



## **AWS workflows**

### Cloud Manager Automation

NetApp

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# AWS workflows

## Workflows for Amazon Web Services

There are several workflows you can use with the Amazon Web Services public cloud.



Review the [Get started](#) section before using any of the Cloud Manager REST API workflows.

### Workflow categories

The AWS workflows are organized into the following functional categories:

- Working environments
- Aggregates
- Volumes
- Metadata
- Miscellaneous

See [Understanding the workflow processes](#) for more information on these categories.

### Connector setup

You must have a **Connector** for the cloud environment before creating a working environment and performing other activities using the workflows. You can create a Connector using the Cloud Manager web UI. When you create a Connector, Cloud Manager adds the AWS cloud provider account that you deployed the Connector in to your list of available accounts. Your AWS account needs to have the right permissions in order to create a Connector.

Review [Learn about AWS Connectors](#) to know how to create and deploy an AWS Connector.

## Working environments

### Create a working environment with PAYGO

You can create a new Cloud Volumes ONTAP working environment using pay-as-you-go (PAYGO) subscription. You can add new volumes when creating the working environment.

#### Note the following when using PAYGO:

- A marketplace subscription is required.
- A NetApp Support Site (NSS) key is recommended to register the system for support, but it's not required.
- You can add more volumes after creating the working environment. You can add volumes using the [NFS](#), [CIFS](#) or the [iSCSI](#) protocol.

Choose the correct workflow depending on the type of the Cloud Volumes ONTAP deployment:

- [Single Node](#)
- [HA pair](#)

## Create working environment for single node

You can use this workflow to create an single node Cloud Volumes ONTAP working environment.

### 1. Select the region

Perform the workflow [Get regions](#) and choose the `code` value for the `region` parameter in step 9.

### 2. Select the workspace

Perform the workflow [Get tenants](#) and choose the `workspacePublicId` value for the `tenantId` parameter in step 9.

### 3. Select the permutations configuration

Perform the workflow [Get permutations](#) and choose the `ontapVersion` and `license: type` and `instanceType` values for the `vsaMetadata` parameter in step 9.

### 4. Select the VPC

Perform the workflow [Get VPCs](#) and do the following:

- Choose the `vpcId` value for the `vpcId` parameter in step 9.
- Choose the `cidrBlock` values for the `ips` value of the `volume` parameter in step 9.

### 5. Select the EBS volume configuration

Perform the workflow [Get EBS volume types](#) and choose the `size` and `supportedVolumeTypes` values for the `ebsVolumeSize` and `ebsVolumeType` parameters in step 9.



You need to choose one of the allowed values for the required `ebsVolumeType` parameter. We have used `gp2` value for this parameter in step 9.

### 6. Attach a marketplace subscription

Perform the workflow [Attach SaaS subscription](#).

### 7. (Optional) Obtain an NSS key

An NSS key is optional when using PAYGO licensing. If needed, you can create a key or select an existing key, and include the NSS key in the `nssAccount` parameter in step 9.

- To create a new NSS key using the Cloud Manager web user interface, perform the task [Generate NSS user ID](#) and choose the NSS ID.
- To select an existing NSS key, perform the workflow [Get NSS keys](#) and choose the `id` of the required NSS user.

## 8. (Optional) Create a new volume

You can optionally add a new volume while creating a working environment.

- Choose the `name` and `size` values for the corresponding `name` and `size:size` input parameters in step 9. The `size:unit` must be one of the following: TB, GB, MB, KB, or Byte.
- Choose the `policyType`, `ips`, and the `nfsVersion` parameters in the `exportPolicyInfo` input parameter in step 9 if you choose to create a volume using the NFS protocol. The `ips` parameter signifies the client IP address (could be multiple addresses) that can access the volume over the network. The `nfsVersion` parameter signifies the version of the NFS protocol that a client will use for data transmission over a network.



If you choose to create a volume using CIFS protocol, you will need to set the `shareInfo` parameter. If you choose to create a volume using iSCSI protocol, you will need to set the `iscsiInfo` parameter accordingly.

## 9. Create the working environment

HTTP method	Path
POST	/occm/api/vsa/working-environments

### curl example

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

### Input

The JSON input example includes the minimum list of parameters.



This request uses PAYGO subscription as indicated in the `licenseType` parameter.

### JSON input example

```

{
  "name": "ziv01we02",
  "svmPassword": "user_password",
  "vpcId": "vpc-b16c90d4",
  "region": "us-east-1",
  "tenantId": "tenantIDgoeshere",
  "subnetId": "subnet-f4da95ac",
  "dataEncryptionType": "AWS",
  "vsaMetadata": {
    "ontapVersion": "ONTAP-9.9.0.T1",
    "licenseType": "cot-explore-paygo",
    "instanceType": "m5.xlarge"
  },
  "ebsVolumeSize": {
    "size": 100,
    "unit": "GB"
  },
  "ebsVolumeType": "gp2",
  "volume": {
    "name": "ziv02vol01",
    "size": {
      "size": 200,
      "unit": "GB"
    }
  },
  "exportPolicyInfo": {
    "policyType": "custom",
    "ips": [
      "172.31.0.0/16"
    ],
    "nfsVersion": [
      "nfs3",
      "nfs4"
    ]
  },
  "snapshotPolicyName": "default",
  "enableThinProvisioning": true,
  "enableCompression": true,
  "enableDeduplication": true
},
"writingSpeedState": "NORMAL"
}

```

## Output

The JSON output example includes an example of the VsaWorkingEnvironmentResponse.

## JSON output example

```
{
  "publicId": "VsaWorkingEnvironment-0Nwsb1aX",
  "name": "ziv01we02",
  "tenantId": "tenantIDgoeshere",
  "svmName": "svm_ziv01we02",
  "creatorUserEmail": "user_email",
  "status": null,
  "awsProperties": null,
  "reservedSize": null,
  "encryptionProperties": null,
  "clusterProperties": null,
  "ontapClusterProperties": null,
  "actionsRequired": null,
  "interClusterLifs": null,
  "cronJobSchedules": null,
  "snapshotPolicies": null,
  "svms": null,
  "activeActions": null,
  "replicationProperties": null,
  "schedules": null,
  "cloudProviderName": "Amazon",
  "isHA": false,
  "workingEnvironmentType": "VSA",
  "supportRegistrationProperties": null,
  "supportRegistrationInformation": null,
  "haProperties": null,
  "capacityFeatures": null,
  "cloudSyncProperties": null,
  "supportedFeatures": null,
  "k8sProperties": null,
  "fpolicyProperties": null,
  "saasProperties": null,
  "cbsProperties": null,
  "complianceProperties": null,
  "monitoringProperties": null
}
```

## Create working environment for high availability pair

You can use this workflow to create an HA Cloud Volumes ONTAP working environment.

### 1. Select the region

Perform the workflow [Get regions](#) and choose the code value for the region parameter in step 11.

## 2. Select the cloud provider account

Perform the workflow [Get cloud provider accounts](#) and choose the `publicId` value of the required account for the `cloudProviderAccount` parameter.

## 3. Select the workspace

Perform the workflow [Get tenants](#) and choose the `workspacePublicId` value for the `tenantId` parameter in step 12.

## 4. Select the permutations configuration

Perform the workflow [Get permutations](#) and choose the `ontapVersion` and `license: type` and `instanceType` values for the `vsaMetadata` parameter in step 12.

## 5. Select the packages configuration

Perform the [Get Packages](#) and choose the `packageName`, `instanceTenancy` and `writingSpeedState` values for the corresponding parameters in step 12.

## 6. Select the VPC

Perform the workflow [Get VPCs](#) and do the following:

- Choose the `vpcId` value for the `vpcId` parameter in step 12.
- Choose three subnets and choose the `subnetId` value for the `haParams:mediatorSubnetId`, `haParams:node1SubnetId`, `haParams:node2SubnetId` in step 12.
- Select the IPs for the `clusterFloatingIP`, `dataFloatingIP`, `dataFloatingIP2` values for the corresponding parameters in step 12.

## 7. Select route table

Perform the workflow [Get route tables](#) and choose the `id` value of the required route table for `haParams:routeTableIds` parameter in step 12.

## 8. Select the EBS volume configuration

Perform the workflow [Get EBS volume types](#) and choose the `size` and `supportedVolumeTypes` values for the `ebsVolumeSize` and `ebsVolumeType` parameters in step 12.



You need to choose one of the allowed values for the required `ebsVolumeType` parameter. We have used `gp2` value for this parameter in step 12.

## 9. Attach a marketplace subscription

Perform the workflow [Attach SaaS subscription](#).

## 10. (Optional) Obtain an NSS key

An NSS key is optional when using PAYGO licensing. If needed, you can create a key or select an existing key, and include the NSS key in the `nssAccount` parameter in step 12.



- To create a new NSS key using the Cloud Manager web user interface, perform the task [Generate NSS user ID](#) and choose the NSS ID.
- To select an existing NSS key, perform the workflow [Get NSS keys](#) and choose the `id` of the required NSS user.

## 11. (Optional) Create a new volume

You can optionally add a new volume while creating a working environment.

- Choose the `name` and `size` values for the corresponding `name` and `size:size` input parameters in step 12. The `size:unit` must be one of the following: TB, GB, MB, KB, or Byte.
- Choose the `policyType`, `ips`, and the `nfsVersion` parameters in the `exportPolicyInfo` input parameter in step 12 if you choose to create a volume using the NFS protocol. The `ips` parameter signifies the client IP address (could be multiple addresses) that can access the volume over the network. The `nfsVersion` parameter signifies the version of the NFS protocol that a client will use for data transmission over a network.



If you choose to create a volume using CIFS protocol, you will need to set the `shareInfo` parameter. If you choose to create a volume using iSCSI protocol, you will need to set the `iscsiInfo` parameter accordingly.

## 12. Create the working environment

HTTP method	Path
POST	/occm/api/aws/ha/working-environments

### curl example

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/working-
environments' --header 'x-agent-id: <AGENT_ID>' --header 'Authorization:
Bearer <ACCESS_TOKEN>' --header 'Content-Type: application/json' --d
@JSONinput
```

### Input

The JSON input example includes the minimum list of parameters.



This request uses PAYGO licensing as indicated in the `licenseType` parameter.

### JSON input example

```
{
  "name": "ziv04we02ha",
  "svmPassword": "password",
  "vpcId": "vpc-b16c90d4",
  "region": "us-east-1",
  "tenantId": "tenantIDgoeshere",
```

```

"ebsVolumeSize": {
  "size": 100,
  "unit": "GB"
},
"ebsVolumeType": "gp2",
"vsaMetadata": {
  "ontapVersion": "ONTAP-9.9.0X6.T1.ha",
  "licenseType": "ha-cot-explore-paygo",
  "instanceType": "m5.xlarge"
},
"dataEncryptionType": "AWS",
"ontapEncryptionParameters": null,
"haParams": {
  "node1SubnetId": "subnet-f4da95ac",
  "node2SubnetId": "subnet-b4387a9e",
  "mediatorSubnetId": "subnet-76e6d400",
  "clusterFloatingIP": "4.4.4.4",
  "dataFloatingIP": "5.5.5.5",
  "dataFloatingIP2": "6.6.6.6",
  "mediatorKeyPairName": "Developers_Virginia",
  "routeTableIds": [
    "rtb-02a45467"
  ],
  "failoverMode": "FloatingIP",
  "mediatorAssignPublicIP": true
},
"volume": {
  "name": "ziv02vol01",
  "size": {
    "size": 200,
    "unit": "GB"
  },
  "exportPolicyInfo": {
    "policyType": "custom",
    "ips": [
      "172.31.0.0/16"
    ],
    "nfsVersion": [
      "nfs3",
      "nfs4"
    ]
  },
  "snapshotPolicyName": "default",
  "enableThinProvisioning": true,
  "enableCompression": true,
  "enableDeduplication": true
}

```

```
},  
"optimizedNetworkUtilization": false,  
"instanceTenancy": "default",  
"packageName": "aws_ha_poc",  
"cloudProviderAccount": "InstanceProfile",  
"backupVolumesToCbs": false,  
"enableMonitoring": "false",  
"writingSpeedState": "NORMAL"  
}
```

## Output

The JSON output example includes an example of the HA working environment details.

## JSON output example

```

{
  "publicId": "VsaWorkingEnvironment-sQ9AELDS",
  "name": "ziv04we02ha",
  "tenantId": "tenantIDshownhere",
  "svmName": "svm_ziv04we02ha",
  "creatorUserEmail": "user_email",
  "status": null,
  "awsProperties": null,
  "reservedSize": null,
  "encryptionProperties": null,
  "clusterProperties": null,
  "ontapClusterProperties": null,
  "actionsRequired": null,
  "interClusterLifs": null,
  "cronJobSchedules": null,
  "snapshotPolicies": null,
  "svms": null,
  "activeActions": null,
  "replicationProperties": null,
  "schedules": null,
  "cloudProviderName": "Amazon",
  "isHA": true,
  "workingEnvironmentType": "VSA",
  "supportRegistrationProperties": null,
  "supportRegistrationInformation": null,
  "haProperties": null,
  "capacityFeatures": null,
  "cloudSyncProperties": null,
  "supportedFeatures": null,
  "k8sProperties": null,
  "fpolicyProperties": null,
  "saasProperties": null,
  "cbsProperties": null,
  "complianceProperties": null,
  "monitoringProperties": null
}

```

## Create a working environment with BYOL licensing

You can use this workflow to create a new Cloud Volumes ONTAP working environment using bring-your-own-license (BYOL) licensing.

**Note the following when using BYOL licensing:**

- A marketplace subscription is not required.
- A NetApp Support Site (NSS) key is required to register the system for support.
- You can add a volume after creating the working environment.

To optionally create a new volume with the working environment, you must modify the JSON input provided on the REST API call. See [Create a working environment with PAYGO licensing](#) for an example.

Choose the correct workflow depending on the type of the Cloud Volumes ONTAP deployment:

- [Single Node](#)
- [HA pair](#)

### Create working environment for single node

You can use this workflow to create a single node Cloud Volumes ONTAP working environment.

#### 1. Select the region

Perform the workflow [Get regions](#) and choose the `code` value for the `region` parameter in step 7.

#### 2. Select the workspace

Perform the workflow [Get tenants](#) and choose the `workspacePublicId` value for the `tenantId` parameter in step 7.

#### 3. Select the permutations configuration

Perform the workflow [Get permutations](#) and choose the `ontapVersion` and `license: type` and `instanceType` values for the `vsaMetadata` parameter in step 7.

You will also need to include the `platformSerialNumber` value in `vsaMetadata` parameter in the REST API call.

#### 4. Select the VPC

Perform the workflow [Get VPCs](#) and choose the `vpcId` value for the `vpcId` parameter in step 7.

#### 5. Select the EBS volume configuration

Perform the workflow [Get EBS volume types](#) and choose the `size` and `supportedVolumeTypes` values for the `ebsVolumeSize` and `ebsVolumeType` parameters in step 7.



You need to choose one of the allowed values for the required `ebsVolumeType` parameter. We have used `gp2` value for this parameter in step 7.

#### 6. Obtain the required NSS key

An NSS key is required when using BYOL licensing. You can create a key or select an existing key, and

include the NSS key in the `nssAccount` parameter in step 7.

- To create a new NSS key using the Cloud Manager web user interface, perform the task [Generate NSS user ID](#) and choose the NSS ID.
- To select an existing NSS key, perform the workflow [Get NSS keys](#) and choose the `id` of the required NSS user.

## 7. Create the working environment

HTTP method	Path
POST	/occm/api/vsa/working-environments

### curl example

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

### Input

The JSON input example includes the minimum list of parameters. This request uses BYOL licensing as indicated in the `licenseType` parameter. The `platformSerialNumber` is required.

### JSON input example

