# Azure workflows

## Cloud Manager Automation

NetApp
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# Azure workflows

## Before you begin

There are several workflows you can use with the Azure public cloud.

Review the Get started section before using any of the Cloud Manager REST API workflows.

### Workflow categories

The Azure workflows are organized into the following categories:

- Working environments
- Aggregates
- Volumes
- Metadata
- Miscellaneous

See Understanding the workflow processes for more information on these categories.

### Azure credentials

Before beginning to use the Azure workflows, you will need to create an Azure account through the Microsoft Azure portal and obtain the Azure credentials and the subscription ID.

### 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 Azure cloud provider account that you deployed the Connector in to your list of available accounts. Your Azure account needs to have the right permissions in order to create a Connector.

Review Learn about Azure Connectors to know how to create and deploy an Azure Connector.

# Working environments

### Create a working environment with PAYGO

You can use this workflow to create a new Azure Cloud Volumes ONTAP working environment using pay-as-you-go (PAYGO) subscription.

**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 choose to create a volume using either NFS, CIFS, or iSCSI protocol.

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

- Single Node
- HA pair

### Create working environment for single node

You can use this workflow to create single node working environment with PAYGO.

#### 1. Select the region

Perform the workflow Get regions and choose the `name` value of the required region for the `region` parameter in step 11.

#### 2. Select the workspace

Perform the workflow Get tenants and choose the `workspacePublicId` value for the `tenantId` parameter in step 11.

#### 3. Select the VNets

Perform the workflow Get VNets and do the following:

- Choose the `id` value of the desired vnet from the `virtualNetworks` for the `vnetId` parameter in step 11.
- Choose the `cidr` value of the desired cidr from the `virtualNetworks` for the `cidr` parameter in step 11.
- Choose the `id` of the desired subnet from the `virtualNetworks`→ `cidrs`→ `subnets` for the `subnetId` parameter in step 11.
- Choose the `id` of the desired security group from the `securityGroups` field for the `securityGroupId` parameter in step 11.

#### 4. Select the Azure availability zone

Perform the workflow Get Azure Availability Zones and choose the number from `zones` for the `availabilityZone` parameter in step 11.

#### 5. Get the Azure packages configuration

Perform the Get Azure Packages workflow and choose the `name` of the desired package item for the `packageName` parameter.

#### 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 11.

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

#### 8. Select the Azure cloud provider accounts

Perform the Create Azure cloud provider accounts workflow and choose the `publicId` of the desired cloud provider account item from the `azureAccounts` for the `cloudProviderAccount` parameter.

#### 9. Select the Azure permutations

Perform the Get Azure Permutations workflow and pick the desired permutation:

- Choose the `ontapVersion` of the desired permutation for the `ontapVersion` field inside the `vsaMetadata` parameter in step 11.
- Choose the `type` of the desired license item from the `license` parameter for the `licenseType` field inside the `vsaMetadata` parameter in step 11.
- Choose the `instanceType` of the desired permutation for the `instanceType` field inside the `vsaMetadata` parameter in step 11.

#### 10. Select the Azure storage account types

Perform the Get Azure Storage Account Types workflow and pick the desired storage type.

- Choose the `diskType` of the desired storage type item for the `storageType` parameter in step 11.
- Choose the `size` of the desired disk size from the `sizes` → `size` field for the `size` field inside the `diskSize` parameter in step 11.
- Choose the `unit` of the desired disk size from the `sizes` → `size` field for the `unit` field inside the `diskSize` parameter in step 11.

#### 11. Create the working environment

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

**curl example**

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/azure/vsa/working-
environments' --header 'x-agent-id: <AGENT_ID>' //<1> --header
'Authorization: Bearer <ACCESS_TOKEN>' //<2> ---header 'Content-Type:
application/json' --d @JSONinput
```

(1) Replace <AGENT_ID> with your agent ID.
(2) Replace <ACCESS_TOKEN> with your obtained access bearer token.

**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":"Azure123",
     "tenantId":"tenantID",
     "region":"westeurope",
     "packageName":"azure_poc",
     "dataEncryptionType":"AZURE",
     "vsaMetadata":{
         "ontapVersion":"ONTAP-9.10.0.T1.azure",
         "licenseType":"azure-cot-explore-paygo",
         "instanceType":"Standard_DS3_v2"
    },
     "writingSpeedState":"NORMAL",
     "subnetId":"/subscriptions/x000xx00-0x00-0000-
000x/resourceGroups/occm_group_westeurope/providers/Microsoft.Network/virt
ualNetworks/Vnet1/subnets/Subnet2",
     "svmPassword":"Netapp123",
     "vnetId":"/subscriptions/x000xx00-0x00-0000-
000x/resourceGroups/occm_group_westeurope/providers/Microsoft.Network/virt
ualNetworks/Vnet1",
     "cidr":"10.0.0.0/16",
     "ontapEncryptionParameters":null,
     "securityGroupId":"/subscriptions/x000xx00-0x00-0000-
000x/resourceGroups/Cloud-Compliance-1nThiJkG05ZgcyucIJvCSbtBdpVnK-
2020894989899/providers/Microsoft.Network/networkSecurityGroups/Cloud-
Compliance-1nTxxxtkG05ZgcxxxxxxXXXXXX-2000000000000000",
     "skipSnapshots":false,
     "diskSize":{
         "size":500,
         "unit":"GB",
         "_identifier":"500 GB"
    },
     "storageType":"Premium_LRS",
     "azureTags":[],
     "subscriptionId":"x000xx00-0x00-0000-000x",
     "cloudProviderAccount":"ManagedServiceIdentity",
     "backupVolumesToCbs":false,
     "enableCompliance":false,
     "enableMonitoring":false,
     "availabilityZone":1,
     "allowDeployInExistingRg":true,
     "resourceGroup":"occm_group_westeurope"
}
```

### Output

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

### JSON output example


```
{
    "publicId": "VsaWorkingEnvironment-uFPaNkrv",
    "name": "Azure123",
    "tenantId": "tenantID",
    "svmName": "svm_Azure123",
    "creatorUserEmail": "user_mail",
    "status": null,
    "providerProperties": null,
    "reservedSize": null,
    "clusterProperties": null,
    "ontapClusterProperties": null,
    "cloudProviderName": "Azure",
    "snapshotPolicies": null,
    "actionsRequired": null,
    "activeActions": null,
    "replicationProperties": null,
    "schedules": null,
    "svms": null,
    "workingEnvironmentType": "VSA",
    "supportRegistrationProperties": null,
    "supportRegistrationInformation": null,
    "capacityFeatures": null,
    "encryptionProperties": null,
    "supportedFeatures": null,
    "isHA": false,
    "haProperties": 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 working environment with PAYGO.

#### 1. Select the region

Perform the workflow Get regions and choose the `name` value of the required region for the `region` parameter in step 11.

#### 2. Select the workspace

Perform the workflow Get tenants and choose the `workspacePublicId` value for the `tenantId` parameter in step 11.

#### 3. Select the VNets

Perform the workflow Get VNets and do the following:

- Choose the `id` value of the desired vnet from the `virtualNetworks` for the `vnetId` parameter in step 11.
- Choose the `cidr` value of the desired cidr from the `virtualNetworks` for the `cidr` parameter in step 11.
- Choose the `id` of the desired subnet from the `virtualNetworks`→ `cidrs`→ `subnets` for the `subnetId` parameter in step 11.
- Choose the `id` of the desired security group from the `securityGroups` field for the `securityGroupId` parameter in step 11.

#### 4. Select the Azure availability zone

Perform the workflow Get Azure Availability Zones and choose the number from `zones` for the `availabilityZone` parameter in step 11.

#### 5. Get Azure packages configuration

Perform the Get Azure Packages workflow and choose the `name` of the desired package item for the `packageName` parameter.

#### 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 11.

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

#### 8. Select Azure cloud provider accounts

Perform the Create Azure Cloud Provider Accounts workflow and choose the `publicId` of the desired cloud provider account item from the `azureAccounts` for the `cloudProviderAccount` parameter.

#### 9. Select Azure permutations

Perform the Get Azure Permutations workflow and pick the desired permutation:

- Choose the `ontapVersion` of the desired permutation for the `ontapVersion` field inside the `vsaMetadata` parameter in step 11.

- Choose the `type` of the desired license item from the `license` parameter for the `licenseType` field inside the `vsaMetadata` parameter in step 11.
- Choose the `instanceType` of the desired permutation for the `instanceType` field inside the `vsaMetadata` parameter in step 11.

#### 10. Select Azure storage account types

Perform the Get Azure Storage Account Types workflow and pick the desired storage type.

- Choose the `diskType` of the desired storage type item for the `storageType` parameter in step 11.
- Choose the `size` of the desired disk size from the `sizes` → `size` field for the `size` field inside the `diskSize` parameter in step 11.
- Choose the `unit` of the desired disk size from the `sizes` → `size` field for the `unit` field inside the `diskSize` parameter in step 11.

#### 11. Create the working environment

| HTTP method | Path |
|---|---|
| POST | /occm/api/azure/ha/working-environments |

**curl example**

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/azure/ha/working-
environments' --header 'x-agent-id: <AGENT_ID>' //<1> --header
'Authorization: Bearer <ACCESS_TOKEN>' //<2> ---header 'Content-Type:
application/json' --d @JSONinput
```

(1) Replace <AGENT_ID> with your agent ID.
(2) Replace <ACCESS_TOKEN> with your obtained access bearer token.

