
    "cpu: Intel Skylake"
],
"upgradeableFrom": [
    "9.8",
    "9.9.0"
]
},
{
    "ontapVersion": "ONTAP-9.9.0X4.T1.gcp",
    "license": {
        "type": "gcp-cot-explore-paygo",
        "name": "Cloud Volumes ONTAP Explore",
        "description": "Suitable for smaller capacity applications.
Supports up to 2 TB of underlying GCP storage.",
        "subName": "",
        "subDescription": "Support of tiering to object storage is not
included.",
        "capacity_limit": "2TB",
        "platformLicenseRequired": false,
        "default": false,
        "capacityLimit": {
            "size": 2.0,
            "unit": "TB"
        }
    },
    "instanceType": "custom-4-16384",
    "region": {
        "name": "asia east 2",
        "code": "asia-east2",
        "location": "Hong Kong",
        "s3Region": null
    },
    "defaultInstance": false,

```

```

    "features": [
      "cpu: Intel Skylake"
    ],
    "upgradeableFrom": [
      "9.8",
      "9.9.0"
    ]
  }
]

```

## Get tag keys

You can perform this workflow to retrieve all the labels in the specified project and zone.

### 1. Select the project

Perform the workflow [Get projects](#) and choose `projectId` value of the required project for `projectId` query parameter.

### 2. Select the region

Perform the [Get regions](#) workflow and choose the `zone: name` value of the required region for the `zone` query parameter.

### 3. Get the tag keys

HTTP method	Path
GET	/occm/api/gcp/vsa/metadata/tag-keys

#### curl example

```

curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/gcp/vsa/metadata/tag-
keys?projectId=<PROJECT_ID>&zone=<ZONE>' --header 'x-agent-id: <AGENT_ID>'
--header 'Authorization: Bearer <ACCESS_TOKEN>' --header 'Content-Type:
application/json'

```

#### Input

Query parameters:

- `<PROJECT_ID>` `projectId` string
- `<ZONE>` `zone` string

#### Output

The JSON output example includes the list of Azure storage account types.



## JSON output example

```
[
  {
    "key": "working-environment-id",
    "values": [
      "vsaworkingenvironment-sfrf3wvj",
      "vsaworkingenvironment-2qkd75xv"
    ]
  },
  {
    "key": "count-down",
    "values": [
      "3",
      "0",
      "2"
    ]
  },
  {
    "key": "username",
    "values": [
      "administrator"
    ]
  },
  {
    "key": "keepme",
    "values": [
      "10"
    ]
  },
  {
    "key": "cloud-ontap-version",
    "values": [
      "9_9_0x4"
    ]
  },
  {
    "key": "cloud-ontap-dm",
    "values": [
      "zivgcp01we02-deployment",
      "zivgcp01we03-deployment"
    ]
  },
  {
    "key": "platform-serial-number",
    "values": [
```

```

        "00000030000000000009",
        "000000000000000096011"
    ]
}
],
{
    "key": "netapp:cloud-compliance:cloudManager:ClientId",
    "values": [
        "sNwn2FzHxFrucwz8j1huxNIYI7aRNqTC"
    ]
}
]

```

## Create Buckets

You can perform this workflow to create a new bucket. This is a GCP storage bucket (data container in GCP) required for data tiering and backup.

### 1. Create a bucket

HTTP method	Path
POST	/occm/api/gcp/vsa/metadata/create-bucket

#### curl example

```

curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/gcp/vsa/metadata/create-
bucket' --header 'x-agent-id: <AGENT_ID>' --header 'Authorization: Bearer
<ACCESS_TOKEN>' --header 'Content-Type: application/json' --d JSONinput

```

#### JSON input example

```

{
    "projectId": "occm-dev",
    "bucketName": "zivgcpbucket02",
    "location": "us-west1",
    "storageClass": "standard"
}

```

#### Output

None

## Get buckets

You can perform this workflow to retrieve the S3 buckets. The S3 buckets are the GCP storage buckets (data containers in GCP) required for data tiering and backups.

### 1. Get the buckets

HTTP method	Path
GET	/occm/api/vsa/metadata/buckets

#### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/vsa/metadata/buckets'
--header 'x-agent-id: <AGENT_ID>' --header 'Authorization: Bearer
<ACCESS_TOKEN>' --header 'Content-Type: application/json'
```

#### Input

None

#### Output

The JSON output example includes the list of S3 buckets.