```
{
  "name": "ziv02we03",
  "svmPassword": "password",
  "vpcId": "vpc-b16c90d4",
  "region": "us-east-1",
  "tenantId": "workspace-cxxx123",
  "subnetId": "subnet-f4da95ac",
  "dataEncryptionType": "AWS",
  "nssAccount": "xxx332ce3-xxxx-4000-xx00-000a0601c682",
  "vsaMetadata": {
    "ontapVersion": "ONTAP-9.9.0.T1",
    "licenseType": "cot-premium-byol",
    "instanceType": "m5.xlarge",
    "platformSerialNumber": "00100100000000000020",
  },
  "ebsVolumeSize": {
    "size": 100,
    "unit": "GB"
  },
  "ebsVolumeType": "gp2"
}
```

## Output

The JSON output example includes an example of the `VsaWorkingEnvironmentResponse` response.

### JSON output example

```
{
  "publicId": "VsaWorkingEnvironment-wL2MaBJs",
  "name": "username",
  "tenantId": "tenantIDgoeshere",
  "svmName": "svm_ziv02we03",
  "creatorUserEmail": "user_email",
  "status": null,
  "awsProperties": null,
  "reservedSize": null,
  "encryptionProperties": null,
  "clusterProperties": null,
  "ontapClusterProperties": null,
  "actionsRequired": null,
  "interClusterLifs": null,
  "cronJobSchedules": null,
  "snapshotPolicies": null,
  "svms": null,
  "activeActions": null,
  "replicationProperties": null,
  "schedules": null,
  "cloudProviderName": "Amazon",
  "isHA": false,
  "workingEnvironmentType": "VSA",
  "supportRegistrationProperties": null,
  "supportRegistrationInformation": null,
  "haProperties": null,
  "capacityFeatures": null,
  "cloudSyncProperties": null,
  "supportedFeatures": null,
  "k8sProperties": null,
  "fpolicyProperties": null,
  "saasProperties": null,
  "cbsProperties": null,
  "complianceProperties": null,
  "monitoringProperties": null
}
```

## Create working environment for high availability pair

You can use this workflow to create an HA Cloud Volumes ONTAP working environment.

### 1. Select the region

Perform the workflow [Get regions](#) and choose the `code` value for the `region` parameter in step 11.

### 2. Select the cloud provider account

Perform the workflow [Get cloud provider accounts](#) and choose the `publicId` value of the required account for the `cloudProviderAccount` parameter.

### 3. Select the workspace

Perform the workflow [Get tenants](#) and choose the `workspacePublicId` value for the `tenantId` parameter in step 11.

### 4. Select the permutations configuration

Perform the workflow [Get permutations](#) and choose the `ontapVersion` and `license: type` and `instanceType` values for the `vsaMetadata` parameter in step 11.

### 5. Select the packages configuration

Perform the [Get Packages](#) and choose the `packageName`, `instanceTenancy` and `writingSpeedState` values for the corresponding parameters in step 11.

### 6. Select the VPC

Perform the workflow [Get VPCs](#) and do the following:

- Choose the `vpcId` value for the `vpcId` parameter in step 11.
- Choose three subnets and choose the `subnetId` value for the `haParams:mediatorSubnetId`, `haParams:node1SubnetId`, `haParams:node2SubnetId`.
- Attach the licenses serial number to `platformSerialNumberNode1` and `platformSerialNumberNode2` parameters.
- Select the IPs for the `clusterFloatingIP`, `dataFloatingIP`, `dataFloatingIP2` values for the corresponding parameters in step 11.

### 7. Select the route table

Perform the workflow [Get route tables](#) and choose the `id` value of the required route table for `haParams:routeTableIds` parameter in step 11.

### 8. Select the EBS volume configuration

Perform the workflow [Get EBS volume types](#) and choose the `size` and `supportedVolumeTypes` values for the `ebsVolumeSize` and `ebsVolumeType` parameters in step 11.



You need to choose one of the allowed values for the required `ebsVolumeType` parameter. We have used `gp2` value for this parameter in step 11.



## 9. Get key pairs

Perform the [Get key pairs](#) workflow and select the required key for `haParam: mediatorKeyPairName` parameter in step 11.

## 10. Obtain the required NSS key

An NSS key is required when using BYOL licensing. You can create a key or select an existing key, and include the NSS key in the `nssAccount` parameter.

- To create a new NSS key using the Cloud Manager web user interface, perform the task [Generate NSS user ID](#) and choose the NSS ID.
- To select an existing NSS key, perform the workflow [Get NSS keys](#) and choose the `id` of the required NSS user.

## 11. Create the working environment

HTTP method	Path
POST	/occm/api/aws/ha/working-environments

### curl example

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/working-
environments' --header 'x-agent-id: <AGENT_ID>' --header 'Authorization:
Bearer <ACCESS_TOKEN>' --header 'Content-Type: application/json' --d
@JSONinput
```

### Input

The JSON input example includes the minimum list of parameters. This request uses BYOL licensing as indicated in the `licenseType` parameter. The `platformSerialNumberNode1` and `platformSerialNumberNode2` parameters are required.

### JSON input example

```

{
  "name": "ziv04we02ha",
  "svmPassword": "password",
  "vpcId": "vpc-b16c90d4",
  "region": "us-east-1",
  "tenantId": "tenantIDgoeshere",
  "ebsVolumeSize": {
    "size": 100,
    "unit": "GB"
  },
  "ebsVolumeType": "gp2",
  "vsaMetadata": {
    "ontapVersion": "ONTAP-9.9.0.T1.ha",
    "licenseType": "ha-cot-premium-byol",
    "instanceType": "m5.xlarge"
  },
  "dataEncryptionType": "AWS",
  "ontapEncryptionParameters": null,
  "haParams": {
    "node1SubnetId": "subnet-f4da95ac",
    "node2SubnetId": "subnet-b4387a9e",
    "mediatorSubnetId": "subnet-76e6d400",
    "clusterFloatingIP": "4.4.4.4",
    "dataFloatingIP": "5.5.5.5",
    "dataFloatingIP2": "6.6.6.6",
    "platformSerialNumberNode1": "901201400000000000023",
    "platformSerialNumberNode2": "901201400000000000024",
    "mediatorKeyPairName": "Developers_Virginia",
    "routeTableIds": [
      "rtb-02a45467"
    ],
    "failoverMode": "FloatingIP",
    "mediatorAssignPublicIP": true
  },
  "nssAccount": "54ab5c0d-xx23-xxxd-bcef-6eeda79e747d",
  "optimizedNetworkUtilization": false,
  "instanceTenancy": "default",
  "packageName": "aws_ha_poc",
  "cloudProviderAccount": "InstanceProfile",
  "backupVolumesToCbs": false,
  "enableMonitoring": "false",
  "writingSpeedState": "NORMAL"
}

```

## Output

The JSON output example includes an example of the HA working environment details.

### JSON output example

```
{
  "publicId": "VsaWorkingEnvironment-XxCZibxz",
  "name": "ziv04we02ha",
  "tenantId": "tenantIDshownhere",
  "svmName": "svm_ziv04we02ha",
  "creatorUserEmail": "user_email",
  "status": null,
  "awsProperties": null,
  "reservedSize": null,
  "encryptionProperties": null,
  "clusterProperties": null,
  "ontapClusterProperties": null,
  "actionsRequired": null,
  "interClusterLifs": null,
  "cronJobSchedules": null,
  "snapshotPolicies": null,
  "svms": null,
  "activeActions": null,
  "replicationProperties": null,
  "schedules": null,
  "cloudProviderName": "Amazon",
  "isHA": true,
  "workingEnvironmentType": "VSA",
  "supportRegistrationProperties": null,
  "supportRegistrationInformation": null,
  "haProperties": null,
  "capacityFeatures": null,
  "cloudSyncProperties": null,
  "supportedFeatures": null,
  "k8sProperties": null,
  "fpolicyProperties": null,
  "saasProperties": null,
  "cbsProperties": null,
  "complianceProperties": null,
  "monitoringProperties": null
}
```

## Get working environments

You can retrieve the public identifier, working environment identifier and the storage virtual machine name for Cloud Volumes ONTAP working environments (visible to

currently logged in user) which would be used in other workflows.

Choose the correct workflow depending on the type of the Cloud Volumes ONTAP deployment:

- [Single Node](#)
- [HA pair](#)

### Get working environments for single node

You can use this workflow to retrieve the working environments' details for a single node system.

#### 1. Get the working environments

HTTP method	Path
GET	occm/api/vsa/working-environments

#### curl example

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

#### Input

Optional query parameters:

- fields
- tenantId

#### Output

The JSON output example includes an array of VSA working environments and their details.

#### JSON output example

```
[
  {
    "publicId": "VsaWorkingEnvironment-79VKenHW",
    "name": "ziv01we02",
    "tenantId": "tenantIDshownhere",
    "svmName": "svm_ziv01we02",
    "creatorUserEmail": "user_email",
    "status": null,
    "awsProperties": null,
    "reservedSize": null,
    "encryptionProperties": null,
    "clusterProperties": null,
    "ontapClusterProperties": null,
    "actionsRequired": null,
```

```

    "interClusterLifs": null,
    "cronJobSchedules": null,
    "snapshotPolicies": null,
    "svms": null,
    "activeActions": null,
    "replicationProperties": null,
    "schedules": null,
    "cloudProviderName": "Amazon",
    "isHA": false,
    "workingEnvironmentType": "VSA",
    "supportRegistrationProperties": null,
    "supportRegistrationInformation": [],
    "haProperties": null,
    "capacityFeatures": null,
    "cloudSyncProperties": null,
    "supportedFeatures": null,
    "k8sProperties": null,
    "fpolicyProperties": null,
    "saasProperties": null,
    "cbsProperties": null,
    "complianceProperties": null,
    "monitoringProperties": null
  },
  {
    "publicId": "VsaWorkingEnvironment-61kN4p5P",
    "name": "ziv01we03",
    "tenantId": "tenantIDshownhere",
    "svmName": "svm_ziv01we03",
    "creatorUserEmail": "user_email",
    "status": null,
    "awsProperties": null,
    "reservedSize": null,
    "encryptionProperties": null,
    "clusterProperties": null,
    "ontapClusterProperties": null,
    "actionsRequired": null,
    "interClusterLifs": null,
    "cronJobSchedules": null,
    "snapshotPolicies": null,
    "svms": null,
    "activeActions": null,
    "replicationProperties": null,
    "schedules": null,
    "cloudProviderName": "Amazon",
    "isHA": false,
    "workingEnvironmentType": "VSA",

```

```

    "supportRegistrationProperties": null,
    "supportRegistrationInformation": [],
    "haProperties": null,
    "capacityFeatures": null,
    "cloudSyncProperties": null,
    "supportedFeatures": null,
    "k8sProperties": null,
    "fpolicyProperties": null,
    "saasProperties": null,
    "cbsProperties": null,
    "complianceProperties": null,
    "monitoringProperties": null
  },
  {
    "publicId": "VsaWorkingEnvironment-E9WanX81",
    "name": "ziv01we04",
    "tenantId": "tenantIDshownhere",
    "svmName": "svm_ziv01we04",
    "creatorUserEmail": "user_email",
    "status": null,
    "awsProperties": null,
    "reservedSize": null,
    "encryptionProperties": null,
    "clusterProperties": null,
    "ontapClusterProperties": null,
    "actionsRequired": null,
    "interClusterLifs": null,
    "cronJobSchedules": null,
    "snapshotPolicies": null,
    "svms": null,
    "activeActions": null,
    "replicationProperties": null,
    "schedules": null,
    "cloudProviderName": "Amazon",
    "isHA": false,
    "workingEnvironmentType": "VSA",
    "supportRegistrationProperties": null,
    "supportRegistrationInformation": [],
    "haProperties": null,
    "capacityFeatures": null,
    "cloudSyncProperties": null,
    "supportedFeatures": null,
    "k8sProperties": null,
    "fpolicyProperties": null,
    "saasProperties": null,
    "cbsProperties": null,
  }

```

```
        "complianceProperties": null,  
        "monitoringProperties": null  
    }  
]
```

## Get working environment for high availability pair

You can use this workflow to get the working environment details for an HA pair.

### 1. Select the working environment to use

Perform the workflow [Get working environments for single node](#) and choose the `publicId` of the required working environment for the `workingEnvironmentId` path parameter.

### 2. Get the working environment

HTTP method	Path
GET	occm/api/aws/ha/working-environments/<WORKING_ENV_ID>

### curl example

```
curl --location --request GET  
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/working-  
environments/<WORKING_ENV_ID>' --header 'Content-Type: application/json'  
--header 'x-agent-id: <AGENT_ID>' --header 'Authorization: Bearer  
<ACCESS_TOKEN>'
```

### Input

Path parameter:

<WORKING\_ENV\_ID> `workingEnvironmentId`

Optional query parameter:

`fields`

### Output

The JSON output example includes an HA Cloud Volumes ONTAP working environment.

### JSON output example

```
[
{
  "publicId": "VsaWorkingEnvironment-N6BPfglr",
  "name": "ziv04we01ha",
  "tenantId": "tenantIDshownhere",
  "svmName": "svm_ziv04we01ha",
  "creatorUserEmail": "user_email",
  "status": null,
  "awsProperties": null,
  "reservedSize": null,
  "encryptionProperties": null,
  "clusterProperties": null,
  "ontapClusterProperties": null,
  "actionsRequired": null,
  "interClusterLifs": null,
  "cronJobSchedules": null,
  "snapshotPolicies": null,
  "svms": null,
  "activeActions": null,
  "replicationProperties": null,
  "schedules": null,
  "cloudProviderName": "Amazon",
  "isHA": true,
  "workingEnvironmentType": "VSA",
  "supportRegistrationProperties": null,
  "supportRegistrationInformation": [],
  "haProperties": null,
  "capacityFeatures": null,
  "cloudSyncProperties": null,
  "supportedFeatures": null,
  "k8sProperties": null,
  "fpolicyProperties": null,
  "saasProperties": null,
  "cbsProperties": null,
  "complianceProperties": null,
  "monitoringProperties": null
}
```

## Delete a working environment

You can delete an existing Cloud Volumes ONTAP working environment.