**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":"ranukazure12",
   "volume":{
      "exportPolicyInfo":{
         "policyType":"custom",
         "ips":[
            "10.0.0.0/16"
```

```
            ],
            "nfsVersion":[
               "nfs3",
               "nfs4"
            ]
         },
         "snapshotPolicyName":"default",
         "name":"ranukvol12",
         "enableThinProvisioning":true,
         "enableDeduplication":true,
         "enableCompression":true,
         "size":{
            "size":100,
            "unit":"GB"
         },
         "tieringPolicy":"auto"
      },
      "tenantId":"tenantIDgoeshere",
      "region":"westeurope",
      "packageName":"azure_ha_standard",
      "dataEncryptionType":"AZURE",
      "capacityTier":"Blob",
      "vsaMetadata":{
         "ontapVersion":"ONTAP-9.10.1X7.T1.azureha",
         "licenseType":"azure-ha-cot-standard-paygo",
         "instanceType":"Standard_DS4_v2"
      },
      "writingSpeedState":"NORMAL",
      "subnetId":"/subscriptions/x000xx00-0x00-0000-000x
/resourceGroups/occm_group_westeurope/providers/Microsoft.Network/virtualN
etworks/Vnet1/subnets/Subnet2",
      "svmPassword":"password",
      "vnetId":"/subscriptions/x000xx00-0x00-0000-000x/resourceGroups
/occm_group_westeurope/providers/Microsoft.Network/virtualNetworks/Vnet1",
      "cidr":"10.0.0.0/16",
      "ontapEncryptionParameters":null,
      "skipSnapshots":false,
      "diskSize":{
         "size":1,
         "unit":"TB",
         "_identifier":"1 TB"
      },
      "storageType":"Premium_LRS",
      "azureTags":[],
      "subscriptionId":"x000xx00-0x00-0000-000x",
      "cloudProviderAccount":"ManagedServiceIdentity",
```

```
    "backupVolumesToCbs":true,
    "enableCompliance":true,
    "enableMonitoring":true,
    "availabilityZone":null,
    "resourceGroup":"ranukazure12-rg"
}
```

### Output

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

### JSON output example

```
{
    "publicId":"VsaWorkingEnvironment-1m76JaRt",
    "name":"ranukazure12",
    "tenantId":"tenantID",
    "svmName":"svm_ranukazure12",
    "creatorUserEmail":"user_email",
    "status":null,
    "providerProperties":null,
    "reservedSize":null,
    "clusterProperties":null,
    "ontapClusterProperties":null,
    "cloudProviderName":"Azure",
    "snapshotPolicies":null,
    "actionsRequired":null,
    "activeActions":null,
    "replicationProperties":null,
    "schedules":null,
    "svms":null,
    "workingEnvironmentType":"VSA",
    "supportRegistrationProperties":null,
    "supportRegistrationInformation":null,
    "capacityFeatures":null,
    "encryptionProperties":null,
    "supportedFeatures":null,
    "isHA":true,
    "haProperties":null,
    "fpolicyProperties":null,
    "saasProperties":null,
    "cbsProperties":null,
    "complianceProperties":null,
    "monitoringProperties":null,
    "licensesInformation":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 more volumes after creating the working environment. You can choose to create a volume using either NFS, CIFS, or iSCSI protocol.

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

- Single Node
- HA pair

### Create working environment for single node

You can use this workflow to create single node working environment with BYOL licensing.

#### 1. Select the region

Perform the workflow Get regions and choose the `name` value of the required region for the `region` parameter in step 10.

#### 2. Select the workspace

Perform the workflow Get tenants and choose the `workspacePublicId` value for the `tenantId` parameter in step 10.

#### 3. Select the VNets

Perform the workflow Get VNets and do the following:

- Choose the `id` value of the desired vnet from the `virtualNetworks` for the `vnetId` parameter in step 10.
- Choose the `cidr` value of the desired cidr from the `virtualNetworks` for the `cidr` parameter in step 10.
- Choose the `id` of the desired subnet from the `virtualNetworks`→ `cidrs`→ `subnets` for the `subnetId` parameter in step 10.
- Choose the `id` of the desired security group from the `securityGroups` field for the `securityGroupId` parameter in step 10.

#### 4. Select the Azure availability zone

Perform the workflow Get Availability Zones and choose the number from `zones` for the `availabilityZone` parameter in step 10.

#### 5. Select Azure packages configuration

Perform the Get Azure Packages workflow and choose the `name` of the desired package item for the `packageName` parameter.

#### 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 10.

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

#### 7. Select the Azure cloud provider accounts

Perform the Get Azure Cloud Provider Accounts workflow and choose the `publicId` of the desired cloud provider account item from the `azureAccounts` for the `cloudProviderAccount` parameter.

#### 8. Select the Azure permutations

Perform the Get Azure Permutations workflow and pick the desired permutation:

- Choose the `ontapVersion` of the desired permutation for the `ontapVersion` field inside the `vsaMetadata` parameter in step 10.
- Choose the `type` of the desired license item from the `license` parameter for the `licenseType` field inside the `vsaMetadata` parameter in step 10.
- Choose the `instanceType` of the desired permutation for the `instanceType` field inside the `vsaMetadata` parameter in step 10.

You will also need to include the `serialNumber` value in the REST API call.
=== 9. Select the Azure storage account types

Perform the Get Azure Storage Account Types workflow and pick the desired storage type.

- Choose the `diskType` of the desired storage type item for the `storageType` parameter in step 10.
- Choose the `size` of the desired disk size from the `sizes` → `size` field for the `size` field inside the `diskSize` parameter in step 10.
- Choose the `unit` of the desired disk size from the `sizes` → `size` field for the `unit` field inside the `diskSize` parameter in step 10.

#### 10. Create the working environment

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

**curl example**

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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 `serialNumber` is required.

**JSON input example**

```
{
  "name": "Azure123",
  "tenantId": "tenantID",
  "region": "eastus2",
  "packageName": "azure_custom",
  "dataEncryptionType": "AZURE",
  "vsaMetadata": {
    "ontapVersion": "ONTAP-9.9.0X5.T1.azure",
    "licenseType": "azure-cot-premium-byol",
    "instanceType": "Standard_DS3_v2"
  },
  "nssAccount": "x0x0x000-0000-000x-00xx-x0000cx0000xx",
  "subnetId": "/subscriptions/x000xx00-0x00-0000-
000x/resourceGroups/occm_group_eastus2/providers/Microsoft.Network/virtual
Networks/Vnet1/subnets/ProxySubnet",
  "svmPassword": "password",
  "vnetId": "/subscriptions/x000xx00-0x00-0000-
000x/resourceGroups/occm_group_eastus2/providers/Microsoft.Network/virtual
Networks/Vnet1",
  "cidr": "10.0.0.0/16",
  "diskSize": {
    "size": 1,
    "unit": "TB"
  },
  "storageType": "Premium_LRS",
  "resourceGroup": "Azure000-xx",
  "serialNumber": "000001100000000000001",
  "subscriptionId": "x000xx00-0x00-0000-000x",
  "cloudProviderAccount": "ManagedServiceIdentity",
  "availabilityZone": 2
}
```