#### JSON output example

```
[
  {
    "bucketName": "3.9.0.bins.08112020",
    "region": "us-east-1",
    "tags": {}
  },
  {
    "bucketName": "0000000000-awsmacietrail-dataevent",
    "region": "us-east-1",
    "tags": {}
  }
]
```

## Get GCP packages

You can perform this workflow to retrieve the pre-defined packages configuration.

### 1. Get the packages

HTTP method	Path
GET	/occm/api/gcp/vsa/metadata/packages

### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/gcp/vsa/metadata/packages'
--header 'x-agent-id: <AGENT_ID>' --header 'Authorization: Bearer
<ACCESS_TOKEN>' --header 'Content-Type: application/json'
```

### Input

None

### Output

The JSON output example includes the list of GCP packages.

### JSON output example

```
[
  {
    "name": "gcp_poc",
    "displayName": "POC and small workloads",
    "description": "No description yet",
    "licenseType": "gcp-cot-explore-paygo",
    "instanceTypeMapping": [
      {
        "region": "default",
        "instanceType": "custom-4-16384"
      }
    ],
    "diskType": "pd-ssd",
    "diskSize": {
      "size": 100.0,
      "unit": "GB"
    },
    "capacityTier": null,
    "instanceTenancy": null,
    "writingSpeedState": "NORMAL"
  },
  {
    "name": "gcp_standard",
    "displayName": "Database and application data production
workloads",
    "description": "No description yet",
    "licenseType": "gcp-cot-standard-paygo",
    "instanceTypeMapping": [
```

```

        {
            "region": "default",
            "instanceType": "n1-standard-8"
        }
    ],
    "diskType": "pd-ssd",
    "diskSize": {
        "size": 100.0,
        "unit": "GB"
    },
    "capacityTier": "GCP",
    "instanceTenancy": null,
    "writingSpeedState": "NORMAL"
},
{
    "name": "gcp_dr",
    "displayName": "Cost effective DR",
    "description": "No description yet",
    "licenseType": "gcp-cot-standard-paygo",
    "instanceTypeMapping": [
        {
            "region": "default",
            "instanceType": "n1-standard-8"
        }
    ],
    "diskType": "pd-standard",
    "diskSize": {
        "size": 100.0,
        "unit": "GB"
    },
    "capacityTier": "GCP",
    "instanceTenancy": null,
    "writingSpeedState": "NORMAL"
},
{
    "name": "gcp_fastest",
    "displayName": "Highest performance production workloads",
    "description": "No description yet",
    "licenseType": "gcp-cot-premium-paygo",
    "instanceTypeMapping": [
        {
            "region": "default",
            "instanceType": "n1-standard-32"
        }
    ],
    "diskType": "pd-ssd",

```

```

    "diskSize": {
      "size": 100.0,
      "unit": "GB"
    },
    "capacityTier": "GCP",
    "instanceTenancy": null,
    "writingSpeedState": "NORMAL"
  }
]

```

## Get Snapshot policies

You can perform this workflow to retrieve the default snapshot policies available on the cluster.

### 1. Get the snapshot policies

HTTP method	Path
GET	/occm/api/gcp/vsa/metadata/default-snapshot-policies

#### curl example

```

curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/gcp/vsa/metadata/default-snapshot-policies' --header 'x-agent-id: <AGENT_ID>' --header
'Authorization: Bearer <ACCESS_TOKEN>' --header 'Content-Type:
application/json'

```

#### Input

None

#### Output

The JSON output example includes the list of default snapshot policies available on the cluster.

#### JSON output example

```
[
  {
    "name": "default",
    "schedules": [
      {
        "frequency": "hourly",
        "retention": 6
      },
      {
        "frequency": "daily",
        "retention": 2
      },
      {
        "frequency": "weekly",
        "retention": 2
      }
    ],
    "description": "Default policy with hourly, daily & weekly
schedules."
  },
  {
    "name": "none",
    "schedules": [],
    "description": "Policy for no automatic snapshots."
  }
]
```

## Get supported features

You can perform this workflow to retrieve and check the supported features while provisioning a Cloud Volumes ONTAP instance.

### 1. Select the permutations

Perform the workflow [Get permutations](#) and choose the `ontapVersion`, `license: type`, `instanceType`, and `region: code` values of the required permutations for the query parameters of supported features request.

### 2. Get the supported features

HTTP method	Path
GET	/occm/api/gcp/vsa/metadata/supported-features

### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/gcp/vsa/metadata/supported-features?region=<REGION>&ontapVersion=<ONTAP_VERSION>&dataEncryptionType=<ENCRP_TYPE>&licenseType=<LICENSE_TYPE>&instanceType=<INST_TYPE>' --header 'x-agent-id: <AGENT_ID>' --header 'Authorization: Bearer <ACCESS_TOKEN>' --header 'Content-Type: application/json'
```