Choose the correct workflow depending on the type of the Cloud Volumes ONTAP deployment:

- [Single Node](#)



- [HA pair](#)

## Delete working environment for single node

You can use this workflow to delete a working environment for a single node system.

### 1. Select the working environment to use

Perform the workflow [Get working environments](#) and choose the `publicId` value of the working environment for the `workingEnvironmentId` path parameter.

### 2. Delete the working environment

HTTP method	Path
DELETE	/occm/api/vsa/working-environments/{workingEnvironmentId}

### curl example

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

### Input

Path parameter `<WORKING_ENV_ID>` `workingEnvironmentId`

Optional query parameters:

- `localDelete`

If `true` the Cloud Volumes ONTAP instance in the cloud is not terminated, but Cloud Manager no longer manages it (default is `false`).

- `forceDelete`

If `true` the working environment is deleted even if it is part of one or more SnapMirror relationships (default is `false`).

### Output

None

## Delete working environment for high availability pair

You can use this workflow to delete a working environment for an HA pair.

### 1. Select the working environment to use

Perform the workflow [Get working environments](#) and choose the `publicId` value of the working environment for the `workingEnvironmentId` path parameter.

## 2. Delete the working environment

HTTP method	Path
DELETE	/occm/api/aws/ha/working-environments/{workingEnvironmentId}

### curl example

```
curl --location --request DELETE
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/working-
environments/<WORKING_ENV_ID>' --header 'Content-Type: application/json'
--header 'x-agent-id: <AGENT_ID>' --header 'Authorization: Bearer
<ACCESS_TOKEN>'
```

### Input

Path parameter <WORKING\_ENV\_ID> `workingEnvironmentId`

Optional query parameters:

- `localDelete`

If `true` the Cloud Volumes ONTAP instance in the cloud is not terminated, but Cloud Manager no longer manages it (default is `false`).

- `forceDelete`

If `true` the working environment is deleted even if it is part of one or more SnapMirror relationships (default is `false`).

### Output

None

## Create CIFS server configuration

If you want to create CIFS volumes on your Cloud Volumes ONTAP system, you first need to configure the CIFS server. You can choose to set up the CIFS server in a workgroup or in an Active Directory domain. Review the [NetApp docs](#) for more information.

Choose the correct workflow depending on the type of the Cloud Volumes ONTAP deployment:

- [Single Node](#)
- [HA pair](#)

### Create CIFS server configuration for single node

You can use this workflow to create a CIFS server configuration for a single node system.

Choose the workflow that is specific to your goal:

- [Set up a CIFS server in a workgroup](#)
- [Set up a CIFS server in an Active Directory domain](#)

### Set up a CIFS server in a workgroup

You can configure a CIFS server in a workgroup when the Microsoft Active Directory domain infrastructure is not available.

#### 1. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` value of the working environment for the `workingEnvironmentId` path parameter.

#### 2. Create the CIFS configuration

Create the CIFS server configuration.

HTTP method	Path
POST	/occm/api/vsa/working-environments/{workingEnvironmentId}/cifs-workgroup

#### curl example

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/vsa/working-
environments/<WORKING_ENV_ID>/cifs-workgroup' --header 'Content-Type:
application/json' --header 'x-agent-id: <AGENT_ID>' --header
'Authorization: Bearer <ACCESS_TOKEN>' --d @JSONinput
```

#### Input

- Path parameter `<WORKING_ENV_ID>` `workingEnvironmentId`

#### JSON input example

```
{
  "serverName": "SMB_SERVER02",
  "workgroupName": "workgroup02",
  "svmName": "svm_ziv01we01"
}
```

#### Output

None.

### Set up a CIFS server in an Active Directory domain

You can create a CIFS server on the SVM and specify the Active Directory (AD) domain to which it belongs.

## 1. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` value of the working environment for the `workingEnvironmentId` path parameter.

## 2. Determine the Active Directory configuration

You need the following configuration parameters for an Active Directory server.

Input parameter	Description
<code>dnsDomain</code>	Use the Active Directory domain as the DNS name.
<code>ipAddresses</code>	Define the primary DNS IP address and optionally add a secondary IP address.
<code>netBIOS</code>	Use the CIFS server NetBIOS name.
<code>organizationalUnit</code>	Include the organizational unit as appropriate.
<code>activeDirectoryDomain</code>	Set the Active Directory domain to join.
<code>activeDirectoryUsername</code>	A username with authorization to join the domain.
<code>activeDirectoryPassword</code>	The password for the authorized username.

## 3. Create the CIFS configuration

Create the CIFS server configuration.

HTTP method	Path
POST	<code>/occm/api/vsa/working-environments/{workingEnvironmentId}/cifs</code>

### curl example

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/vsa/working-
environments/<WORKING_ENV_ID>/cifs' --header 'Content-Type:
application/json' --header 'x-agent-id: <AGENT_ID>' --header
'Authorization: Bearer <ACCESS_TOKEN>' --d @JSONinput
```

### Input

- Path parameter `<WORKING_ENV_ID>` `workingEnvironmentId`

### JSON input example

```
{
  "dnsDomain": "zivh.netapp.com",
  "ipAddresses": [
    "172.31.5.241"
  ],
  "netBIOS": "zivaws02we03",
  "organizationalUnit": "CN=Computers",
  "activeDirectoryDomain": "zivh.netapp.com",
  "activeDirectoryUsername": "administrator",
  "activeDirectoryPassword": "password"
}
```

## Output

None.

## Create CIFS server configuration for high availability pair

You can use this workflow to create a CIFS server configuration for an HA working environment.

Choose the workflow that is specific to your goal:

- [Set up a CIFS server in a workgroup](#)
- [Set up a CIFS server in an Active Directory domain](#)

### Set up a CIFS server in a workgroup

You can configure a CIFS server in a workgroup when the Microsoft Active Directory domain infrastructure is not available.

#### 1. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` value of the working environment for the `workingEnvironmentId` path parameter.

#### 2. Create the CIFS configuration

Create the CIFS server configuration.

HTTP method	Path
POST	/occm/api/aws/ha/working-environments/{workingEnvironmentId}/cifs-workgroup

#### curl example

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/working-
environments/<WORKING_ENV_ID>/cifs-workgroup' --header 'Content-Type:
application/json' --header 'x-agent-id: <AGENT_ID>' --header
'Authorization: Bearer <ACCESS_TOKEN>' --d @JSONinput
```

## Input

- Path parameter <WORKING\_ENV\_ID> workingEnvironmentId

## JSON input example

```
{
  "serverName": "SMB_SERVER02",
  "workgroupName": "workgroup02",
  "svmName": "svm_ziv01we01"
}
```

## Output

None.

## Set up a CIFS server in an Active Directory domain

You can create a CIFS server on the SVM and specify the Active Directory (AD) domain to which it belongs.

### 1. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` value of the working environment for the `workingEnvironmentId` path parameter.

### 2. Determine the Active Directory configuration

You need the following configuration parameters for an Active Directory server.

Input parameter	Description
dnsDomain	Use the Active Directory domain as the DNS name.
ipAddresses	Define the primary DNS IP address and optionally add a secondary IP address.
netBIOS	Use the CIFS server NetBIOS name.
organizationalUnit	Include the organizational unit as appropriate.
activeDirectoryDomain	Set the Active Directory domain to join.
activeDirectoryUsername	A username with authorization to join the domain.
activeDirectoryPassword	The password for the authorized username.

### 3. Create the CIFS configuration

Create the CIFS server configuration.

HTTP method	Path
POST	/occm/api/aws/ha/working-environments/{workingEnvironmentId}/cifs

#### curl example

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/working-
environments/<WORKING_ENV_ID>/cifs' --header 'Content-Type:
application/json' --header 'x-agent-id: <AGENT_ID>' --header
'Authorization: Bearer <ACCESS_TOKEN>' --d @JSONinput
```

#### Input

- Path parameter <WORKING\_ENV\_ID> workingEnvironmentId

#### JSON input example

```
{
  "dnsDomain": "zivh.netapp.com",
  "ipAddresses": [
    "172.31.5.241"
  ],
  "netBIOS": "zivaws02we03",
  "organizationalUnit": "CN=Computers",
  "activeDirectoryDomain": "zivh.netapp.com",
  "activeDirectoryUsername": "administrator",
  "activeDirectoryPassword": "password"
}
```

#### Output

None.

### Get CIFS server configurations

You can use this workflow to retrieve the CIFS server configurations for an existing Cloud Volumes ONTAP working environment.

Choose the correct workflow depending on the type of the Cloud Volumes ONTAP deployment:

- [Single Node](#)
- [HA pair](#)

## Get CIFS server configuration for single node

You can use this workflow to retrieve a CIFS server configuration for a single node system.

### 1. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` value of the working environment for the `workingEnvironmentId` path parameter.

### 2. Get the CIFS configurations

HTTP method	Path
GET	/occm/api/vsa/working-environments/{workingEnvironmentId}/cifs

#### curl example

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

#### Input

- Path parameter `<WORKING_ENV_ID>` `workingEnvironmentId`
- Optional query parameter `svm`

#### Output

The JSON output example includes the CIFS configurations for an existing Cloud Volumes ONTAP working environment.

#### JSON output example

```
[
  {
    "dnsDomain": "zivh.netapp.com",
    "activeDirectoryDomain": "zivh.netapp.com",
    "ipAddresses": [
      "172.31.5.241"
    ],
    "netBIOS": "zivaws02we01",
    "organizationalUnit": "CN=Computers",
    "authenticationType": "domain"
  }
]
```



## Get CIFS server configuration for high availability pair

You can use this workflow to retrieve a CIFS server configuration for an HA working environment.

### 1. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` value of the working environment for the `workingEnvironmentId` path parameter.

### 2. Get the CIFS configurations

HTTP method	Path
GET	/occm/api/aws/ha/working-environments/{workingEnvironmentId}/cifs

#### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/working-
environments/<WORKING_ENV_ID>/cifs' --header 'Content-Type:
application/json' --header 'x-agent-id: <AGENT_ID>' --header
'Authorization: Bearer <ACCESS_TOKEN>'
```

#### Input

- Path parameter `<WORKING_ENV_ID>` `workingEnvironmentId`
- Optional query parameter `svm`

#### Output

The JSON output example includes the CIFS configurations for an existing Cloud Volumes ONTAP working environment.

#### JSON output example

```
[
  {
    "dnsDomain": "zivh.netapp.com",
    "activeDirectoryDomain": "zivh.netapp.com",
    "ipAddresses": [
      "172.31.5.241"
    ],
    "netBIOS": "zivaws02we01",
    "organizationalUnit": "CN=Computers",
    "authenticationType": "domain"
  }
]
```

## Delete CIFS server configuration

You can use this workflow to delete a CIFS server configuration for an existing Cloud Volumes ONTAP working environment.

Choose the correct workflow depending on the type of the Cloud Volumes ONTAP deployment:

- [Single Node](#)
- [HA pair](#)

### Delete CIFS server configuration for single node

You can use this workflow to delete a CIFS server configuration for a single node system.

#### 1. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` value of the working environment for the `workingEnvironmentId` path parameter.

#### 2. Delete the CIFS configurations

HTTP method	Path
POST	/occm/api/vsa/working-environments/{workingEnvironmentId}/delete-cifs

#### curl example

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/vsa/working-
environments/<WORKING_ENV_ID>/delete-cifs' --header 'Content-Type:
application/json' --header 'x-agent-id: <AGENT_ID>' --header
'Authorization: Bearer <ACCESS_TOKEN>'
```

#### Input

- Path parameter `<WORKING_ENV_ID>` `workingEnvironmentId`
- Optional JSON body

```
{
  "activeDirectoryUsername": "string",
  "activeDirectoryPassword": "string",
  "svmName": "string"
}
```

#### Output

None.

## Delete CIFS server configuration for high availability pair

You can use this workflow to delete a CIFS server configuration for an HA working environment.

### 1. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` value of the working environment for the `workingEnvironmentId` path parameter.

### 2. Delete the CIFS configurations

HTTP method	Path
POST	/occm/api/aws/ha/working-environments/{workingEnvironmentId}/delete-cifs

#### curl example

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/working-
environments/<WORKING_ENV_ID>/delete-cifs' --header 'Content-Type:
application/json' --header 'x-agent-id: <AGENT_ID>' --header
'Authorization: Bearer <ACCESS_TOKEN>'
```

#### Input

- Path parameter `<WORKING_ENV_ID>` `workingEnvironmentId`
- Optional JSON body

```
{
  "activeDirectoryUsername": "string",
  "activeDirectoryPassword": "string",
  "svmName": "string"
}
```

#### Output

None.

## Aggregates

### Get aggregates

You can retrieve a list of available disk aggregates.

Choose the correct workflow depending on the type of Cloud Volumes ONTAP deployment:

- [Single Node](#)
- [HA pair](#)

## Get aggregates for single node

You can use this workflow to retrieve the aggregates for a single node working environment.

### 1. Select the working environment to use

Perform the workflow [Get working environments](#) and choose the `publicId` value of the working environment for the `workingEnvironmentId` path parameter.

### 2. Get the list of aggregates

HTTP method	Path
GET	/occm/api/vsa/aggregates/{workingEnvironmentId}

#### curl example

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

#### Input

Path parameter `<WORKING_ENV_ID>` (`workingEnvironmentId`)

#### Output

An array of aggregates for the indicated working environment is returned as shown in the JSON output example.

#### JSON output example

```
[
  {
    "name": "aggr1",
    "availableCapacity": {
      "size": 87.55,
      "unit": "GB"
    },
    "totalCapacity": {
      "size": 88.57,
      "unit": "GB"
    },
    "usedCapacity": {
      "size": 1.02,
      "unit": "GB"
    },
    "volumes": [
      {
        "name": "svm_ziv01we01_root",
```