### Output

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

### JSON output example


```
{
    "publicId": "VsaWorkingEnvironment-uFPaNkrv",
    "name": "Azure123",
    "tenantId": "tenantID",
    "svmName": "svm_Azure123",
    "creatorUserEmail": "user_mail",
    "status": null,
    "providerProperties": null,
    "reservedSize": null,
    "clusterProperties": null,
    "ontapClusterProperties": null,
    "cloudProviderName": "Azure",
    "snapshotPolicies": null,
    "actionsRequired": null,
    "activeActions": null,
    "replicationProperties": null,
    "schedules": null,
    "svms": null,
    "workingEnvironmentType": "VSA",
    "supportRegistrationProperties": null,
    "supportRegistrationInformation": null,
    "capacityFeatures": null,
    "encryptionProperties": null,
    "supportedFeatures": null,
    "isHA": false,
    "haProperties": null,
    "k8sProperties": null,
    "fpolicyProperties": null,
    "saasProperties": null,
    "cbsProperties": null,
    "compliancesProperties": null,
    "monitoringProperties": null
}
```


### Create working environment for high availability pair

You can use this workflow to create an HA working environment with BYOL licensing.

#### 1. Select the region

Perform the workflow Get regions and choose the `name` value of the required region for the `region` parameter in step 10.

#### 2. Select the workspace

Perform the workflow Get tenants and choose the `workspacePublicId` value for the `tenantId` parameter in step 10.

#### 3. Select the VNets

Perform the workflow Get VNets and do the following:

- Choose the `id` value of the desired vnet from the `virtualNetworks` for the `vnetId` parameter in step 10.
- Choose the `cidr` value of the desired cidr from the `virtualNetworks` for the `cidr` parameter in step 10.
- Choose the `id` of the desired subnet from the `virtualNetworks→ cidrs→ subnets` for the `subnetId` parameter in step 10.
- Choose the `id` of the desired security group from the `securityGroups` field for the `securityGroupId` parameter in step 10.

#### 4. Select the Azure availability zone

Perform the workflow Get Availability Zones and choose the number from `zones` for the `availabilityZone` parameter in step 10.

#### 5. Select Azure packages configuration

Perform the Get Azure Packages workflow and choose the `name` of the desired package item for the `packageName` parameter.

#### 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 10.

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

#### 7. Select Azure cloud provider accounts

Perform the Get Azure Cloud Provider Accounts workflow and choose the `publicId` of the desired cloud provider account item from the `azureAccounts` for the `cloudProviderAccount` parameter.

#### 8. Select the Azure permutations

Perform the Get Azure Permutations workflow and pick the desired permutation:

- Choose the `ontapVersion` of the desired permutation for the `ontapVersion` field inside the `vsaMetadata` parameter in step 10.
- Choose the `type` of the desired license item from the `license` parameter for the `licenseType` field inside the `vsaMetadata` parameter in step 10.

- Choose the `instanceType` of the desired permutation for the `instanceType` field inside the `vsaMetadata` parameter in step 10.

You will also need to include the `serialNumber` value in the REST API call.
=== 9. Select the Azure storage account types

Perform the Get Azure Storage Account Types workflow and pick the desired storage type.

- Choose the `diskType` of the desired storage type item for the `storageType` parameter in step 10.
- Choose the `size` of the desired disk size from the `sizes` → `size` field for the `size` field inside the `diskSize` parameter in step 10.
- Choose the `unit` of the desired disk size from the `sizes` → `size` field for the `unit` field inside the `diskSize` parameter in step 10.

#### 10. Create the working environment

| HTTP method | Path |
|---|---|
| POST | /occm/api/azure/ha/working-environments |

**curl example**

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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": "ShirleyHa2701",
  "tenantId": "tenantID",
  "region": "eastus2",
  "packageName": "azure_ha_standard",
  "dataEncryptionType": "AZURE",
  "capacityTier": "Blob",
  "vsaMetadata": {
    "ontapVersion": "ONTAP-9.9.0X5.T1.azureha",
    "licenseType": "azure-ha-cot-premium-byol",
    "instanceType": "Standard_DS4_v2"
  },
  "nssAccount": "x0x0x000-0000-000x-00xx-x0000cx0000xx",
  "writingSpeedState": "NORMAL",
  "subnetId": "/subscriptions/x000xx00-0x00-0000-
000x/resourceGroups/occm_group_eastus2/providers/Microsoft.Network/virtual
Networks/Vnet1/subnets/Subnet1",
  "svmPassword": "password",
  "vnetId": "/subscriptions/x000xx00-0x00-0000-
000x/resourceGroups/occm_group_eastus2/providers/Microsoft.Network/virtual
Networks/Vnet1",
  "cidr": "10.0.0.0/16",
  "ontapEncryptionParameters": null,
  "skipSnapshots": false,
  "diskSize": {
    "size": 500,
    "unit": "GB",
    "_identifier": "500 GB"
  },
  "storageType": "Premium_LRS",
  "azureTags": [],
  "resourceGroup": "ShirleyHa2701-rg",
  "subscriptionId": "x000xx00-0x00-0000-000x,
  "cloudProviderAccount": "ManagedServiceIdentity",
  "backupVolumesToCbs": false,
  "enableCompliance": false,
  "enableMonitoring": false,
  "availabilityZone": null,
  "haParams": {
    "platformSerialNumberNode1": "00000110000000000001",
    "platformSerialNumberNode2": "00000110000000000002"
  }
}
```

**Output**

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

**JSON output example**


```
{
    "publicId": "VsaWorkingEnvironment-Kms14Nkv",
    "name": "ShirleyHa2701",
    "tenantId": "tenantID",
    "svmName": "svm_ShirleyHa2701",
    "creatorUserEmail": "user_email",
    "status": null,
    "providerProperties": null,
    "reservedSize": null,
    "clusterProperties": null,
    "ontapClusterProperties": null,
    "cloudProviderName": "Azure",
    "snapshotPolicies": null,
    "actionsRequired": null,
    "activeActions": null,
    "replicationProperties": null,
    "schedules": null,
    "svms": null,
    "workingEnvironmentType": "VSA",
    "supportRegistrationProperties": null,
    "supportRegistrationInformation": null,
    "capacityFeatures": null,
    "encryptionProperties": null,
    "supportedFeatures": null,
    "isHA": true,
    "haProperties": null,
    "k8sProperties": null,
    "fpolicyProperties": null,
    "saasProperties": null,
    "cbsProperties": null,
    "complianceProperties": null,
    "monitoringProperties": null
}
```


## Get working environment

You can retrieve the public identifier, working environment ID, the storage virtual machine name for Cloud Volumes ONTAP working environments and other Cloud Volumes ONTAP related details (visible to currently logged in user) which would be used in other workflows.

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

- Single Node
- HA pair

### Get working environment for single node

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

#### 1. Create the working environment

Perform the Create Azure single node working environment workflow and select the `publicId` from the output for the `workingEnvironmentId` path parameter.

#### 2. Get the working environment

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

**curl**

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/azure/vsa/working-
environments/<WORKING_ENV_ID>?fields=status,ontapClusterProperties.fields(
upgradeVersions,nodes),reservedSize,saasProperties,compliancePropertie
nitoringProperties,providerProperties' --header 'Content-Type:
application/json' --header 'x-agent-id: <AGENT_ID>' --header
'Authorization: Bearer <ACCESS_TOKEN>'
```

**Input**

Path parameters:

- <WORKING_ENV_ID> `workingEnvironmentId` string
- (Optional) `fields` string

**Output**

The JSON output example includes details of a single node Azure working environment.