## Input

Query parameters:

- <REGION> region string
- <ONTAP\_VERSION> ontapVersion string
- <LICENSE\_TYPE> licenseType string
- <INST\_TYPE> instanceType string
- <ENCRP\_TYPE> dataEncryptionType string

## JSON output example

```
{
  "wormSupportedVersion": true,
  "cbsSupportedVersion": true,
  "httpsStorageAccountSupportedVersion": false,
  "tieringWithServiceAccount": true
}
```

# Get supported capacity tiers

You can retrieve the supported capacity tiers for Google Cloud disk types.

## 1. Select the permutations

Perform the workflow [Get permutations](#) and choose the ontapVersion, license: type, instanceType, and region: code values of the required permutations for the query parameters of supported capacity tiers request.

## 2. Get the supported features

HTTP method	Path
GET	/occm/api/gcp/vsa/metadata/supported-capacity-tiers

## curl example



```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/gcp/vsa/metadata/supported
-capacity
-tiers?region=<REGION>&ontapVersion=<ONTAP_VERSION>&dataEncryptionType=<EN
CRP_TYPE>&licenseType=<LICENSE_TYPE>&instanceType=<INST_TYPE>' --header
'x-agent-id: <AGENT_ID>' --header 'Authorization: Bearer <ACCESS_TOKEN>'
--header 'Content-Type: application/json'
```

## Input

Query parameters:

- <REGION> region string
- <ONTAP\_VERSION> ontapVersion string
- <LICENSE\_TYPE> licenseType string
- <INST\_TYPE> instanceType string
- <ENCRP\_TYPE> dataEncryptionType string

## Output

The output shows a list of supported capacity tiers for the GCP disk types.

## JSON output example

```

{
  "supportedCapacityTiersPerVolumeType": [
    {
      "volumeType": "pd-standard",
      "supportedCapacityTiers": [
        "cloudStorage"
      ],
      "availableTieringPolicies": [
        "none",
        "snapshot_only"
      ]
    },
    {
      "volumeType": "pd-ssd",
      "supportedCapacityTiers": [
        "cloudStorage"
      ],
      "availableTieringPolicies": [
        "none",
        "snapshot_only"
      ]
    }
  ],
  "capacityTiersDisableReasons": [
    "Cannot create capacity tiered volume on Cloud Volumes ONTAP  
Explore license"
  ],
  "compositeSupported": true,
  "forceCompositeVersion": false
}

```

## Get service accounts

This workflow retrieves a list of service accounts from the specified project.

### 1. Get the list of service accounts

HTTP method	Path
GET	/occm/api/gcp/vsa/metadata/service-accounts

#### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/gcp/vsa/metadata/service-accounts' --header 'Content-Type: application/json' --header 'x-agent-id: <AGENT_ID>' --header 'Authorization: Bearer <ACCESS_TOKEN>'
```

## Input

None

## Output

The JSON output retrieves a list of service accounts from the project.

## JSON output example

```
{
  "accounts": [
    {
      "name": "projects/occm-dev/serviceAccounts/00000-compute@serviceaccount.com",
      "projectId": "occm-dev",
      "email": "00000-compute@serviceaccount.com",
      "displayName": "Compute Engine default service account",
      "isEnabled": false
    },
    {
      "name": "projects/occm-dev/serviceAccounts/xxx-000@occmaccount.com",
      "projectId": "occm-dev",
      "email": "xxxx-000@occmaccount.com",
      "displayName": "admin",
      "isEnabled": false
    }
  ]
}
```

# Get projects

This workflow retrieves the list of projects that the caller has permission on.

## 1. Get the list of regions

HTTP method	Path
GET	/occm/api/gcp/vsa/metadata/projects

### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/gcp/vsa/metadata/projects'
--header 'Content-Type: application/json' --header 'x-agent-id:
<AGENT_ID>' --header 'Authorization: Bearer <ACCESS_TOKEN>'
```

### Input

None

### Output

The JSON output provides an example of a list of authorized projects.