```

        "totalSize": {
            "size": 1.0,
            "unit": "GB"
        },
        "usedSize": {
            "size": 0.00115203857421875,
            "unit": "GB"
        },
        "thinProvisioned": false,
        "isClone": false,
        "rootVolume": true
    }
],
"providerVolumes": [
    {
        "id": "vol-066fea889cbc6a65c",
        "name": "vol-066fea889cbc6a65c",
        "size": {
            "size": 100.0,
            "unit": "GB"
        },
        "state": "in-use",
        "device": "/dev/xvdg",
        "instanceId": "i-0fa9a2879e67a8829",
        "diskType": "gp2",
        "encrypted": true,
        "iops": null
    }
],
"disks": [
    {
        "name": "NET-1.3",
        "position": "data",
        "ownerNode": "ziv01we01-01",
        "device": "xvdg vol066fea889cbc6a65c",
        "vmDiskProperties": null
    }
],
"state": "online",
"encryptionType": "cloudEncrypted",
"encryptionKeyId": null,
"isRoot": false,
"homeNode": "ziv01we01-01",
"ownerNode": "ziv01we01-01",
"capacityTier": null,
"capacityTierUsed": null,

```

```

        "sidlEnabled": true,
        "snaplockType": "non_snaplock"
    }
]

```

## Get aggregates for high availability pair

You can use this workflow to retrieve the aggregates for an HA working environment.

### 1. Select the working environment to use

Perform the workflow [Get working environments](#) and choose the `publicId` value of the working environment for the `workingEnvironmentId` path parameter.

### 2. Get the list of aggregates

HTTP method	Path
GET	/occm/api/aws/ha/aggregates/{workingEnvironmentId}

### curl example

```

curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/aggregates/<WORKING_ENV_ID>' --header 'Content-Type: application/json' --header 'x-agent-id: <AGENT_ID>' --header 'Authorization: Bearer <ACCESS_TOKEN>'

```

### Input

Path parameter `<WORKING_ENV_ID>` (`workingEnvironmentId`)

### Output

An array of aggregates for the indicated working environment is returned as shown in the JSON output example.

### JSON output example

```

[
  {
    "name": "aggr1",
    "availableCapacity": {
      "size": 83.13,
      "unit": "GB"
    },
    "totalCapacity": {
      "size": 84.14,
      "unit": "GB"
    },
    "usedCapacity": {

```

```

    "size": 1.02,
    "unit": "GB"
  },
  "volumes": [
    {
      "name": "svm_ziv04we0lha_root",
      "totalSize": {
        "size": 1.0,
        "unit": "GB"
      },
      "usedSize": {
        "size": 7.0953369140625E-4,
        "unit": "GB"
      },
      "thinProvisioned": false,
      "isClone": false,
      "rootVolume": true
    }
  ],
  "providerVolumes": [
    {
      "id": "vol-0d5d1983432218cec",
      "name": "vol-0d5d1983432218cec",
      "size": {
        "size": 100.0,
        "unit": "GB"
      },
      "state": "in-use",
      "device": "/dev/xvdh",
      "instanceId": "i-053d9d1bce8121c43",
      "diskType": "gp2",
      "encrypted": true,
      "iops": null
    },
    {
      "id": "vol-0a3fe8eaed2af69de",
      "name": "vol-0a3fe8eaed2af69de",
      "size": {
        "size": 100.0,
        "unit": "GB"
      },
      "state": "in-use",
      "device": "/dev/xvdh",
      "instanceId": "i-0392f55ca4bc06322",
      "diskType": "gp2",
      "encrypted": true,

```

```

        "iops": null
    },
    ],
    "disks": [
        {
            "name": "NET-1.4",
            "position": "data",
            "ownerNode": "ziv04we01ha-01",
            "device": "xvdh vol0d5d1983432218cec",
            "vmDiskProperties": null
        },
        {
            "name": "NET-2.4",
            "position": "data",
            "ownerNode": "ziv04we01ha-01",
            "device": "xvdh vol0a3fe8eaed2af69de",
            "vmDiskProperties": null
        }
    ],
    "state": "online",
    "encryptionType": "cloudEncrypted",
    "encryptionKeyId": null,
    "isRoot": false,
    "homeNode": "ziv04we01ha-01",
    "ownerNode": "ziv04we01ha-01",
    "capacityTier": null,
    "capacityTierUsed": null,
    "sidlEnabled": true,
    "snaplockType": "non_snaplock"
},
{
    "name": "ziv04we01haagg01",
    "availableCapacity": {
        "size": 84.14,
        "unit": "GB"
    },
    "totalCapacity": {
        "size": 84.14,
        "unit": "GB"
    },
    "usedCapacity": {
        "size": 156.0,
        "unit": "KB"
    },
    "volumes": [],
    "providerVolumes": [

```



```

    {
      "id": "vol-0149ffa06bb4e92ad",
      "name": "vol-0149ffa06bb4e92ad",
      "size": {
        "size": 100.0,
        "unit": "GB"
      },
      "state": "in-use",
      "device": "/dev/xvdi",
      "instanceId": "i-0392f55ca4bc06322",
      "diskType": "gp2",
      "encrypted": true,
      "iops": null
    },
    {
      "id": "vol-03e6ada9e893b1196",
      "name": "vol-03e6ada9e893b1196",
      "size": {
        "size": 100.0,
        "unit": "GB"
      },
      "state": "in-use",
      "device": "/dev/xvdi",
      "instanceId": "i-053d9d1bce8121c43",
      "diskType": "gp2",
      "encrypted": true,
      "iops": null
    }
  ],
  "disks": [
    {
      "name": "NET-2.5",
      "position": "data",
      "ownerNode": "ziv04we01ha-01",
      "device": "xvdi vol0149ffa06bb4e92ad",
      "vmDiskProperties": null
    },
    {
      "name": "NET-1.5",
      "position": "data",
      "ownerNode": "ziv04we01ha-01",
      "device": "xvdi vol03e6ada9e893b1196",
      "vmDiskProperties": null
    }
  ],
  "state": "online",

```

```

    "encryptionType": "cloudEncrypted",
    "encryptionKeyId": null,
    "isRoot": false,
    "homeNode": "ziv04we01ha-01",
    "ownerNode": "ziv04we01ha-01",
    "capacityTier": null,
    "capacityTierUsed": null,
    "sidlEnabled": true,
    "snaplockType": "non_snaplock"
  }
]

```

## Create aggregate

You can create a new aggregate within a working environment using this workflow. Choose the correct workflow depending on the type of Cloud Volumes ONTAP deployment:

- [Single Node](#)
- [HA pair](#)

### Create aggregate for single node

You can use this workflow to create an aggregate for a single node working environment.

#### 1. Select the working environment to use

Perform the workflow [Get working environments](#) and choose the `publicId` value for the `workingEnvironmentId` parameter.

#### 2. Create the aggregate

HTTP method	Path
POST	occm/api/vsa/aggregates

#### curl example

```

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

```

#### Input

The JSON input example includes the minimum list of input parameters.

## JSON input example

```
{
  "name": "ziv01agg04",
  "workingEnvironmentId": "VsaWorkingEnvironment-9e6p8LuF",
  "numberOfDisks": 1,
  "diskSize": {
    "size": 100,
    "unit": "GB"
  },
  "providerVolumeType": "gp2"
}
```

## Output

None

## Create aggregate for high availability pair

You can use this workflow to create an aggregate for an HA working environment.

### 1. Select the working environment to use

Perform the workflow [Get working environments](#) and choose the `publicId` value for the `workingEnvironmentId` parameter.

### 2. Create the aggregate

HTTP method	Path
POST	occm/api/aws/ha/aggregates

## curl example

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/aggregates'
--header 'Content-Type: application/json' --header 'x-agent-id:
<AGENT_ID>' --header 'Authorization: Bearer <ACCESS_TOKEN>' --d @JSONinput
```

## Input

The JSON input example includes the minimum list of input parameters.

## JSON input example

```
{
  "name": "ziv01agg04",
  "workingEnvironmentId": "VsaWorkingEnvironment-9e6p8LuF",
  "numberOfDisks": 1,
  "diskSize": {
    "size": 100,
    "unit": "GB"
  },
  "providerVolumeType": "gp2"
}
```

## Output

None

## Add disks to aggregate

You can add disks to an existing aggregate.

Choose the correct workflow depending on the type of Cloud Volumes ONTAP deployment:

- [Single Node](#)
- [HA pair](#)

### Add disks to an aggregate for single node

You can use this workflow to add disks to an aggregate for a single node working environment.

#### 1. Select the working environment to use

Perform the workflow [Get working environments](#) and choose the `publicId` value for the `workingEnvironmentId` path parameter.

#### 2. Select the aggregate

Perform the workflow [Get aggregates](#) and choose the `name` value for the `aggregateName` path parameter.

#### 3. Add the disks

HTTP method	Path
POST	<code>/occm/api/vsa/aggregates/{workingEnvironmentId}/{aggregateName}/disks</code>

#### curl example

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/vsa/aggregates/<WORKING_ENV_ID>/<AGGR_NAME>/disks' --header 'Content-Type: application/json'
--header 'x-agent-id: <AGENT_ID>' --header 'Authorization: Bearer <ACCESS_TOKEN>' --d @JSONinput
```

## Input

You must include the following path parameters:

- <WORKING\_ENV\_ID> (workingEnvironmentId)
- <AGGR\_NAME> (aggregateName)

Also, the JSON input example includes an input parameter as shown.

## JSON input example

```
{
  "numberOfDisks": "1"
}
```

## Output

None

## Add disks to an aggregate for high availability pair

You can use this workflow to add disks to an aggregate for HA working environment.

### 1. Select the working environment to use

Perform the workflow [Get working environments](#) and choose the `publicId` value for the `workingEnvironmentId` path parameter.

### 2. Select the aggregate

Perform the workflow [Get aggregates](#) and choose the `name` value for the `aggregateName` path parameter.

### 3. Add the disks

HTTP method	Path
POST	/occm/api/aws/ha/aggregates/{workingEnvironmentId}/{aggregateName}/disks

## curl example

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/aggregates/<WORKING_ENV_ID>/<AGGR_NAME>/disks' --header 'Content-Type: application/json'
--header 'x-agent-id: <AGENT_ID>' --header 'Authorization: Bearer <ACCESS_TOKEN>' --d @JSONinput
```

## Input

You must include the following path parameters:

- <WORKING\_ENV\_ID> (workingEnvironmentId)
- <AGGR\_NAME> (aggregateName)

Also, the JSON input example includes an input parameter as shown.

## JSON input example

```
{
  "numberOfDisks": "1"
}
```

## Output

None

## Delete aggregate

You can delete an existing disk aggregate. Choose the correct workflow depending on the type of Cloud Volumes ONTAP deployment:

- [Single Node](#)
- [HA pair](#)

### Delete aggregate for single node

You can use this workflow to delete an aggregate for a single node working environment.

#### 1. Select the working environment to use

Perform the workflow [Get working environments](#) and choose the `publicId` value for the `workingEnvironmentId` path parameter.

#### 2. Select the aggregate to delete

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

#### 3. Delete the aggregate

HTTP method	Path
DELETE	/occm/api/vsa/aggregates/{workingEnvironmentId}/{aggregateName}

#### curl example

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

#### Input

Path parameters:

<WORKING\_ENV\_ID> (workingEnvironmentId)  
<AGGR\_NAME> (aggregateName)

#### Output

None

### Delete aggregate for high availability pair

You can use this workflow to delete an aggregate for an HA working environment.

#### 1. Select the working environment to use

Perform the workflow [Get working environments](#) and choose the `publicId` value for the `workingEnvironmentId` path parameter.

#### 2. Select the aggregate to delete

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

#### 3. Delete the aggregate

HTTP method	Path
DELETE	/occm/api/aws/ha/aggregates/{workingEnvironmentId}/{aggregateName}

#### curl example

```
curl --location --request DELETE
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/aggregates/<WORKING_ENV_ID>/<AGGR_NAME>' --header 'Content-Type: application/json' --header 'x-agent-id: <AGENT_ID>' --header 'Authorization: Bearer <ACCESS_TOKEN>'
```

#### Input

Path parameters:

<WORKING\_ENV\_ID> (workingEnvironmentId)

<AGGR\_NAME> (aggregateName)

## Output

None

# Volumes

## Create volume using NFS

You can use this workflow to create a volume accessed through NFS protocol.



If the properties `aggregateName` and `maxNumOfDisksApprovedToAdd` are not provided on the REST API call, the response will fail with a suggested name for the aggregate and the number of disks needed to fulfill the request.

Choose the correct workflow depending on the type of Cloud Volumes ONTAP deployment:

- [Single Node](#)
- [HA pair](#)

## Create volume using NFS for single node

You can use this workflow to create volume using NFS for a single node system.

### 1. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` and the `svmName` values for the `workingEnvironmentId` and the `svmName` parameters.

### 2. Select the aggregate

Perform the workflow [Get aggregates](#) and choose the `name` value of the aggregate for the `name` parameter.



If aggregate name does not exist and the `createAggregateIfNotFound` query parameter is set `true`, the create volume request is allowed if the named aggregate is not found.

### 3. Select the virtual private cloud

Perform the workflow [Get virtual private clouds](#) and choose the `cidrBlock` value of the required VPC for the `ips` parameter or fill in the desired `exportPolicyInfo` value manually.

### 4. Choose the size for the disk

Choose the size value for the `size:size` parameter. The `size:unit` must be one of the following: TB, GB, MB, KB, or Byte.

### 5. Create the quote

Perform the workflow [Create quote](#). This is a recommended step but is not mandatory.



## 6. Create the volume

HTTP method	Path
POST	/occm/api/vsa/volumes

### curl example

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

### Input

The JSON input example includes the minimum list of input parameters, including:

- <WORKING\_ENV\_ID> (workingEnvironmentId)
- <SVM\_NAME> (svmName)
- <AGGR\_NAME> (aggregateName)

If aggregate name does not exist, you can set the `createAggregateIfNotFound` query parameter to `true` which allows the aggregate not-found condition.

### JSON input example

```
{
  "workingEnvironmentId": "VsaWorkingEnvironment-5dZfyKS5",
  "svmName": "svm_ziv01we01",
  "aggregateName": "ziv01agg01",
  "name": "ziv01vol04",
  "size": {
    "size": 100,
    "unit": "GB"
  },
  "exportPolicyInfo": {
    "policyType": "custom",
    "ips": [
      "172.31.0.0/16"
    ],
    "nfsVersion": [
      "nfs3",
      "nfs4"
    ]
  },
  "snapshotPolicyName": "default",
  "enableThinProvisioning": true,
  "enableCompression": true,
  "enableDeduplication": true,
  "maxNumOfDisksApprovedToAdd": 0
}
```

## Output

None

## Create volume using NFS for high availability pair

You can use this workflow to create volume using NFS for an HA working environment.

### 1. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` and the `svmName` values for the `workingEnvironmentId` and the `svmName` parameters.

### 2. Select the aggregate

Perform the workflow [Get aggregates](#) and choose the `name` value of the aggregate for the `name` parameter.



If aggregate name does not exist and the `createAggregateIfNotFound` query parameter is set `true`, the create volume request is allowed if the named aggregate is not found.