**JSON output example**


```
{
    "publicId": "VsaWorkingEnvironment-zGQWVOyo",
    "name": "pradipm",
    "tenantId": "tenantID",
    "svmName": "svm_pradipm",
    "creatorUserEmail": "user_email",
    "status": {
        "status": "OFF",
```

```
        "message": "",
        "failureCauses": {
            "invalidOntapCredentials": false,
            "noCloudProviderConnection": false,
            "invalidCloudProviderCredentials": false
        },
        "extendedFailureReason": null
    },
    "providerProperties": {
        "regionName": "westeurope",
        "resourceGroup": {
            "name": "occm_group_westeurope",
            "location": "westeurope",
            "tags": {
                "KeepMe": "true"
            }
        },
        "vnetCidr": "10.0.0.0/16",
        "tags": {
            "KeepMe": "true"
        },
        "subscriptionId": "x000xx00-0x00-0000-000x",
        "deploymentId": "",
        "creationTime": 1631783479373,
        "instanceType": "Standard_DS3_v2",
        "numOfNics": 3,
        "singleNetworkInterface": true,
        "subscriptionName": "OCCM Dev",
        "cloudProviderAccountId": null,
        "availabilityZone": null,
        "dataDisks": [
            {
                "name": "pradipm-disk-root",
                "diskSizeGB": 0,
                "lun": 0,
                "id": "/subscriptions/x000xx00-0x00-0000-
000x/resourceGroups/OCCM_GROUP_WESTEUROPE/providers/Microsoft.Compute/disk
s/pradipm-disk-root",
                "caching": "ReadOnly",
                "accountType": "NA",
                "managed": true,
                "encryptionSet": null
            },
            {
                "name": "pradipm-disk-nvram",
                "diskSizeGB": 0,
```

```
                "lun": 1,
                "id": "/subscriptions/dx000xx00-0x00-0000-
000x/resourceGroups/occm_group_westeurope/providers/Microsoft.Compute/disk
s/pradipm-disk-nvram",
                "caching": "None",
                "accountType": "NA",
                "managed": true,
                "encryptionSet": null
            },
            {
                "name": "pradipm-disk-core",
                "diskSizeGB": 0,
                "lun": 2,
                "id": "/subscriptions/x000xx00-0x00-0000-
000x/resourceGroups/occm_group_westeurope/providers/Microsoft.Compute/disk
s/pradipm-disk-core",
                "caching": "ReadOnly",
                "accountType": "NA",
                "managed": true,
                "encryptionSet": null
            },
            {
                "name": "pradipmdatadisk3",
                "diskSizeGB": 0,
                "lun": 3,
                "id": "/subscriptions/x000xx00-0x00-0000-
000xfbbce1b18/resourceGroups/OCCM_GROUP_WESTEUROPE/providers/Microsoft.Com
pute/disks/pradipmdatadisk3",
                "caching": "None",
                "accountType": "NA",
                "managed": true,
                "encryptionSet": null
            }
        ]
    },
    "reservedSize": {
        "size": 0.0,
        "unit": "GB"
    },
    "clusterProperties": null,
    "ontapClusterProperties": {
        "nodes": [],
        "clusterName": "",
        "clusterUuid": "xxxxx0000000000x00x0x00x0x0x0",
        "ontapVersion": "",
        "systemManagerUrl": "https://10.0.1.5/sysmgr/SysMgr.html",
```

```
        "creationTime": 1631783479373,
        "licenseType": {
            "name": "Cloud Volumes ONTAP Capacity Based Charging",
            "capacityLimit": {
                "size": 500.0,
                "unit": "GB"
            }
        },
        "licensePackageName": null,
        "lastModifiedOffbox": 1632392140549,
        "offboxTarget": false,
        "upgradeVersions": null,
        "writingSpeedState": null,
        "broadcastDomainInfos": [],
        "evaluation": false,
        "capacityTierInfo": null,
        "canConfigureCapacityTier": false,
        "usedCapacity": {
            "size": 0.0,
            "unit": "GB"
        },
        "userName": "admin",
        "wormEnabled": false,
        "isSpaceReportingLogical": false
    },
    "cloudProviderName": "Azure",
    "snapshotPolicies": null,
    "actionsRequired": null,
    "activeActions": null,
    "replicationProperties": null,
    "schedules": null,
    "svms": null,
    "workingEnvironmentType": "VSA",
    "supportRegistrationProperties": null,
    "supportRegistrationInformation": [],
    "capacityFeatures": null,
    "encryptionProperties": null,
    "supportedFeatures": null,
    "isHA": false,
    "haProperties": null,
    "fpolicyProperties": null,
    "saasProperties": {
        "subscription": null,
        "freeTrialExpiry": null,
        "saasEnabled": null,
        "capacityLicensePackage": null
```

```
    },
    "cbsProperties": null,
    "compliancesProperties": {
        "scanStatus": "SCAN_DISABLED",
        "complianceStatus": null,
        "lastDeploymentError": null,
        "complianceBackupStatus": null
    },
    "monitoringProperties": {
        "monitoringStatus": "MONITORING_DISABLED",
        "monitoringInfo": null,
        "tenantUrl": null
    },
    "licensesInformation": null
}
```


### Get working environment for high availability pair

You can use this workflow to retrieve the working environments' details of an HA working environment.

#### 1. Create an Azure HA working environment

Perform the Create Azure dual node working environment workflow and select the `publicId` from the output for the `workingEnvironmentId` path parameter.

#### 2. Get the working environment

| HTTP method | Path |
| --- | --- |
| GET | /occm/api/azure/ha/working-environments/{workingEnvironmentId} |

**curl**

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/azure/ha/working-
environments/<WORKING_ENV_ID>?fields=status,ontapClusterProperties.fields(
upgradeVersions,nodes),reservedSize,saasProperties,compliancesProperties,mo
nitoringProperties,providerProperties' --header 'Content-Type:
application/json' --header 'x-agent-id: <AGENT_ID>' --header
'Authorization: Bearer <ACCESS_TOKEN>'
```

**Input**

Path parameters:

- <WORKING_ENV_ID> `workingEnvironmentId` string
- (Optional) `fields` string

### Output

The JSON output example includes details of a single node Azure working environment.

### JSON output example


```
{
    "publicId": "VsaWorkingEnvironment-Kms14Nkv",
    "name": "ShirleyHa2701",
    "tenantId": "Tenant-c6wmZaze",
    "svmName": "svm_ShirleyHa2701",
    "creatorUserEmail": "useremail",
    "status": {
        "status": "ON",
        "message": "",
        "failureCauses": {
            "invalidOntapCredentials": false,
            "noCloudProviderConnection": false,
            "invalidCloudProviderCredentials": false
        },
        "extendedFailureReason": null
    },
    "providerProperties": {
        "regionName": "eastus2",
        "resourceGroup": {
            "name": "ShirleyHa2701-rg",
            "location": "eastus2",
            "tags": {}
        },
        "vnetCidr": "10.0.0.0/16",
        "tags": {},
        "subscriptionId": "x000xx00-0x00-0000-000x",
        "deploymentId": "",
        "creationTime": 1611698774849,
        "instanceType": "Standard_DS4_v2",
        "numOfNics": 8,
        "singleNetworkInterface": false,
        "subscriptionName": "OCCM Dev",
        "cloudProviderAccountId": null,
        "availabilityZone": null,
        "dataDisks": [
            {
                "name": "ShirleyHa2701-vm1-disk-nvram",
                "diskSizeGB": 128,
                "lun": 1,
                "id": "/subscriptions/x000xx00-0x00-0000-
000x/resourceGroups/ShirleyHa2701-
rg/providers/Microsoft.Compute/disks/ShirleyHa2701-vm1-disk-nvram",
```

```
                "caching": "None",
                "accountType": "Premium_LRS",
                "managed": true,
                "encryptionSet": null
            },
            {
                "name": "ShirleyHa2701-vm1-disk-core",
                "diskSizeGB": 1024,
                "lun": 2,
                "id": "/subscriptions/x000xx00-0x00-0000-
000x/resourceGroups/ShirleyHa2701-
rg/providers/Microsoft.Compute/disks/ShirleyHa2701-vm1-disk-core",
                "caching": "ReadOnly",
                "accountType": "Standard_LRS",
                "managed": true,
                "encryptionSet": null
            },
            {
                "name": "ShirleyHa2701-vm2-disk-nvram",
                "diskSizeGB": 128,
                "lun": 1,
                "id": "/subscriptions/x000xx00-0x00-0000-
000x/resourceGroups/ShirleyHa2701-
rg/providers/Microsoft.Compute/disks/ShirleyHa2701-vm2-disk-nvram",
                "caching": "None",
                "accountType": "Premium_LRS",
                "managed": true,
                "encryptionSet": null
            },
            {
                "name": "ShirleyHa2701-vm2-disk-core",
                "diskSizeGB": 1024,
                "lun": 2,
                "id": "/subscriptions/x000xx00-0x00-0000-
000x/resourceGroups/ShirleyHa2701-
rg/providers/Microsoft.Compute/disks/ShirleyHa2701-vm2-disk-core",
                "caching": "ReadOnly",
                "accountType": "Standard_LRS",
                "managed": true,
                "encryptionSet": null
            }
        ]
    },
    "reservedSize": {
        "size": 1.0,
        "unit": "GB"
```