### JSON output example

```

{
  "projects": [
    {
      "isDefault": false,
      "projectNumber": "958377592668",
      "projectId": "occm-host",
      "lifecycleState": "ACTIVE",
      "name": "OCCM-host",
      "createTime": "2019-07-24T14:36:32.472Z",
      "parent": {
        "type": "folder",
        "id": "339830134733"
      },
      "subscriptionId": null
    },
    {
      "isDefault": false,
      "projectNumber": "844924364732",
      "projectId": "occm-slave",
      "lifecycleState": "ACTIVE",
      "name": "OCCM-slave",
      "createTime": "2019-07-24T14:36:32.405Z",
      "parent": {
        "type": "folder",
        "id": "339830134733"
      },
      "subscriptionId": null
    },
    {
      "isDefault": true,
      "projectNumber": "92083494653",
      "projectId": "occm-dev",
      "lifecycleState": "ACTIVE",
      "name": "OCCM-Dev",
      "createTime": "2018-05-24T17:23:50.505Z",
      "parent": {
        "type": "folder",
        "id": "339830134733"
      },
      "subscriptionId": "gcp-saasMpIntegrationProductId-
saasMpCustomerIdentifier6"
    }
  ]
}

```

# Get GCP encryption keys

This workflow retrieves the GCP encryption keys for a specific region.

## 1. Select the region

Perform the workflow [Get regions](#) and choose the name value of the required region for the `region` path parameter.

## 2. Select the project

Perform the [get projects](#) workflow and choose the `projectId` value of the required project for the `project` path parameter.

## 3. Get the encryption keys

HTTP method	Path
GET	/occm/api/gcp/vsa/metadata/gcp-encryption-keys

### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/gcp/vsa/metadata/gcp-
encryption-keys?region=<REGION>&project=<PROJECT>' --header 'Content-Type:
application/json' --header 'x-agent-id: <AGENT_ID>' --header
'Authorization: Bearer <ACCESS_TOKEN>'
```

### Input

Required query parameters:

- `<REGION>` region: string
- `<PROJECT>` project: string

### Output

The JSON output provides an example of a list of GCP encryption keys for a specific region.

### JSON output example

```
[
  {
    "name": "key1",
    "id": "projects/occm-dev/locations/global/keyRings/test/cryptoKeys/key1",
    "keyRing": "test",
    "location": "global"
  },
  {
    "name": "key2",
    "id": "projects/occm-dev/locations/global/keyRings/test/cryptoKeys/key2",
    "keyRing": "test",
    "location": "global"
  }
]
```

## Get GCP disk types

This workflow retrieves the GCP supported disk types.

### 1. Get the disk types

HTTP method	Path
GET	/occm/api/gcp/vsa/metadata/gcp-disk-types

#### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/gcp/vsa/metadata/gcp-disk-
types' --header 'Content-Type: application/json' --header 'x-agent-id:
<AGENT_ID>' --header 'Authorization: Bearer <ACCESS_TOKEN>'
```

#### Input

None

#### Output

The JSON output provides an example of a list of GCP supported disk types.

#### JSON output example

```
[
  {
    "size": {
      "size": 100.0,
      "unit": "GB"
    },
    "supportedDiskTypes": [
      "pd-standard",
      "pd-ssd"
    ],
    "supportedOccmLicenses": [
      "Standard (BYOL)",
      "Cloud Volumes ONTAP Standard",
      "Cloud Volumes ONTAP Explore",
      "Standard (hourly)",
      "Cloud Volumes ONTAP BYOL",
      "Explore (hourly)",
      "Cloud Volumes ONTAP Premium"
    ]
  },
  {
    "size": {
      "size": 500.0,
      "unit": "GB"
    },
    "supportedDiskTypes": [
      "pd-standard",
      "pd-ssd"
    ],
    "supportedOccmLicenses": [
      "Standard (BYOL)",
      "Cloud Volumes ONTAP Standard",
      "Cloud Volumes ONTAP Explore",
      "Standard (hourly)",
      "Cloud Volumes ONTAP BYOL",
      "Explore (hourly)",
      "Cloud Volumes ONTAP Premium"
    ]
  }
]
```



# Get instance types not supporting acceleration and capacity tiering

This workflow retrieves the GCP instance types which do not support the acceleration and capacity tiering. This means that these kind instance types do not use any sort of hardware accelerator. You can check the instance types while provisioning the Cloud Volumes ONTAP.

## 1. Get the instance types

HTTP method	Path
GET	occm/api/gcp/vsa/metadata/instance-types-not-supporting-acceleration-and-capacity-tiering

### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/gcp/vsa/metadata/instance-
types-not-supporting-acceleration-and-capacity-tiering' --header 'Content-
Type: application/json' --header 'x-agent-id: <AGENT_ID>' --header
'Authorization: Bearer <ACCESS_TOKEN>'
```

### Input

None

### Output

The JSON output provides an example of a list of instance types.

### JSON output example

```
{
  "instanceTypes": []
}
```

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