### 3. Select the virtual private cloud

Perform the workflow [Get virtual private clouds](#) and choose the `cidrBlock` value of the required VPC for the `ips` parameter or fill in the desired `exportPolicyInfo` value manually.

### 4. Choose the size for the disk

Choose the size value for the `size:size` parameter. The `size:unit` must be one of the following: TB, GB, MB, KB, or Byte.

### 5. Create the quote

Perform the workflow [Create quote](#). This is a recommended step but is not mandatory.

### 6. Create the volume

HTTP method	Path
POST	/occm/api/aws/ha/volumes

#### curl example

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/volumes' --header
'Content-Type: application/json' --header 'x-agent-id: <AGENT_ID>'
--header 'Authorization: Bearer <ACCESS_TOKEN>' --d @JSONinput
```

#### Input

The JSON input example includes the minimum list of input parameters, including:

- `<WORKING_ENV_ID>` (`workingEnvironmentId`)
- `<SVM_NAME>` (`svmName`)
- `<AGGR_NAME>` (`aggregateName`)

If aggregate name does not exist, you can set the `createAggregateIfNotFound` query parameter to `true` which allows the aggregate not-found condition.

#### JSON input example

```
{
  "workingEnvironmentId": "VsaWorkingEnvironment-5dZfyKS5",
  "svmName": "svm_ziv01we01",
  "aggregateName": "ziv01agg01",
  "name": "ziv01vol04",
  "size": {
    "size": 100,
    "unit": "GB"
  },
  "exportPolicyInfo": {
    "policyType": "custom",
    "ips": [
      "172.31.0.0/16"
    ],
    "nfsVersion": [
      "nfs3",
      "nfs4"
    ]
  },
  "snapshotPolicyName": "default",
  "enableThinProvisioning": true,
  "enableCompression": true,
  "enableDeduplication": true,
  "maxNumOfDisksApprovedToAdd": 0
}
```

## Output

None

## Create volume using CIFS

You can use this workflow to create a volume accessed through CIFS.



If the properties `aggregateName` and `maxNumOfDisksApprovedToAdd` are not provided on the REST API call, the response will fail with a suggested name for the aggregate and the number of disks needed to fulfill the request.

Choose the correct workflow depending on the type of Cloud Volumes ONTAP deployment:

- [Single Node](#)
- [HA pair](#)

### Create volume using CIFS for single node

You can use this workflow to create volume using CIFS protocol for a single node system.

### 1. Choose the CIFS configuration

A CIFS server configuration must be defined for your working environment. You can do one of the following:

- If a CIFS configuration already exists, perform the workflow [Get CIFS server configurations](#) to access the configuration parameters.
- If a CIFS configuration does not exist, perform the workflow [Create CIFS server configuration](#) to create one.

### 2. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` and the `svmName` values for the `workingEnvironmentId` (working environment) and the `svmName` (SVM name) parameters.

### 3. Select the aggregate

Perform the workflow [Get aggregates](#) and choose the name for the `aggregateName` value.



If aggregate name does not exist and the `createAggregateIfNotFound` query parameter is set `true`, the create volume request is allowed if the named aggregate is not found.

### 4. Choose the size for the disk

Choose the size value for the `size:size` parameter. The `size:unit` must be one of the following: TB, GB, MB, KB, or Byte.

### 5. Create the quote

Perform the workflow [Create quote](#). This is a recommended step but is not mandatory.

### 6. Create the volume

HTTP method	Path
POST	/occm/api/vsa/volumes

#### curl example

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

#### Input

The JSON input example includes the minimum list of input parameters, including:

- `<WORKING_ENV_ID>` (`workingEnvironmentId`)
- `<SVM_NAME>` (`svmName`)
- `<AGGR_NAME>` (`aggregateName`)

If an aggregate name does not exist, you can set the `createAggregateIfNotFound` query parameter to `true` which allows the aggregate not-found condition.

### JSON input example

```
{
  "workingEnvironmentId": "VsaWorkingEnvironment-SfpVUZSc",
  "svmName": "svm_zivaws02we01",
  "aggregateName": "aggr1",
  "name": "zivaws02we02vol02Cifs",
  "size": {
    "size": 100,
    "unit": "GB"
  },
  "shareInfo": {
    "accessControl": {
      "permission": "full_control",
      "users": [
        "Everyone"
      ],
      "users": "Everyone;"
    },
    "shareName": "zivaws02we01vol02Cifs_share"
  },
  "snapshotPolicyName": "default",
  "enableThinProvisioning": true,
  "enableCompression": true,
  "enableDeduplication": true,
  "maxNumOfDisksApprovedToAdd": 0
}
```

### Output

None

### Create volume using CIFS for high availability pair

You can use this workflow to create volume using CIFS for an HA working environment.

#### 1. Choose the CIFS configuration

A CIFS server configuration must be defined for your working environment. You can do one of the following:

- If a CIFS configuration already exists, perform the workflow [Get CIFS server configurations](#) to access the configuration parameters.
- If a CIFS configuration does not exist, perform the workflow [Create CIFS server configuration](#) to create one.

## 2. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` and the `svmName` values for the `workingEnvironmentId` (working environment) and the `svmName` (SVM name) parameters.

## 3. Select the aggregate

Perform the workflow [Get aggregates](#) and choose the name for the `aggregateName` value.



If aggregate name does not exist and the `createAggregateIfNotFound` query parameter is set `true`, the create volume request is allowed if the named aggregate is not found.

## 4. Choose the size for the disk

Choose the size value for the `size:size` parameter. The `size:unit` must be one of the following: TB, GB, MB, KB, or Byte.

## 5. Create the quote

Perform the workflow [Create quote](#). This is a recommended step but is not mandatory.

## 6. Create the volume

HTTP method	Path
POST	/occm/api/aws/ha/volumes

### curl example

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/volumes' --header
'Content-Type: application/json' --header 'x-agent-id: <AGENT_ID>'
--header 'Authorization: Bearer <ACCESS_TOKEN>' --d @JSONinput
```

### Input

The JSON input example includes the minimum list of input parameters, including:

- `<WORKING_ENV_ID>` (`workingEnvironmentId`)
- `<SVM_NAME>` (`svmName`)
- `<AGGR_NAME>` (`aggregateName`)

If an aggregate name does not exist, you can set the `createAggregateIfNotFound` query parameter to `true` which allows the aggregate not-found condition.

### JSON input example

```
{
  "workingEnvironmentId": "VsaWorkingEnvironment-SfpVUZSc",
  "svmName": "svm_zivaws02we01",
  "aggregateName": "aggr1",
  "name": "zivaws02we02vol02Cifs",
  "size": {
    "size": 100,
    "unit": "GB"
  },
  "shareInfo": {
    "accessControl": {
      "permission": "full_control",
      "users": [
        "Everyone"
      ],
      "users": "Everyone;"
    },
    "shareName": "zivaws02we01vol02Cifs_share"
  },
  "snapshotPolicyName": "default",
  "enableThinProvisioning": true,
  "enableCompression": true,
  "enableDeduplication": true,
  "maxNumOfDisksApprovedToAdd": 0
}
```

## Output

None

## Create volume using iSCSI

You can use this workflow to create a volume accessed through iSCSI protocol.

Choose the correct workflow depending on the type of Cloud Volumes ONTAP deployment:

- [Single Node](#)
- [HA pair](#)

### Create volume using iSCSI for single node

You can use this workflow to create volume using iSCSI for a single node system.

There are two workflows available depending on whether a new or existing iGroup is used. You need to select the correct workflow:

- [Create volume using iSCSI with a new iGroup](#)
- [Create volume using iSCSI with an existing iGroup](#)



## Create volume using iSCSI with a new iGroup



If the properties `aggregateName` and `maxNumOfDisksApprovedToAdd` are not provided on the REST API call, the response will fail with a suggested name for the aggregate and the number of disks needed to fulfill the request.

### 1. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` value for the `workingEnvironmentId` parameter and the `svmName` value for the `svmName` parameter.

### 2. Select the aggregate

Perform the workflow [Get aggregates](#) and choose the name for the `aggregateName` value.

### 3. Choose the size for the disk

Choose the size value for the `size:size` parameter. The `size:unit` must be one of the following: TB, GB, MB, KB, or Byte.

### 4. Choose the iscsiInfo parameters

You must choose the following values for the REST API call:

- A unique `igroup` name for `igroupCreationRequest` → `igroupName` parameter
- The required `iqn's` to `igroupCreationRequest` → `initiators` parameter.
- The required operating system for the `osName` parameter from one of the following:
  - windows
  - linux
  - vmware
  - windows\_2008
  - windows\_gpt

### 5. Create the quote

Perform the workflow [Create quote](#). This is a recommended step but is not mandatory.

### 6. Create the volume

HTTP method	Path
POST	/occm/api/vsa/volumes

#### curl example

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

## Input

The JSON input example includes the minimum list of input parameters, including:

- <WORKING\_ENV\_ID> (workingEnvironmentId)
- <SVM\_NAME> (svmName)
- <AGGR\_NAME> (aggregateName)

If aggregate name does not exist, you can set the `createAggregateIfNotFound` query parameter to `true` which allows the aggregate not-found condition.

## JSON input example

```
{
  "workingEnvironmentId": "VsaWorkingEnvironment-SfpVUZSc",
  "svmName": "svm_zivaws02we01",
  "aggregateName": "aggr1",
  "name": "zivaws02we01vol01Iscsi",
  "size": {
    "size": 100,
    "unit": "GB"
  },
  "iscsiInfo": {
    "igroupCreationRequest": {
      "igroupName": "zivIgroup",
      "initiators": [
        "iqn.1994-05.com.redhat:96de86825216",
        "iqn.1994-05.com.redhat:96de86823426"
      ]
    },
    "osName": "linux"
  },
  "snapshotPolicyName": "default",
  "enableThinProvisioning": true,
  "enableCompression": true,
  "enableDeduplication": true,
  "maxNumOfDisksApprovedToAdd": 0
}
```

## Output

None

### Create volume using iSCSI with an existing iGroup



If the properties `aggregateName` and `maxNumOfDisksApprovedToAdd` are not provided on the REST API call, the response will fail with a suggested name for the aggregate and the number of disks needed to fulfill the request.

#### 1. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` value for the `workingEnvironmentId` parameter and the `svmName` value for the `svmName` parameter.

#### 2. Select the aggregate

Perform the workflow [Get aggregates](#) and choose the name for the `aggregateName` parameter.

#### 3. Choose the size for the disk

Choose the size value for the `size:size` parameter. The `size:unit` must be one of the following: TB, GB, MB, KB, or Byte.

#### 4. Choose the iGroup

Perform the workflow [Get iGroups](#) and choose the `igroups` for the `iscsiInfo → igroups` value. Also select the `osType` value for the `iscsiInfo → osName`.

#### 5. Create the quote

Perform the workflow [Create quote](#). This is a recommended step but is not mandatory.

#### 6. Create the volume

HTTP method	Path
POST	/occm/api/vsa/volumes

#### curl example

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

## Input

The JSON input example includes the minimum list of input parameters, including:

- `<WORKING_ENV_ID>` (`workingEnvironmentId`)
- `<SVM_NAME>` (`svmName`)

- <AGGR\_NAME> (aggregateName)

If an aggregate name does not exist, you can set the `createAggregateIfNotFound` query parameter to `true` which allows the aggregate not-found condition.

### JSON input example

```
{
  "workingEnvironmentId": "VsaWorkingEnvironment-UvFmWXoD",
  "svmName": "svm_zivaws01we01",
  "aggregateName": "aggr1",
  "name": "zivaws01we01vol05Iscsi",
  "size": {
    "size": 100,
    "unit": "GB"
  },
  "iscsiInfo": {
    "igroups": ["zivIgroup1"],
    "osName": "linux"
  },
  "snapshotPolicyName": "default",
  "enableThinProvisioning": true,
  "enableCompression": true,
  "enableDeduplication": true,
  "maxNumOfDisksApprovedToAdd": 0
}
```

### Output

None

### Create volume using iSCSI for high availability pair

You can use this workflow to create volume using iSCSI for an HA working environment.

There are two workflows available depending on whether a new or existing iGroup is used. You need to select the correct workflow:

- [Create volume using iSCSI with a new iGroup](#)
- [Create volume using iSCSI with an existing iGroup](#)

### Create volume using iSCSI with a new iGroup



If the properties `aggregateName` and `maxNumOfDisksApprovedToAdd` are not provided on the REST API call, the response will fail with a suggested name for the aggregate and the number of disks needed to fulfill the request.

## 1. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` value for the `workingEnvironmentId` parameter and the `svmName` value for the `svmName` parameter.

## 2. Select the aggregate

Perform the workflow [Get aggregates](#) and choose the `name` for the `aggregateName` parameter.

## 3. Choose the size for the disk

Choose the size value for the `size:size` parameter. The `size:unit` must be one of the following: TB, GB, MB, KB, or Byte.

## 4. Choose the iscsiInfo parameters

You must choose the following values for the REST API call:

- A unique igroup name for `igroupCreationRequest` → `igroupName` parameter
- The required iqn's to `igroupCreationRequest` → `initiators` parameter.
- The required operating system for the `osName` parameter from one of the following:
  - windows
  - linux
  - vmware
  - windows\_2008
  - windows\_gpt

## 5. Create the quote

Perform the workflow [Create quote](#). This is a recommended step but is not mandatory.