```
    },
    "clusterProperties": {
        "lifs": [],
        "serialNumber": "",
        "systemId": "",
        "clusterName": "",
        "ontapVersion": "",
        "accountId": "",
        "productCode": "",
        "amiId": "",
        "systemManagerUrl": "",
        "creationTime": 0,
        "instanceId": "",
        "platformLicense": "",
        "licenseExpiryDate": 0,
        "instanceType": "",
        "publicIp": null,
        "publicDnsName": null,
        "licenseType": {
            "name": "",
            "capacityLimit": {
                "size": 0.0,
                "unit": "GB"
            }
        },
        "lastModifiedOffbox": null,
        "offboxTarget": false,
        "upgradeVersions": null,
        "writingSpeedState": null
    },
    "ontapClusterProperties": {
        "nodes": [
            {
                "name": "ShirleyHa2701-01",
                "lifs": [
                    {
                        "ip": "10.0.0.29",
                        "netmask": "255.255.255.0",
                        "lifType": "Cluster",
                        "dataProtocols": [],
                        "nodeName": "ShirleyHa2701-01",
                        "privateIp": true
                    },
                    {
                        "ip": "10.0.0.26",
                        "netmask": "255.255.255.0",
```

```
                    "lifType": "Node Management",
                    "dataProtocols": [],
                    "nodeName": "ShirleyHa2701-01",
                    "privateIp": true
                },
                {
                    "ip": "10.0.0.13",
                    "netmask": "255.255.255.0",
                    "lifType": "Cluster Management",
                    "dataProtocols": [],
                    "nodeName": "ShirleyHa2701-01",
                    "privateIp": true
                },
                {
                    "ip": "10.0.0.27",
                    "netmask": "255.255.255.0",
                    "lifType": "Intercluster",
                    "dataProtocols": [],
                    "nodeName": "ShirleyHa2701-01",
                    "privateIp": true
                },
                {
                    "ip": "10.0.0.14",
                    "netmask": "255.255.255.0",
                    "lifType": "Data",
                    "dataProtocols": [
                        "nfs",
                        "cifs"
                    ],
                    "nodeName": "ShirleyHa2701-01",
                    "privateIp": true
                },
                {
                    "ip": "10.0.0.28",
                    "netmask": "255.255.255.0",
                    "lifType": "Data",
                    "dataProtocols": [
                        "iscsi"
                    ],
                    "nodeName": "ShirleyHa2701-01",
                    "privateIp": true
                },
                {
                    "ip": "10.0.0.16",
                    "netmask": "255.255.255.0",
                    "lifType": "SVM Management",
```

```
                    "dataProtocols": [],
                    "nodeName": "ShirleyHa2701-01",
                    "privateIp": true
                }
            ],
            "serialNumber": "0000000000000000",
            "systemId": "2315255834",
            "platformLicense": null,
            "platformSerialNumber": null,
            "cloudProviderId": "",
            "healthy": true,
            "inTakeover": false
        },
        {
            "name": "ShirleyHa2701-02",
            "lifs": [
                {
                    "ip": "10.0.0.24",
                    "netmask": "255.255.255.0",
                    "lifType": "Cluster",
                    "dataProtocols": [],
                    "nodeName": "ShirleyHa2701-02",
                    "privateIp": true
                },
                {
                    "ip": "10.0.0.18",
                    "netmask": "255.255.255.0",
                    "lifType": "Node Management",
                    "dataProtocols": [],
                    "nodeName": "ShirleyHa2701-02",
                    "privateIp": true
                },
                {
                    "ip": "10.0.0.19",
                    "netmask": "255.255.255.0",
                    "lifType": "Intercluster",
                    "dataProtocols": [],
                    "nodeName": "ShirleyHa2701-02",
                    "privateIp": true
                },
                {
                    "ip": "10.0.0.15",
                    "netmask": "255.255.255.0",
                    "lifType": "Data",
                    "dataProtocols": [
                        "nfs",
```

```
                        "cifs"
                    ],
                    "nodeName": "ShirleyHa2701-02",
                    "privateIp": true
                },
                {
                    "ip": "10.0.0.20",
                    "netmask": "255.255.255.0",
                    "lifType": "Data",
                    "dataProtocols": [
                        "iscsi"
                    ],
                    "nodeName": "ShirleyHa2701-02",
                    "privateIp": true
                }
            ],
            "serialNumber": "0000000000000000",
            "systemId": "2315255826",
            "platformLicense": null,
            "platformSerialNumber": null,
            "cloudProviderId": "",
            "healthy": true,
            "inTakeover": false
        }
    ],
    "clusterName": "ShirleyHa2701",
    "clusterUuid": "xxx000000e-xxx00-xxx00-xxx00-xxx00xxx00",
    "ontapVersion": "9.9.0X5",
    "systemManagerUrl": "https://10.0.0.13/sysmgr/SysMgr.html",
    "creationTime": 1611698774849,
    "licenseType": {
        "name": "Cloud Volumes ONTAP BYOL",
        "capacityLimit": {
            "size": 368.0,
            "unit": "TB"
        }
    },
    "lastModifiedOffbox": null,
    "offboxTarget": true,
    "upgradeVersions": null,
    "writingSpeedState": null,
    "broadcastDomainInfos": [
        {
            "broadcastDomain": "Cluster",
            "ipSpace": "Cluster",
            "mtu": 1500
```

```
            },
            {
                "broadcastDomain": "Default",
                "ipSpace": "Default",
                "mtu": 1500
            }
        ],
        "evaluation": false,
        "capacityTierInfo": {
            "capacityTierUsedSize": {
                "size": 0.0,
                "unit": "GB"
            },
            "s3BucketName": "qxtj1b4zpsieeen.blob.core.windows.net",
            "tierLevel": "normal"
        },
        "canConfigureCapacityTier": false,
        "usedCapacity": {
            "size": 9.863281247817213E-4,
            "unit": "TB"
        },
        "userName": "admin",
        "wormEnabled": false
    },
    "cloudProviderName": "Azure",
    "snapshotPolicies": [
        {
            "name": "default",
            "schedules": [
                {
                    "frequency": "hourly",
                    "retention": 6
                },
                {
                    "frequency": "daily",
                    "retention": 2
                },
                {
                    "frequency": "weekly",
                    "retention": 2
                }
            ],
            "description": "Default policy with hourly, daily & weekly
schedules."
        },
        {
```

```
            "name": "default-1weekly",
            "schedules": [
                {
                    "frequency": "hourly",
                    "retention": 6
                },
                {
                    "frequency": "daily",
                    "retention": 2
                },
                {
                    "frequency": "weekly",
                    "retention": 1
                }
            ],
            "description": "Default policy with 6 hourly, 2 daily & 1
weekly schedule."
        },
        {
            "name": "none",
            "schedules": [],
            "description": "Policy for no automatic snapshots."
        }
    ],
    "actionsRequired": [
        {
            "actionType": "licenseGracePeriod",
            "parameters": {
                "aggregateName": "",
                "numOfDisks": 0,
                "diskSize": null,
                "volumeNames": null,
                "maxCapacity": null,
                "licenseExpiryDate": 1611698969000,
                "serialNumber": "000000000000000000",
                "volumeMoveParameters": null,
                "workingEnvironmentId": "",
                "licenseParameters": null,
                "resourcesToDelete": null,
                "instances": [],
                "moreInfo": null,
                "providerVolumeType": null,
                "volumeInfo": null,
                "currentInstanceType": null
            },
            "severity": "error"
```

```
        },
        {
            "actionType": "licenseGracePeriod",
            "parameters": {
                "aggregateName": "",
                "numOfDisks": 0,
                "diskSize": null,
                "volumeNames": null,
                "maxCapacity": null,
                "licenseExpiryDate": 1611699072000,
                "serialNumber": "000000000000000000000",
                "volumeMoveParameters": null,
                "workingEnvironmentId": "",
                "licenseParameters": null,
                "resourcesToDelete": null,
                "instances": [],
                "moreInfo": null,
                "providerVolumeType": null,
                "volumeInfo": null,
                "currentInstanceType": null
            },
            "severity": "error"
        }
    ],
    "activeActions": [],
    "replicationProperties": {
        "peers": [],
        "replicationTargets": []
    },
    "schedules": [
        {
            "name": "day",
            "schedule": [
                {
                    "stop": {
                        "day": 0,
                        "hour": 20,
                        "minute": 0
                    },
                    "start": {
                        "day": 1,
                        "hour": 8,
                        "minute": 0
                    }
                },
                {
```

```
                    "stop": {
                        "day": 1,
                        "hour": 20,
                        "minute": 0
                    },
                    "start": {
                        "day": 2,
                        "hour": 8,
                        "minute": 0
                    }
                },
                {
                    "stop": {
                        "day": 2,
                        "hour": 20,
                        "minute": 0
                    },
                    "start": {
                        "day": 3,
                        "hour": 8,
                        "minute": 0
                    }
                },
                {
                    "stop": {
                        "day": 3,
                        "hour": 20,
                        "minute": 0
                    },
                    "start": {
                        "day": 4,
                        "hour": 8,
                        "minute": 0
                    }
                },
                {
                    "stop": {
                        "day": 4,
                        "hour": 20,
                        "minute": 0
                    },
                    "start": {
                        "day": 5,
                        "hour": 8,
                        "minute": 0
                    }
```

```
                },
                {
                    "stop": {
                        "day": 5,
                        "hour": 20,
                        "minute": 0
                    },
                    "start": {
                        "day": 6,
                        "hour": 8,
                        "minute": 0
                    }
                },
                {
                    "stop": {
                        "day": 6,
                        "hour": 20,
                        "minute": 0
                    },
                    "start": {
                        "day": 0,
                        "hour": 8,
                        "minute": 0
                    }
                }
            ],
            "enabled": false
        },
        {
            "name": "Weekend",
            "schedule": [
                {
                    "stop": {
                        "day": 6,
                        "hour": 8,
                        "minute": 0
                    },
                    "start": {
                        "day": 1,
                        "hour": 8,
                        "minute": 0
                    }
                }
            ],
            "enabled": false
        },
```

```
        {
            "name": "Weekdays",
            "schedule": [
                {
                    "stop": {
                        "day": 1,
                        "hour": 20,
                        "minute": 0
                    },
                    "start": {
                        "day": 2,
                        "hour": 8,
                        "minute": 0
                    }
                },
                {
                    "stop": {
                        "day": 2,
                        "hour": 20,
                        "minute": 0
                    },
                    "start": {
                        "day": 3,
                        "hour": 8,
                        "minute": 0
                    }
                },
                {
                    "stop": {
                        "day": 3,
                        "hour": 20,
                        "minute": 0
                    },
                    "start": {
                        "day": 4,
                        "hour": 8,
                        "minute": 0
                    }
                },
                {
                    "stop": {
                        "day": 4,
                        "hour": 20,
                        "minute": 0
                    },
                    "start": {
```

```
                        "day": 5,
                        "hour": 8,
                        "minute": 0
                    }
                },
                {
                    "stop": {
                        "day": 5,
                        "hour": 20,
                        "minute": 0
                    },
                    "start": {
                        "day": 6,
                        "hour": 8,
                        "minute": 0
                    }
                }
            ],
            "enabled": false
        }
    ],
    "svms": [
        {
            "name": "svm_ShirleyHa2701",
            "state": "running",
            "language": "c.utf_8",
            "allowedAggregates": [
                "aggr1"
            ],
            "ver3Enabled": true,
            "ver4Enabled": true
        }
    ],
    "workingEnvironmentType": "VSA",
    "supportRegistrationProperties": {
        "supportRegistrationStatus": "registered",
        "licenseExpiryDate": 1604102400000
    },
    "supportRegistrationInformation": [
        {
            "supportRegistrationStatus": "registered",
            "serialNumber": "000000000000000",
            "licenseExpiryDate": 1611698969000,
            "cloudLicenseExists": true,
            "nssAccountId": "x0x0x000-0000-0000x-00de-x000xxxx00000"
        },
```

```
        {
            "supportRegistrationStatus": "registered",
            "serialNumber": "0000000001111",
            "licenseExpiryDate": 1611699072000,
            "cloudLicenseExists": true,
            "nssAccountId": "x0x0x000-0000-0000x-00de-x000xxxx00000"
        }
    ],
    "capacityFeatures": {
        "providerVolumesType": [
            {
                "size": {
                    "size": 500.0,
                    "unit": "GB"
                },
                "supportedVolumeTypes": [
                    "Premium_LRS"
                ],
                "maxDisksAllow": {
                    "numOfDisks": 12,
                    "reason": null
                }
            },
            {
                "size": {
                    "size": 1.0,
                    "unit": "TB"
                },
                "supportedVolumeTypes": [
                    "Premium_LRS"
                ],
                "maxDisksAllow": {
                    "numOfDisks": 12,
                    "reason": null
                }
            },
            {
                "size": {
                    "size": 2.0,
                    "unit": "TB"
                },
                "supportedVolumeTypes": [
                    "Premium_LRS"
                ],
                "maxDisksAllow": {
                    "numOfDisks": 12,
```

```
                    "reason": null
                }
            },
            {
                "size": {
                    "size": 4.0,
                    "unit": "TB"
                },
                "supportedVolumeTypes": [
                    "Premium_LRS"
                ],
                "maxDisksAllow": {
                    "numOfDisks": 12,
                    "reason": null
                }
            },
            {
                "size": {
                    "size": 8.0,
                    "unit": "TB"
                },
                "supportedVolumeTypes": [
                    "Premium_LRS"
                ],
                "maxDisksAllow": {
                    "numOfDisks": 12,
                    "reason": null
                }
            }
        ],
        "defaultProviderVolumeType": {
            "size": {
                "size": 500.0,
                "unit": "GB"
            },
            "diskType": "Premium_LRS",
            "capacityTier": "Blob",
            "iops": null
        },
        "supportedCapacityTiers": {
            "supportedCapacityTiersPerVolumeType": [
                {
                    "volumeType": "Premium_LRS",
                    "supportedCapacityTiers": [
                        "Blob"
                    ],
```

```
                    "availableTieringPolicies": [
                        "none",
                        "snapshot_only",
                        "auto",
                        "all"
                    ]
                }
            ],
            "capacityTiersDisableReasons": [],
            "compositeSupported": true,
            "forceCompositeVersion": true
        },
        "maxDisksPerAggregate": 12,
        "existingIops": []
    },
    "encryptionProperties": {
        "ontapEncryption": false,
        "awsVolumeEncryption": false,
        "azureVolumeEncryption": true,
        "gcpVolumeEncryption": false,
        "keyManagers": [],
        "encryptionCertificates": [],
        "awsEncryptionKey": null
    },
    "supportedFeatures": {
        "supportsMixedAggregates": false,
        "supportsTieringWithServiceAccount": false
    },
    "isHA": true,
    "haProperties": {
        "loadBalancerName": "ShirleyHa2701-rg-lb",
        "node1Info": {
            "instanceName": "ShirleyHa2701-vm1",
            "instanceId": null,
            "primaryIp": "10.0.0.26",
            "state": "running",
            "serialNumber": "000000000000000",
            "availabilitySet": {
                "faultDomain": 0,
                "updateDomain": 0
            }
        },
        "node2Info": {
            "instanceName": "ShirleyHa2701-vm2",
            "instanceId": null,
            "primaryIp": "10.0.0.18",
```