## 6. Create the volume

HTTP method	Path
POST	/occm/api/aws/ha/volumes

### curl example

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/volumes' --header
'Content-Type: application/json' --header 'x-agent-id: <AGENT_ID>'
--header 'Authorization: Bearer <ACCESS_TOKEN>' --d @JSONinput
```

### Input

The JSON input example includes the minimum list of input parameters, including:

- `<WORKING_ENV_ID>` (`workingEnvironmentId`)

- <SVM\_NAME> (svmName)
- <AGGR\_NAME> (aggregateName)

If aggregate name does not exist, you can set the `createAggregateIfNotFound` query parameter to `true` which allows the aggregate not-found condition.

### JSON input example

```
{
  "workingEnvironmentId": "VsaWorkingEnvironment-SfpVUZSc",
  "svmName": "svm_zivaws02we01",
  "aggregateName": "aggr1",
  "name": "zivaws02we01vol01Iscsi",
  "size": {
    "size": 100,
    "unit": "GB"
  },
  "iscsiInfo": {
    "igroupCreationRequest": {
      "igroupName": "zivIgroup",
      "initiators": [
        "iqn.1994-05.com.redhat:96de86825216",
        "iqn.1994-05.com.redhat:96de86823426"
      ]
    },
    "osName": "linux"
  },
  "snapshotPolicyName": "default",
  "enableThinProvisioning": true,
  "enableCompression": true,
  "enableDeduplication": true,
  "maxNumOfDisksApprovedToAdd": 0
}
```

### Output

None

### Create volume using iSCSI with an existing iGroup



If the properties `aggregateName` and `maxNumOfDisksApprovedToAdd` are not provided on the REST API call, the response will fail with a suggested name for the aggregate and the number of disks needed to fulfill the request.

### 1. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` value for the `workingEnvironmentId` parameter and the `svmName` value for the `svmName` parameter.

## 2. Select the aggregate

Perform the workflow [Get aggregates](#) and choose the name for the `aggregateName` parameter.

## 3. Choose the size for the disk

Choose the size value for the `size:size` parameter. The `size:unit` must be one of the following: TB, GB, MB, KB, or Byte.

## 4. Choose the iGroup

Perform the workflow [Get iGroups](#) and choose the igroups for the `iscasiInfo → igroups` value. Also select the `osType` value for the `iscasiInfo → osName`.

## 5. Create the quote

Perform the workflow [Create quote](#). This is a recommended step but is not mandatory.

## 6. Create the volume

HTTP method	Path
POST	/occm/api/vsa/volumes

### curl example

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

### Input

The JSON input example includes the minimum list of input parameters, including:

- `<WORKING_ENV_ID>` (`workingEnvironmentId`)
- `<SVM_NAME>` (`svmName`)
- `<AGGR_NAME>` (`aggregateName`)

If an aggregate name does not exist, you can set the `createAggregateIfNotFound` query parameter to `true` which allows the aggregate not-found condition.

### JSON input example

```
{
  "workingEnvironmentId": "VsaWorkingEnvironment-UvFmWXoD",
  "svmName": "svm_zivaws01we01",
  "aggregateName": "aggr1",
  "name": "zivaws01we01vol05Iscsi",
  "size": {
    "size": 100,
    "unit": "GB"
  },
  "iscsiInfo": {
    "igroups": ["zivIgroup1"],
    "osName": "linux"
  },
  "snapshotPolicyName": "default",
  "enableThinProvisioning": true,
  "enableCompression": true,
  "enableDeduplication": true,
  "maxNumOfDisksApprovedToAdd": 0
}
```

## Output

None

## Get volumes

You can retrieve the list of volumes.

Choose the correct workflow depending on the type of Cloud Volumes ONTAP deployment:

- [Single Node](#)
- [HA pair](#)

### Get volumes for single node

You can use this workflow to retrieve a list of volumes for a single node working environment.

#### 1. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` value of the working environment for the `workingEnvironmentId` query parameter.

#### 2. Get the volumes

HTTP method	Path
GET	/occm/api/vsa/volumes



## curl example

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

## Input

Query parameter <WORKING\_ENV\_ID> (workingEnvironmentId)

## Output

The JSON output example includes the list of volumes for the working environment.

## JSON output example

```
[
  {
    "name": "ziv02vol01",
    "uuid": "cb488216-5bd1-11eb-8a9b-615eb82c79d8",
    "svmName": "svm_ziv01we02",
    "size": {
      "size": 100.0,
      "unit": "GB"
    },
    "usedSize": {
      "size": 5.18798828125E-4,
      "unit": "GB"
    },
    "junctionPath": "/ziv02vol01",
    "volumeTotalInodes": 3112959,
    "volumeUsedInodes": 96,
    "mountPoint": "172.31.1.199:/ziv02vol01",
    "compressionSpaceSaved": {
      "size": 0.0,
      "unit": "GB"
    },
    "deduplicationSpaceSaved": {
      "size": 0.0,
      "unit": "GB"
    },
    "thinProvisioning": true,
    "compression": true,
    "deduplication": true,
    "snapshotPolicy": "default",
    "securityStyle": "unix",
    "exportPolicyInfo": {
```

```

    "name": "export-svm_ziv01we02-ziv02vol01",
    "policyType": "custom",
    "ips": [
        "172.31.0.0/16"
    ],
    "nfsVersion": [
        "nfs3"
    ]
},
"shareNames": [],
"shareInfo": [],
"parentVolumeName": "",
"rootVolume": false,
"state": "online",
"volumeType": "rw",
"aggregateName": "aggr1",
"parentSnapshot": null,
"autoSizeMode": "grow",
"maxGrowSize": {
    "size": 1100.0,
    "unit": "GB"
},
"providerVolumeType": "gp2",
"cloneNames": [],
"moving": false,
"primaryNoFailoverMountPoint": null,
"secondaryNoFailoverMountPoint": null,
"capacityTier": null,
"capacityTierUsedSize": null,
"cifsShareAccessPoint": null,
"primaryCifsShareAccessPoint": null,
"secondaryCifsShareAccessPoint": null,
"tieringPolicy": "none",
"tierInactiveUserData": {
    "size": 0.0,
    "unit": "GB"
},
"tierInactiveUserDataPercent": 0,
"comment": null,
"qosPolicyGroupName": null,
"snaplockType": "non_snaplock",
"constituentsAggregates": [],
"snapshotsUsedSize": {
    "size": 1597440.0,
    "unit": "Byte"
},
},

```

```

    "cbsBackupsInfo": null,
    "minimumCoolingDays": null,
    "targetName": "iqn.1992-
08.com.netapp:sn.7d147b755bd011ebb076ef46475a0933:vs.2",
    "iscsiEnabled": false,
    "isFlexGroupVolume": false
  }
]

```

## Get volumes for high availability pair

You can use this workflow to retrieve a list of volumes for an HA working environment.

### 1. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` value of the working environment for the `workingEnvironmentId` query parameter.

### 2. Get the volumes

HTTP method	Path
GET	/occm/api/aws/ha/volumes

### curl example

```

curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/volumes?workingEnvironmentId=<WORKING_ENV_ID>' --header 'Content-Type: application/json'
--header 'x-agent-id: <AGENT_ID>' --header 'Authorization: Bearer
<ACCESS_TOKEN>'

```

### Input

Query parameter `<WORKING_ENV_ID>` (`workingEnvironmentId`)

### Output

The JSON output example includes the list of volumes for the working environment.

```

[
{
  "name": "ziv04we01haagg01vol01",
  "uuid": "728ad225-61ca-11eb-81ba-637783e50391",
  "svmName": "svm_ziv04we01ha",
  "size": {
    "size": 100.0,
    "unit": "GB"
  },

```

```

"usedSize": {
  "size": 2.93731689453125E-4,
  "unit": "GB"
},
"junctionPath": "/ziv04we01haagg01vol01",
"volumeTotalInodes": 3112959,
"volumeUsedInodes": 96,
"mountPoint": "2.2.2.2:/ziv04we01haagg01vol01",
"compressionSpaceSaved": {
  "size": 0.0,
  "unit": "GB"
},
"deduplicationSpaceSaved": {
  "size": 0.0,
  "unit": "GB"
},
"thinProvisioning": true,
"compression": true,
"deduplication": true,
"snapshotPolicy": "default",
"securityStyle": "unix",
"exportPolicyInfo": {
  "name": "export-svm_ziv04we01ha-ziv04we01haagg01vol01",
  "policyType": "custom",
  "ips": [
    "172.31.0.0/16"
  ],
  "nfsVersion": [
    "nfs3",
    "nfs4"
  ]
},
"shareNames": [],
"shareInfo": [],
"parentVolumeName": "",
"rootVolume": false,
"state": "online",
"volumeType": "rw",
"aggregateName": "aggr1",
"parentSnapshot": null,
"autoSizeMode": "grow",
"maxGrowSize": {
  "size": 1100.0,
  "unit": "GB"
},
"providerVolumeType": "gp2",

```

```

    "cloneNames": [],
    "moving": false,
    "primaryNoFailoverMountPoint":
"172.31.1.36:/ziv04we01haagg01vol01",
    "secondaryNoFailoverMountPoint":
"172.31.2.210:/ziv04we01haagg01vol01",
    "capacityTier": null,
    "capacityTierUsedSize": null,
    "cifsShareAccessPoint": null,
    "primaryCifsShareAccessPoint": null,
    "secondaryCifsShareAccessPoint": null,
    "tieringPolicy": "none",
    "tierInactiveUserData": {
        "size": 0.0,
        "unit": "GB"
    },
    "tierInactiveUserDataPercent": 0,
    "comment": null,
    "qosPolicyGroupName": null,
    "snaplockType": "non_snaplock",
    "constituentsAggregates": [],
    "snapshotsUsedSize": {
        "size": 0.0,
        "unit": "Byte"
    },
    "cbsBackupsInfo": null,
    "minimumCoolingDays": null,
    "targetName": "iqn.1992-
08.com.netapp:sn.c4a88d8c618511eba2c7672081bef253:vs.3",
    "iscsiEnabled": false,
    "isFlexGroupVolume": false
}
]

```

## Modify volume

You can modify the configuration of an existing volume.

Choose the correct workflow depending on the type of Cloud Volumes ONTAP deployment:

- [Single Node](#)
- [HA pair](#)

### Modify volume for single node

You can use this workflow to modify the configuration of an existing volume for a single node working environment.

### 1. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` and `svmName` values for the `workingEnvironmentId` and `svmName` path parameters.

### 2. Select the volume

Perform the workflow [Get volumes](#) and choose the name for the `volumeName` path parameter.

### 3. Modify the volume

HTTP method	Path
PUT	/occm/api/vsa/volumes/{workingEnvironmentId}/{svmName}/{volumeName}

#### curl example

```
curl --location --request PUT
'https://cloudmanager.cloud.netapp.com/occm/api/vsa/volumes/<WORKING_ENV_ID>/<SVM_NAME>/<VOLUME_NAME>' --header 'Content-Type: application/json'
--header 'x-agent-id: <AGENT_ID>' --header 'Authorization: Bearer <ACCESS_TOKEN>' --d @JSONinput
```

#### Input

Path parameters:

- `<WORKING_ENV_ID>` (`workingEnvironmentId`)
- `<SVM_NAME>` (`svmName`)
- `<VOLUME_NAME>` (`volumeName`)

The JSON input example includes the minimum list of input parameters.

#### JSON input example

```
{
  "exportPolicyInfo": {
    "policyType": "custom",
    "ips": [
      "172.31.0.0/16"
    ],
    "nfsVersion": [
      "nfs3"
    ]
  }
}
```

#### Output

None

## Modify volume for high availability pair

You can use this workflow to modify the configuration of an existing volume for an HA working environment.

### 1. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` and `svmName` values for the `workingEnvironmentId` and `svmName` path parameters.

### 2. Select the volume

Perform the workflow [Get volumes](#) and choose the `name` for the `volumeName` path parameter.

### 3. Modify the volume

HTTP method	Path
PUT	/occm/api/aws/ha/volumes/{workingEnvironmentId}/{svmName}/{volumeName}

### curl example

```
curl --location --request PUT
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/volumes/<WORKING_ENV_ID>/<SVM_NAME>/<VOLUME_NAME>' --header 'Content-Type: application/json'
--header 'x-agent-id: <AGENT_ID>' --header 'Authorization: Bearer <ACCESS_TOKEN>' --d @JSONinput
```

### Input

Path parameters:

- `<WORKING_ENV_ID>` (`workingEnvironmentId`)
- `<SVM_NAME>` (`svmName`)
- `<VOLUME_NAME>` (`volumeName`)

The JSON input example includes the minimum list of input parameters.

### JSON input example

```

{
  "exportPolicyInfo": {
    "policyType": "custom",
    "ips": [
      "172.31.0.0/16"
    ],
    "nfsVersion": [
      "nfs3"
    ]
  }
}

```

## Output

None

## Delete volume

You can delete an existing volume.

Choose the correct workflow depending on the type of Cloud Volumes ONTAP deployment:

- [Single Node](#)
- [HA pair](#)

### Delete volume for single node

You can use this workflow to delete a volume for a single node working environment.

#### 1. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` and `svmName` values of the working environment for the `workingEnvironmentId` and `svmName` path parameters.

#### 2. Select the volume

Perform the workflow [Get volumes](#) and choose the `name` of the required volume for the `volumeName` path parameter.

#### 3. Delete the volume

HTTP method	Path
DELETE	/occm/api/vsa/volumes/{workingEnvironmentId}/{svmName}/{volumeName}

### curl example



```
curl --location --request DELETE
'https://cloudmanager.cloud.netapp.com/occm/api/vsa/volumes/<WORKING_ENV_ID>/<SVM_NAME>/<VOLUME_NAME>' --header 'Content-Type: application/json'
--header 'x-agent-id: <AGENT_ID>' --header 'Authorization: Bearer
<ACCESS_TOKEN>'
```

## Input

Path parameters:

- <WORKING\_ENV\_ID> (workingEnvironmentId)
- <SVM\_NAME> (svmName)
- <VOLUME\_NAME> (volumeName)

## Output

None

## Delete volume for high availability pair

You can use this workflow to delete a volume for an HA working environment.

### 1. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` and `svmName` values of the working environment for the `workingEnvironmentId` and `svmName` path parameters.

### 2. Select the volume

Perform the workflow [Get volumes](#) and choose the name of the required volume for `volumeName` path parameter.

### 3. Delete the volume

HTTP method	Path
DELETE	/occm/api/aws/ha/volumes/{workingEnvironmentId}/{svmName}/{volumeName}

## curl example

```
curl --location --request DELETE
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/volumes/<WORKING_ENV_ID>/<SVM_NAME>/<VOLUME_NAME>' --header 'Content-Type: application/json'
--header 'x-agent-id: <AGENT_ID>' --header 'Authorization: Bearer
<ACCESS_TOKEN>'
```

## Input

Path parameters:

- <WORKING\_ENV\_ID> (workingEnvironmentId)

- <SVM\_NAME> (svmName)
- <VOLUME\_NAME> (volumeName)

## Output

None

## Create quote

You can create a quote for a new volume which returns a resource quote needed to satisfy the request. The resource quote contains aggregate information where the volume will be created and confirms if the space is available. This is a recommended step but is not mandatory.

Choose the correct workflow depending on the type of Cloud Volumes ONTAP deployment:

- [Single Node](#)
- [HA pair](#)

### Create quote for single node

You can use this workflow to retrieve quote details for a single node working environment.

#### 1. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` and `svmName` values of the working environment for the `workingEnvironmentId` and `svmName` parameters.

#### 2. Select the aggregate

Perform the workflow [Get aggregates](#) and choose the `name` value for the `name` parameter.

#### 3. Select the permutations configuration

Perform the workflow [Get permutations](#) and choose the `size` and `diskType` values for step 4.

#### 4. Generate the volume quote

HTTP method	Path
POST	/occm/api/vsa/quote

### curl example

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

## Input

The JSON input example includes the list of input parameters.

### JSON input example

```
{
  "workingEnvironmentId": "VsaWorkingEnvironment-5dZfyKS5",
  "svmName": "svm_ziv01we01",
  "aggregateName": "ziv01agg01",
  "name": "ziv1vol02",
  "size": {
    "size": "100",
    "unit": "GB"
  },
  "enableThinProvisioning": "true",
  "providerVolumeType": "gp2",
  "verifyNameUniqueness": "true"
}
```

## Output

The JSON output example includes an example of the quote details.

### JSON output example

```
{
  "numOfDisks": 0,
  "diskSize": {
    "size": 100.0,
    "unit": "GB"
  },
  "aggregateName": "ziv01agg01",
  "newAggregate": false,
  "autoVsaCapacityManagement": true
}
```

## Create quote for high availability pair

You can use this workflow to retrieve quote details for an HA working environment.

### 1. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` and `svmName` values of the working environment for the `workingEnvironmentId` and `svmName` parameters.

### 2. Select the aggregate

Perform the workflow [Get aggregates](#) and choose the `name` value for step 4.

### 3. Select the package

Perform the [Get packages](#) workflow and select the size and diskType values of the required package for diskSize and providerVolumeType values.

### 4. Generate the volume quote

HTTP method	Path
POST	/occm/api/aws/ha/quote

#### curl example

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/volumes/quote'
--header 'Content-Type: application/json' --header 'x-agent-id: <AGENT_ID>'
--header 'Authorization: Bearer <ACCESS_TOKEN>' --d @JSONinput
```

#### Input

The JSON input example includes the list of input parameters.