```
            "state": "running",
            "serialNumber": "00000000000000000000000",
            "availabilitySet": {
                "faultDomain": 1,
                "updateDomain": 1
            }
        }
    },
    "k8sProperties": {
        "isConnected": false,
        "mainClusterIds": [],
        "connectedClusterIds": []
    },
    "fpolicyProperties": {
        "status": 0,
        "fPolicyProtocolStatus": {
            "nfsv3": 0,
            "nfsv4": 0,
            "cifs": -1
        },
        "fileExtensions": [
            "micro",
            "encrypted",
            "locked",
            "crypto",
            "crypt",
            "crinf",
            "r5a",
            "XRNT",
            "XTBL",
            "R16M01D05",
            "pzdc",
            "good",
            "LOL!",
            "OMG!",
            "RDM",
            "RRK",
            "encryptedRS",
            "crjoker",
            "EnCiPhErEd",
            "LeChiffre"
        ]
    },
    "saasProperties": {
        "subscription": null,
        "freeTrialExpiry": null,
```

```
        "saasEnabled": false
    },
    "cbsProperties": {
        "cbsBackupStatus": "off",
        "cbsRules": [],
        "numberOfBackedUpVolumes": 0,
        "objectStoreName": null,
        "providerSpecific": null,
        "cbsPolicyName": null,
        "usedCapacity": null,
        "ipSpace": null,
        "region": null,
        "providerAccountName": null,
        "exclusionReason": null
    },
    "compliancesProperties": {
        "scanStatus": "SCAN_DISABLED",
        "complianceStatus": null,
        "lastDeploymentError": null,
        "complianceBackupStatus": null
    },
    "monitoringProperties": {
        "monitoringStatus": "MONITORING_DISABLED",
        "monitoringInfo": null,
        "tenantUrl": null
    }
}
```


## Delete a working environment

You can delete an existing Azure Cloud Volumes ONTAP working environment.

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

- Single Node
- HA pair

### Delete working environment for single node

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

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

Perform the workflow Create Azure single node working environment 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/azure/vsa/working-environments/{workingEnvironmentId} |

**curl example**

```
curl --location --request DELETE
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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)` string

(Optional) Query parameters:

- `localDelete` boolean

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

- `forceDelete` boolean

  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 an HA working environment.

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

Perform the workflow Create Azure HA working environment 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/azure/ha/working-environments/{workingEnvironmentId} |

**curl example**

```
curl --location --request DELETE
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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)` string

(Optional) Query parameters:

- `localDelete` boolean

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

- `forceDelete` boolean

  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 ONTAP documentation for more information.

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

- Single Node
- HA pair

#### Create CIFS server configuration for single node

You can use this workflow to create CIFS server configuration for 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 for the working environment used in the `workingEnvironmentId` path parameter.

### 2. Create the CIFS configuration

Create the CIFS server configuration.

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

**curl example**

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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` string

**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 for the working environment used in 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/azure/vsa/working-environments/{workingEnvironmentId}/cifs |

#### curl example

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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` string

#### 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 to create 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 for the working environment used in the `workingEnvironmentId` path parameter.

#### 2. Create the CIFS configuration

Create the CIFS server configuration.

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

#### curl example

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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` string

#### 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 for the working environment used in 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/azure/ha/working-environments/{workingEnvironmentId}/cifs |

**curl example**

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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` string

**JSON input example**

```
{
    "dnsDomain": "mydomain.com",
    "activeDirectoryDomain": "mydomain.com",
    "ipAddresses": ["10.10.10.20", "172.xx.yy.xx"],
    "netBIOS": "azureHAPayGo",
    "organizationalUnit": "CN=Computers",
    "activeDirectoryUsername": "administrator",
    "activeDirectoryPassword": "password",
    "svmName": "svm_azureHAPayGo"
}
```

**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 Cloud Volumes ONTAP deployment:

- Single Node
- HA pair

### Get CIFS server configuration for single node

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

#### 1. Select the working environment

Perform the workflow Get working environments and choose the `publicId` value for the working environment used in the `workingEnvironmentId` path parameter.

#### 2. Get the CIFS configurations

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

**curl example**

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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` string
- (Optional) Query parameter `svm` string

### Output

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

#### 1. Select the working environment

Perform the workflow Get working environments and choose the `publicId` value for the working environment used in the `workingEnvironmentId` path parameter.

#### 2. Get the CIFS configurations

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

### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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` string
- (Optional) Query parameter `svm` string

**Output**

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

**JSON output example**


```
[
  {
   "dnsDomain": "mydomain.com",
   "activeDirectoryDomain": "mydomain.com",
   "ipAddresses": ["10.10.10.20", "172.xx.yy.xx"],
   "netBIOS": "azureHAPayGo",
   "organizationalUnit": "CN=Computers",
   "activeDirectoryUsername": "administrator",
   "activeDirectoryPassword": "password",
   "svmName": "svm_azureHAPayGo"
  }
]
```


## 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 Cloud Volumes ONTAP deployment:

- Single Node
- HA pair

### Delete CIFS server configuration for single node

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

#### 1. Select the working environment

Perform the workflow Get working environments and choose the `publicId` value for the working environment used in the `workingEnvironmentId` path parameter.

#### 2. Delete the CIFS configurations

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

**curl example**

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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` string
- 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 CIFS server configuration for an HA working environment.

#### 1. Select the working environment

Perform the workflow Get working environments and choose the `publicId` value for the working environment used in the `workingEnvironmentId` path parameter.

#### 2. Delete the CIFS configurations

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

**curl example**

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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` string

- Optional JSON body

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

**Output**

None.

# Aggregates

## Get aggregates

You can retrieve a list of available disk aggregates of an Azure working environment.

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. Create the working environment

Perform the workflow Create Azure single node working environment 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/azure/vsa/aggregates/{workingEnvironmentId} |

**curl example**

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/azure/vsa/aggregates/<WORK
ING_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)` string

### Output

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

The capacity (sizes) in the output are in MB/GB/TB (1000th order) because these are ONTAP aggregates, whereas in Cloud Manager the capacity is specified as MiB, GiB (1024 order).

### JSON output example


```
[
    {
        "name": "aggr1",
        "availableCapacity": {
            "size": 905.27,
            "unit": "GB"
        },
        "totalCapacity": {
            "size": 906.29,
            "unit": "GB"
        },
        "usedCapacity": {
            "size": 1.02,
            "unit": "GB"
        },
        "volumes": [
            {
                "name": "svm_ShirleyAzureVsa2601_root",
                "totalSize": {
                    "size": 1.0,
                    "unit": "GB"
                },
                "usedSize": {
                    "size": 3.62396240234375E-4,
                    "unit": "GB"
                },
                "thinProvisioned": false,
                "isClone": false,
                "rootVolume": true
            }
        ],
        "providerVolumes": [
            {
                "id": "/subscriptions/x000xx00-0x00-0000-
000x/resourceGroups/ShirleyAzureVsa2601-
rg/providers/Microsoft.Compute/disks/ShirleyAzureVsa2601datadisk3",
                "name": "ShirleyAzureVsa2601datadisk3",
                "size": {
```

```
                    "size": 1.0,
                    "unit": "TB"
                },
                "state": "available",
                "device": "3",
                "instanceId": "/subscriptions/x000xx00-0x00-0000-
000x/resourceGroups/ShirleyAzureVsa2601-
rg/providers/Microsoft.Compute/virtualMachines/ShirleyAzureVsa2601",
                "diskType": "Premium_LRS",
                "encrypted": false,
                "iops": null
            }
        ],
        "disks": [
            {
                "name": "NET-1.2",
                "position": "data",
                "ownerNode": "ShirleyAzureVsa2601-01",
                "device": "LUN 5.3",
                "vmDiskProperties": null
            }
        ],
        "state": "online",
        "encryptionType": "notEncrypted",
        "encryptionKeyId": null,
        "isRoot": false,
        "homeNode": "ShirleyAzureVsa2601-01",
        "ownerNode": "ShirleyAzureVsa2601-01",
        "capacityTier": null,
        "capacityTierUsed": null,
        "sidlEnabled": false,
        "snaplockType": "non_snaplock"
    },
    {
        "name": "aggr2",
        "availableCapacity": {
            "size": 906.29,
            "unit": "GB"
        },
        "totalCapacity": {
            "size": 906.29,
            "unit": "GB"
        },
        "usedCapacity": {
            "size": 3.48,
            "unit": "MB"
```