#### JSON input example

```
{
  "workingEnvironmentId": "VsaWorkingEnvironment-N6BPfglr",
  "svmName": "svm_ziv04we01ha",
  "aggregateName": "aggr1",
  "name": "ziv04we01haagg01vol01",
  "size": {
    "size": "100",
    "unit": "GB"
  },
  "enableThinProvisioning": "true",
  "providerVolumeType": "gp2",
  "verifyNameUniqueness": "true"
}
```

#### Output

The JSON output example includes an example of the quote details.

#### JSON output example

```
{
  "numOfDisks": 0,
  "diskSize": {
    "size": 100.0,
    "unit": "GB"
  },
  "aggregateName": "ziv04we01haagg01",
  "newAggregate": false,
  "autoVsaCapacityManagement": true
}
```

## Get iGroups

You can use this workflow to retrieve all the initiator groups (iGroups).

Choose the correct workflow depending on the type of Cloud Volumes ONTAP deployment:

- [Single Node](#)
- [HA pair](#)

### Get iGroups for single node

You can use this workflow to retrieve the iGroups for a single node system.

#### 1. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` and `svmName` values of the working environment for the `workingEnvironmentId` and `svmName` path parameters.

#### 2. Get the CIFS configurations

HTTP method	Path
GET	/occm/api/vsa/volumes/igroups/{workingEnvironmentId}/{svmName}

### curl example

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

### Input

- Path parameter `<WORKING_ENV_ID>`
- Path parameter `<SVM_NAME>`

## Output

The JSON output example includes a list of iGroups.

### JSON output example

```
[
  {
    "igroupName": "zivIgroup1",
    "osType": "linux",
    "portsetName": "",
    "igroupType": "iscsi",
    "initiators": [
      "iqn.1994-05.com.redhat:1d9ac633937c"
    ]
  },
  {
    "igroupName": "zivIgroup2",
    "osType": "linux",
    "portsetName": "",
    "igroupType": "iscsi",
    "initiators": [
      "iqn.1994-05.com.redhat:96de86825216"
    ]
  }
]
```

### Get iGroups for high availability pair

You can use this workflow to retrieve the iGroups for an HA working environment.

#### 1. Select the working environment

Perform the workflow [Get working environments](#) and choose the `publicId` and `svmName` values of the working environment for the `workingEnvironmentId` and `svmName` path parameters.

#### 2. Get the CIFS configurations

HTTP method	Path
GET	/occm/api/aws/ha/volumes/igroups/{workingEnvironmentId}/{svmName}

### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/volumes/igroups/<WORKING_ENV_ID>/<SVM_NAME>' --header 'x-agent-id: <AGENT_ID>' --header
'Authorization: Bearer <ACCESS_TOKEN>' --header 'Content-Type:
application/json'
```

## Input

- Path parameter <WORKING\_ENV\_ID>
- Path parameter <SVM\_NAME>

## Output

The JSON output example includes a list of iGroups.

### JSON output example

```
[
  {
    "igroupName": "zivIgroup1",
    "osType": "linux",
    "portsetName": "",
    "igroupType": "iscsi",
    "initiators": [
      "iqn.1994-05.com.redhat:1d9ac633937c"
    ]
  },
  {
    "igroupName": "zivIgroup2",
    "osType": "linux",
    "portsetName": "",
    "igroupType": "iscsi",
    "initiators": [
      "iqn.1994-05.com.redhat:96de86825216"
    ]
  }
]
```

## Metadata

### Get regions

This workflow retrieves the AWS regions in which an Cloud Volumes ONTAP working environment may be created.

Choose the correct workflow depending on the type of Cloud Volumes ONTAP deployment:

- [Single Node](#)
- [HA pair](#)

### Get regions for single node

You can use this workflow to retrieve the regions for a single node system.

## 1. Get the list of regions

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

### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/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 AWS regions.

### JSON output example

```
[
  {
    "name": "US East",
    "code": "us-east-1",
    "location": "N. Virginia",
    "s3Region": "US"
  },
  {
    "name": "US West",
    "code": "us-west-1",
    "location": "N. California",
    "s3Region": "us-west-1"
  },
  {
    "name": "EU",
    "code": "eu-central-1",
    "location": "Frankfurt",
    "s3Region": "eu-central-1"
  },
  {
    "name": "Asia Pacific",
    "code": "ap-south-1",
    "location": "Mumbai",
    "s3Region": "ap-south-1"
  },
]
```



## Get regions for high availability pair

You can use this workflow to retrieve the regions for an HA pair.

### 1. Get the list of regions

HTTP method	Path
GET	/occm/api/aws/ha/metadata/regions

#### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/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 AWS regions.

#### JSON output example

```
[
  {
    "name": "US East",
    "code": "us-east-1",
    "location": "N. Virginia",
    "s3Region": "US"
  },
  {
    "name": "US East",
    "code": "us-east-2",
    "location": "Ohio",
    "s3Region": "us-east-2"
  },
  {
    "name": "US West",
    "code": "us-west-1",
    "location": "N. California",
    "s3Region": "us-west-1"
  }
]
```

## Get permutations

You can use the permutations endpoint to retrieve the Cloud Volumes ONTAP configuration information.

Choose the correct workflow depending on the type of Cloud Volumes ONTAP deployment:

- [Single Node](#)
- [HA pair](#)

### Get permutations for single node

You can use this workflow to retrieve the configuration information for a single node working environment.

#### 1. Get the permutations

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

#### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/vsa/metadata/permutations'
--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
- version
- license
- instance\_type
- default\_instance\_type
- feature
- latest\_only
- ami

#### Output

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

#### JSON output example

```
[
  {
    "ontapVersion": "ONTAP-9.9.0X4.T1",
    "license": {
      "type": "cot-explore-paygo",
      "name": "Cloud Volumes ONTAP Explore",
      "description": "Suitable for smaller capacity applications.
Supports up to 2 TB of underlying AWS 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": "m5.xlarge",
    "region": {
      "name": "EU",
      "code": "eu-central-1",
      "location": "Frankfurt",
      "s3Region": "eu-central-1"
    },
    "defaultInstance": true,
    "features": ["ena", "kvm", "network-utilization"],
    "upgradeableFrom": ["9.8", "9.9.0"]
  }
]
```

## Get permutations for high availability pair

You can use this workflow to retrieve the configuration information for an HA working environment.

### 1. Get the permutations

HTTP method	Path
GET	/occm/api/aws/ha/metadata/permutations

### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/metadata/permutatio
ns?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
- version
- license
- instance\_type
- default\_instance\_type
- feature
- latest\_only
- ami

## Output

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

### JSON output example

```
[
  {
    "ontapVersion": "ONTAP-9.9.0X6.T1.ha",
    "license": {
      "type": "ha-cot-explore-paygo",
      "name": "Cloud Volumes ONTAP Explore",
      "description": "Suitable for smaller capacity applications. Supports up to 2 TB of underlying AWS 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": "m5.xlarge",
    "region": {
      "name": "EU",
      "code": "eu-central-1",
      "location": "Frankfurt",
      "s3Region": "eu-central-1"
    },
    "defaultInstance": true,
    "features": [
      "ena",
```

```

        "kvm",
        "network-utilization"
    ],
    "upgradeableFrom": [
        "9.8",
        "9.9.0"
    ]
},
{
    "ontapVersion": "ONTAP-9.9.0X6.T1.ha",
    "license": {
        "type": "ha-cot-explore-paygo",
        "name": "Cloud Volumes ONTAP Explore",
        "description": "Suitable for smaller capacity applications.
Supports up to 2 TB of underlying AWS 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": "m5.xlarge",
    "region": {
        "name": "EU",
        "code": "eu-west-1",
        "location": "Ireland",
        "s3Region": "eu-west-1"
    },
    "defaultInstance": true,
    "features": [
        "ena",
        "kvm",
        "network-utilization"
    ],
    "upgradeableFrom": [
        "9.8",
        "9.9.0"
    ]
}
]

```

## Get list of virtual private clouds

You can use this workflow to retrieve a list of the available virtual private clouds (VPCs).

Choose the correct workflow depending on the type of Cloud Volumes ONTAP deployment:

- [Single Node](#)
- [HA pair](#)

### Get VPCs for single node

You can use this workflow to retrieve the VPCs for a single node working environment.

#### 1. Select the region to use

Perform the workflow [Get regions](#) and choose the code value for the region query parameter.

#### 2. Get the VPCs

HTTP method	Path
GET	/occm/api/vsa/metadata/vpcs?region=<REGION>

### Curl example

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

### Input

Query parameters:

- <REGION> region

### Output

The JSON output example includes the list of virtual private clouds.

### JSON output example

```
[
  {
    "vpcId": "vpc-b16c90d4",
    "state": "available",
    "cidrBlock": "172.31.0.0/16",
    "tags": [
      {
        "key": "Name",
        "value": "VPC for VSA"
      },
    ],
  },
]
```

```

        {
            "key": "last",
            "value": "ioio"
        }
    ],
    "default": true,
    "subnets": [
        {
            "subnetId": "subnet-c1d99699",
            "cidr": "172.31.5.0/24",
            "subnetName": "subnet5",
            "availabilityZone": "us-east-1a",
            "availableIps": 247,
            "minimumRequiredIps": 8,
            "outpostArn": null
        },
        {
            "subnetId": "subnet-deebdbe3",
            "cidr": "172.31.6.0/24",
            "subnetName": "Proxy Subnet",
            "availabilityZone": "us-east-1e",
            "availableIps": 248,
            "minimumRequiredIps": 8,
            "outpostArn": null
        }
    ],
    "securityGroups": [
        {
            "securityGroupId": "xx-xxxa1ne9xxx67xcvf",
            "description": "NetApp OCCM Instance External Security
Group",
            "name": "hguyiuukOCCM1590415972561-OCCMSecurityGroup-
yryrytt"
        },
        {
            "securityGroupId": "xx-xxxa1ne9xxx67xcvf",
            "description": "Enable HTTP and NFS for Cloud Restore
Instance",
            "name": "Cloud-Restore-Instance-account-xxxxxx-
CloudRestoreInstanceSecurityGroup-sdweretttrrt"
        }
    ],
    "tenancy": "default"
},
{
    "vpcId": "vpc-fe5c1f98",

```

```

"state": "available",
"cidrBlock": "140.30.0.0/16",
"tags": [
  {
    "key": "Name",
    "value": "VPCWithNOS3"
  }
],
"default": false,
"subnets": [
  {
    "subnetId": "subnet-e84722d4",
    "cidr": "140.30.5.0/24",
    "subnetName": "subnet1",
    "availabilityZone": "us-east-1e",
    "availableIps": 250,
    "minimumRequiredIps": 8,
    "outpostArn": null
  }
],
"securityGroups": [
  {
    "securityGroupId": "xx-xxxa1ne9xxx67xcvf",
    "description": "ONTAP Cloud firewall rules for management
and data interface",
    "name": "xx-Version10-duahpJbS-
NetAppExternalSecurityGroup-rtyunht"
  },
  {
    "securityGroupId": "xx-xxxa1ne9xxx67xcvf",
    "description": "default VPC security group",
    "name": "default"
  }
],
"tenancy": "default"
}
]

```

## Get VPCs for high availability pair

You can use this workflow to retrieve the VPCs for an HA working environment.

### 1. Select the region to use

Perform the workflow [Get regions](#) and choose the code value for the region query parameter.



## 2. Get the VPCs

HTTP method	Path
GET	/occm/api/aws/ha/metadata/vpcs?region=<REGION>

### Curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/metadata/vpcs?region=<REGION>' --header 'Content-Type: application/json' --header 'x-agent-id: <AGENT_ID>' --header 'Authorization: Bearer <ACCESS_TOKEN>'
```

### Input

Query parameters:

- <REGION> region

### Output

The JSON output example includes the list of virtual private clouds.

### JSON output example

```
[
  {
    "vpcId": "vpc-b16c90d4",
    "state": "available",
    "cidrBlock": "172.31.0.0/16",
    "tags": [
      {
        "key": "Name",
        "value": "VPC for VSA"
      },
      {
        "key": "last",
        "value": "ioio"
      }
    ],
    "default": true,
    "subnets": [
      {
        "subnetId": "subnet-c1d99699",
        "cidr": "172.31.5.0/24",
        "subnetName": "subnet5",
        "availabilityZone": "us-east-1a",
        "availableIps": 247,
        "minimumRequiredIps": 8,
        "outpostArn": null
      }
    ]
  }
]
```

```

    },
    {
      "subnetId": "subnet-deebdbe3",
      "cidr": "172.31.6.0/24",
      "subnetName": "Proxy Subnet",
      "availabilityZone": "us-east-1e",
      "availableIps": 248,
      "minimumRequiredIps": 8,
      "outpostArn": null
    }
  ],
  "securityGroups": [
    {
      "securityGroupId": "xx-xxxa1ne9xxx67xcvf",
      "description": "NetApp OCCM Instance External Security
Group",
      "name": "lilush2000OCCM1590415972561-OCCMSecurityGroup-
JDB72N6W90UG"
    },
    {
      "securityGroupId": "xx-xxxa1ne9xxx67xcvf",
      "description": "Enable HTTP and NFS for Cloud Restore
Instance",
      "name": "Cloud-Restore-Instance-account-xxxxxx-
CloudRestoreInstanceSecurityGroup-sdweretttrrt"
    }
  ],
  "tenancy": "default"
},
{
  "vpcId": "vpc-fe5c1f98",
  "state": "available",
  "cidrBlock": "140.30.0.0/16",
  "tags": [
    {
      "key": "Name",
      "value": "VPCWithNOS3"
    }
  ],
  "default": false,
  "subnets": [
    {
      "subnetId": "subnet-e84722d4",
      "cidr": "140.30.5.0/24",
      "subnetName": "subnet1",
      "availabilityZone": "us-east-1e",

```

```

        "availableIps": 250,
        "minimumRequiredIps": 8,
        "outpostArn": null
    },
    ],
    "securityGroups": [
        {
            "securityGroupId": "xx-xxxa1ne9xxx67xcvf",
            "description": "ONTAP Cloud firewall rules for management
and data interface",
            "name": "XX-Version10-yuiloJbS-
NetAppExternalSecurityGroup-TYUOPR"
        },
        {
            "securityGroupId": "xx-xxxa1ne9xxx67xcvf",
            "description": "default VPC security group",
            "name": "default"
        }
    ],
    "tenancy": "default"
}
]

```

## Get EBS volume types

You can use this workflow to retrieve the supported EBS volume types.

Choose the correct workflow depending on the type of Cloud Volumes ONTAP deployment:

- [Single Node](#)
- [HA pair](#)

### Get EBS volume types for single node

You can use this workflow to get the EBS volume types for a single node working environment.

#### 1. Get the EBS volume types

HTTP method	Path
GET	/occm/api/vsa/metadata/ebs-volume-types

#### curl example

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

## Input

None

## Output

The JSON output example includes the list of EBS volume types.

## JSON output example

```
[
  {
    "description": "",
    "size": {
      "size": 100.0,
      "unit": "GB"
    },
    "supportedVolumeTypes": [
      "standard",
      "io1",
      "io2",
      "gp2"
    ],
    "supportedOccmLicenses": [
      "Explore (hourly)",
      "Standard (hourly)",
      "Standard (BYOL)",
      "Cloud Volumes ONTAP Explore",
      "Cloud Volumes ONTAP Standard",
      "Cloud Volumes ONTAP Premium",
      "Cloud Volumes ONTAP BYOL",
      "Cloud Volumes ONTAP Explore",
      "Cloud Volumes ONTAP Standard",
      "Cloud Volumes ONTAP Premium",
      "Cloud Volumes ONTAP BYOL"
    ],
    "isDefault": false
  },
  {
    "description": "",
    "size": {
      "size": 500.0,
      "unit": "GB"
    }
  }
]
```

```

    },
    "supportedVolumeTypes": [
      "standard",
      "io1",
      "io2",
      "gp2",
      "st1"
    ],
    "supportedOccmLicenses": [
      "Explore (hourly)",
      "Standard (hourly)",
      "Standard (BYOL)",
      "Cloud Volumes ONTAP Explore",
      "Cloud Volumes ONTAP Standard",
      "Cloud Volumes ONTAP Premium",
      "Cloud Volumes ONTAP BYOL",
      "Cloud Volumes ONTAP Explore",
      "Cloud Volumes ONTAP Standard",
      "Cloud Volumes ONTAP Premium",
      "Cloud Volumes ONTAP BYOL"
    ],
    "isDefault": false
  }
}

```

## Get EBS volume types for high availability pair

You can use this workflow to get the EBS volume types for an HA working environment.

### 1. Get the EBS volume types

HTTP method	Path
GET	/occm/api/aws/ha/metadata/ebs-volume-types

### curl example

```

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

```

### Input

None

### Output

The JSON output example includes the list of EBS volume types.

## JSON output example

```
[
  {
    "description": "",
    "size": {
      "size": 100.0,
      "unit": "GB"
    },
    "supportedVolumeTypes": [
      "standard",
      "io1",
      "io2",
      "gp2",
      "gp3"
    ],
    "supportedOccmLicenses": [
      "Explore (hourly)",
      "Standard (hourly)",
      "Standard (BYOL)",
      "Cloud Volumes ONTAP Explore",
      "Cloud Volumes ONTAP Standard",
      "Cloud Volumes ONTAP Premium",
      "Cloud Volumes ONTAP BYOL",
      "Cloud Volumes ONTAP Explore",
      "Cloud Volumes ONTAP Standard",
      "Cloud Volumes ONTAP Premium",
      "Cloud Volumes ONTAP BYOL",
      "Cloud Volumes ONTAP Explore",
      "Cloud Volumes ONTAP Standard",
      "Cloud Volumes ONTAP Premium",
      "Cloud Volumes ONTAP BYOL",
      "Cloud Volumes ONTAP Explore",
      "Cloud Volumes ONTAP Standard",
      "Cloud Volumes ONTAP Premium",
      "Cloud Volumes ONTAP BYOL",
      "Cloud Volumes ONTAP Explore",
      "Cloud Volumes ONTAP Standard",
      "Cloud Volumes ONTAP Premium",
      "Cloud Volumes ONTAP BYOL"
    ],
    "isDefault": false
  },
]
```

```

{
  "description": "",
  "size": {
    "size": 500.0,
    "unit": "GB"
  },
  "supportedVolumeTypes": [
    "standard",
    "io1",
    "io2",
    "gp2",
    "gp3",
    "st1"
  ],
  "supportedOccmLicenses": [
    "Explore (hourly)",
    "Standard (hourly)",
    "Standard (BYOL)",
    "Cloud Volumes ONTAP Explore",
    "Cloud Volumes ONTAP Standard",
    "Cloud Volumes ONTAP Premium",
    "Cloud Volumes ONTAP BYOL",
    "Cloud Volumes ONTAP Explore",
    "Cloud Volumes ONTAP Standard",
    "Cloud Volumes ONTAP Premium",
    "Cloud Volumes ONTAP BYOL",
    "Cloud Volumes ONTAP Explore",
    "Cloud Volumes ONTAP Standard",
    "Cloud Volumes ONTAP Premium",
    "Cloud Volumes ONTAP BYOL",
    "Cloud Volumes ONTAP Explore",
    "Cloud Volumes ONTAP Standard",
    "Cloud Volumes ONTAP Premium",
    "Cloud Volumes ONTAP BYOL",
    "Cloud Volumes ONTAP Explore",
    "Cloud Volumes ONTAP Standard",
    "Cloud Volumes ONTAP Premium",
    "Cloud Volumes ONTAP BYOL"
  ],
  "isDefault": false
}
]

```

## Get packages

You can use the packages endpoint to retrieve the Cloud Volumes ONTAP packages configuration information.

Choose the correct workflow depending on the type of Cloud Volumes ONTAP deployment:

- [Single Node](#)
- [HA pair](#)

### Get packages for single node

You can use this workflow to retrieve the packages information for a single node system.

#### 1. Get the packages

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

#### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/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 Cloud Volumes ONTAP packages.

#### JSON output example



```
[
  {
    "name": "aws_ha_poc",
    "displayName": "POC and small workloads",
    "description": "No description yet",
    "licenseType": "ha-cot-explore-paygo",
    "instanceTypeMapping": [
      {
        "region": "default",
        "instanceType": "m5.xlarge"
      }
    ],
    "diskType": "gp2",
    "diskSize": {
      "size": 100.0,
      "unit": "GB"
    },
    "capacityTier": null,
    "instanceTenancy": "default",
    "writingSpeedState": "NORMAL"
  },
  {
    "name": "aws_ha_standard",
    "displayName": "Database and application data production
workloads",
    "description": "No description yet",
    "licenseType": "ha-cot-standard-paygo",
    "instanceTypeMapping": [
      {
        "region": "default",
        "instanceType": "m5.2xlarge"
      }
    ],
    "diskType": "gp2",
    "diskSize": {
      "size": 100.0,
      "unit": "GB"
    },
    "capacityTier": null,
    "instanceTenancy": "default",
    "writingSpeedState": "NORMAL"
  }
]
```

## Get packages for high availability pair

You can use this workflow to retrieve the packages information for an HA working environment.

### 1. Get the packages

HTTP method	Path
GET	/occm/api/aws/ha/metadata/packages

### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/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 Cloud Volumes ONTAP packages.

### JSON output example

```
[
  {
    "name": "aws_ha_poc",
    "displayName": "POC and small workloads",
    "description": "No description yet",
    "licenseType": "ha-cot-explore-paygo",
    "instanceTypeMapping": [
      {
        "region": "default",
        "instanceType": "m5.xlarge"
      }
    ],
    "diskType": "gp2",
    "diskSize": {
      "size": 100.0,
      "unit": "GB"
    },
    "capacityTier": null,
    "instanceTenancy": "default",
    "writingSpeedState": "NORMAL"
  },
  {
    "name": "aws_ha_standard",
    "displayName": "Database and application data production
workloads",
    "description": "No description yet",
    "licenseType": "ha-cot-standard-paygo",
    "instanceTypeMapping": [
      {
        "region": "default",
        "instanceType": "m5.2xlarge"
      }
    ],
    "diskType": "gp2",
    "diskSize": {
      "size": 100.0,
      "unit": "GB"
    },
    "capacityTier": null,
    "instanceTenancy": "default",
    "writingSpeedState": "NORMAL"
  }
]
```

## Get route tables

You can use the route tables endpoint to retrieve the route tables labels for each VPC and their subnet association information.



We use the Get route tables workflow only for the high availability pair.

### 1. Get the region

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

### 2. Get the VPC

Perform the workflow [Get VPCs](#) and choose the `vpcId` value of the required VPC for the `vpcId` query parameter.

### 3. Get the route tables

HTTP method	Path
GET	/occm/api/aws/ha/metadata/route-tables

### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/metadata/route-
tables?region=<REGION>&vpcId=<VPC_ID>' --header 'x-agent-id: <AGENT_ID>'
--header 'Authorization: Bearer <ACCESS_TOKEN>' --header 'Content-Type:
application/json'
```

### Input

Query parameters:

- `<REGION>` region
- `<VPCID>` vpcId

Optional parameters:

- `roleArn`: String
- `cloudProviderAccountId`: String

### Output

The output includes an array of route tables.

### JSON output example

```
[
  {
```

```

    "id": "rtb-3338784b",
    "main": false,
    "subnets": [],
    "tags": [
      {
        "key": "Name",
        "value": "route3"
      }
    ]
  },
  {
    "id": "rtb-e13a7a99",
    "main": false,
    "subnets": [],
    "tags": [
      {
        "key": "Name",
        "value": "route2"
      }
    ]
  },
  {
    "id": "rtb-7a3b7b02",
    "main": false,
    "subnets": [],
    "tags": [
      {
        "key": "Name",
        "value": "route4"
      }
    ]
  },
  {
    "id": "rtb-0a41155f5c924872e",
    "main": false,
    "subnets": [],
    "tags": [
      {
        "key": "Name",
        "value": "long"
      }
    ]
  },
  {
    "id": "rtb-d0e847b6",
    "main": false,

```

```

    "subnets": [],
    "tags": [
      {
        "key": "Name",
        "value": "IC Route"
      }
    ]
  },
  {
    "id": "rtb-3333734b",
    "main": false,
    "subnets": [],
    "tags": [
      {
        "key": "Name",
        "value": "route1"
      }
    ]
  },
  {
    "id": "rtb-02a45467",
    "main": true,
    "subnets": [],
    "tags": [
      {
        "key": "Name",
        "value": "main"
      }
    ]
  }
]

```

## Get key pairs

You can use the key pairs endpoint to retrieve the AWS key pairs for specific regions.

Choose the correct workflow depending on the type of Cloud Volumes ONTAP deployment:

- [Single Node](#)
- [HA pair](#)

### Get key pairs for single node

You can use this workflow to retrieve the key pairs for a single node working environment.

## 1. Get the region

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

## 2. Get the key pairs

HTTP method	Path
GET	/occm/api/vsa/metadata/key-pairs

### curl example

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

### Input

Query parameter:

- `<REGION>` region

Optional parameters for filter:

- `roleArn`: String
- `cloudProviderAccountId`: String

### Output

The output shows the AWS user key pairs for a specific region.

### JSON output example

```
[
  "Developers_Virginia",
  "gfcqa",
  "kubernetes-net6vbp8sd",
  "kubernetes-netpn77b32",
  "occm_qa"
]
```

## Get key pairs for high availability pair

You can use this workflow to retrieve the key pairs for an HA working environment.

### 1. Get the region

Perform the workflow [Get regions](#) and choose the code value of the required region for the `region` query

parameter.



Ensure that you choose the path value for the HA pair while performing the Get Regions workflow.

## 2. Get the key pairs

HTTP method	Path
GET	/occm/api/aws/ha/metadata/key-pairs

### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/aws/ha/metadata/key-
pairs?region=<REGION>' --header 'x-agent-id: <AGENT_ID>' --header
'Authorization: Bearer <ACCESS_TOKEN>' --header 'Content-Type:
application/json'
```

### Input

Query parameter:

- <REGION> region

Optional parameters for filter:

- roleArn: String
- cloudProviderAccountId: String

### Output

The output shows the AWS user key pairs for a specific region.

### JSON output example

```
[
  "Developers_Virginia",
  "gfcqa",
  "kubernetes-net6vbp8sd",
  "kubernetes-netpn77b32",
  "occm_qa"
]
```

## Miscellaneous

### Create AWS cloud provider account

You can use this workflow to create an AWS cloud provider account.



## Before you begin

You must have AWS credentials.

### 1. Get the SaaS marketplace account

Perform the workflow [Get SaaS marketplace account](#) and choose the `id` value for the required subscription for `subscriptionId` parameter.

### 2. Create the account

HTTP method	Path
POST	/occm/api/accounts/aws

### curl example

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/accounts/aws' --header 'x-agent-id: <AGENT_ID>' --header 'Authorization: Bearer <TOKEN>' --header
'Content-Type: application/json' --d JSONinput
```

### Input

The JSON input example includes the list of parameters.

### JSON input example

```
{
  "accountName": "zivAccountTest2",
  "providerKeys": {
    "awsAccessKeys": {
      "accessKey": "accesskeystring",
      "secretKey": "secretkeystring"
    }
  },
  "subscriptionId": "subscriptionIDgoeshere"
}
```

### Output

The JSON output provides an example of the cloud provider details.

### JSON output example

```
{
  "publicId": "CloudProviderAccount-LCwgVOy7",
  "accountName": "zivAccountTest2",
  "accountType": "AWS_KEYS",
  "accountId": "accountIDshownhere",
  "accessKey": " accesskeyshownhere",
  "assumeRole": null,
  "occmRole": null,
  "vsaList": [],
  "subscriptionId": "subscriptionIDshownhere"
}
```

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