```
        },
        "volumes": [],
        "providerVolumes": [
            {
                "id": "/subscriptions/x000xx00-0x00-0000-
000x/resourceGroups/ShirleyAzureVsa2601-
rg/providers/Microsoft.Compute/disks/ShirleyAzureVsa2601datadisk4",
                "name": "ShirleyAzureVsa2601datadisk4",
                "size": {
                    "size": 1.0,
                    "unit": "TB"
                },
                "state": "available",
                "device": "4",
                "instanceId": "/subscriptions/x000xx00-0x00-0000-
000x/resourceGroups/ShirleyAzureVsa2601-
rg/providers/Microsoft.Compute/virtualMachines/ShirleyAzureVsa2601",
                "diskType": "Premium_LRS",
                "encrypted": false,
                "iops": null
            }
        ],
        "disks": [
            {
                "name": "NET-1.3",
                "position": "data",
                "ownerNode": "ShirleyAzureVsa2601-01",
                "device": "LUN 5.4",
                "vmDiskProperties": null
            }
        ],
        "state": "online",
        "encryptionType": "notEncrypted",
        "encryptionKeyId": null,
        "isRoot": false,
        "homeNode": "ShirleyAzureVsa2601-01",
        "ownerNode": "ShirleyAzureVsa2601-01",
        "capacityTier": null,
        "capacityTierUsed": null,
        "sidlEnabled": false,
        "snaplockType": "non_snaplock"
    },
    {
        "name": "aggr3",
        "availableCapacity": {
            "size": 1.77,
```

```
            "unit": "TB"
        },
        "totalCapacity": {
            "size": 1.77,
            "unit": "TB"
        },
        "usedCapacity": {
            "size": 5.78,
            "unit": "MB"
        },
        "volumes": [],
        "providerVolumes": [
            {
                "id": "/subscriptions/x000xx00-0x00-0000-
000x/resourceGroups/ShirleyAzureVsa2601-
rg/providers/Microsoft.Compute/disks/ShirleyAzureVsa2601datadisk5",
                "name": "ShirleyAzureVsa2601datadisk5",
                "size": {
                    "size": 1.0,
                    "unit": "TB"
                },
                "state": "available",
                "device": "5",
                "instanceId": "/subscriptions/x000xx00-0x00-0000-
000x/resourceGroups/ShirleyAzureVsa2601-
rg/providers/Microsoft.Compute/virtualMachines/ShirleyAzureVsa2601",
                "diskType": "Premium_LRS",
                "encrypted": false,
                "iops": null
            },
            {
                "id": "/subscriptions/x000xx00-0x00-0000-
000x/resourceGroups/ShirleyAzureVsa2601-
rg/providers/Microsoft.Compute/disks/ShirleyAzureVsa2601datadisk6",
                "name": "ShirleyAzureVsa2601datadisk6",
                "size": {
                    "size": 1.0,
                    "unit": "TB"
                },
                "state": "available",
                "device": "6",
                "instanceId": "/subscriptions/x000xx00-0x00-0000-
000x/resourceGroups/ShirleyAzureVsa2601-
rg/providers/Microsoft.Compute/virtualMachines/ShirleyAzureVsa2601",
                "diskType": "Premium_LRS",
                "encrypted": false,
```

```
                "iops": null
            }
        ],
        "disks": [
            {
                "name": "NET-1.4",
                "position": "data",
                "ownerNode": "ShirleyAzureVsa2601-01",
                "device": "LUN 5.5",
                "vmDiskProperties": null
            },
            {
                "name": "NET-1.5",
                "position": "data",
                "ownerNode": "ShirleyAzureVsa2601-01",
                "device": "LUN 5.6",
                "vmDiskProperties": null
            }
        ],
        "state": "online",
        "encryptionType": "notEncrypted",
        "encryptionKeyId": null,
        "isRoot": false,
        "homeNode": "ShirleyAzureVsa2601-01",
        "ownerNode": "ShirleyAzureVsa2601-01",
        "capacityTier": null,
        "capacityTierUsed": null,
        "sidlEnabled": false,
        "snaplockType": "non_snaplock"
    }
]
```


### Get aggregates for high availability pair

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

#### 1. Create the working environment

Perform the workflow Create Azure HA working environment 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/azure/ha/aggregates/{workingEnvironmentId} |

### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/azure/ha/aggregates/<WORKI
NG_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)` string

### Output

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

The capacity (sizes) in the output are in MB/GB/TB (1000th order) because these are ONTAP aggregates, whereas in Cloud Manager the capacity is specified as MiB, GiB (1024 order).

### JSON output example


```
[
    {
        "name": "aggr1",
        "availableCapacity": {
            "size": 906.16,
            "unit": "GB"
        },
        "totalCapacity": {
            "size": 907.18,
            "unit": "GB"
        },
        "usedCapacity": {
            "size": 1.01,
            "unit": "GB"
        },
        "volumes": [
            {
                "name": "svm_ShirleyHa2801_root",
                "totalSize": {
                    "size": 1.0,
                    "unit": "GB"
                },
                "usedSize": {
                    "size": 3.24249267578125E-4,
                    "unit": "GB"
                },
```

```
                "thinProvisioned": false,
                "isClone": false,
                "rootVolume": true
            }
        ],
        "providerVolumes": [
            {
                "id": "ki4cw3n3oyha",
                "name": "ki4cw3n3oyha",
                "size": {
                    "size": 1.0,
                    "unit": "TB"
                },
                "state": "available",
                "device": "",
                "instanceId": "",
                "diskType": "Premium_LRS",
                "encrypted": true,
                "iops": null
            }
        ],
        "disks": [
            {
                "name": "NET-1.3",
                "position": "data",
                "ownerNode": "ShirleyHa2801-01",
                "device": "",
                "vmDiskProperties": {
                    "objectName": "ki4cw3n3oyha",
                    "storageAccountName": "rootsacnqfypfg",
                    "containerName": "blobcontainer"
                }
            }
        ],
        "state": "online",
        "encryptionType": "cloudEncrypted",
        "encryptionKeyId": null,
        "isRoot": false,
        "homeNode": "ShirleyHa2801-01",
        "ownerNode": "ShirleyHa2801-01",
        "capacityTier": "Blob",
        "capacityTierUsed": {
            "size": 0.0,
            "unit": "GB"
        },
        "sidlEnabled": true,
```

```
            "snaplockType": "non_snaplock"
        },
        {
            "name": "aggr2",
            "availableCapacity": {
                "size": 907.18,
                "unit": "GB"
            },
            "totalCapacity": {
                "size": 907.18,
                "unit": "GB"
            },
            "usedCapacity": {
                "size": 500.0,
                "unit": "KB"
            },
            "volumes": [],
            "providerVolumes": [
                {
                    "id": "1102qyj51rwt",
                    "name": "1102qyj51rwt",
                    "size": {
                        "size": 1.0,
                        "unit": "TB"
                    },
                    "state": "available",
                    "device": "",
                    "instanceId": "",
                    "diskType": "Premium_LRS",
                    "encrypted": true,
                    "iops": null
                }
            ],
            "disks": [
                {
                    "name": "NET-1.4",
                    "position": "data",
                    "ownerNode": "ShirleyHa2801-01",
                    "device": "",
                    "vmDiskProperties": {
                        "objectName": "1102qyj51rwt",
                        "storageAccountName": "rootsacnqfypfg",
                        "containerName": "blobcontainer"
                    }
                }
            ],
```

```
        "state": "online",
        "encryptionType": "cloudEncrypted",
        "encryptionKeyId": null,
        "isRoot": false,
        "homeNode": "ShirleyHa2801-01",
        "ownerNode": "ShirleyHa2801-01",
        "capacityTier": "Blob",
        "capacityTierUsed": {
            "size": 0.0,
            "unit": "GB"
        },
        "sidlEnabled": true,
        "snaplockType": "non_snaplock"
    }
]
```


## Create aggregate

You can create a new aggregate within an Azure working environment using this workflow.

#### 1. Create the working environment

Perform the workflow Create Azure single node working environment and choose the `publicId` value for the `workingEnvironmentId` parameter in the JSON input.

#### 2. Select the Azure Storage Account Types

Perform the Get Azure Storage Account Types workflow and choose the desired storage type:

- Choose the `diskType` of the desired storage type item for the `providerVolumeType` parameter in the JSON input.
- Choose the `size` value of the desired disk from the `sizes` → `size` field for the `size` field inside `diskSize` parameter in the JSON input.
- Choose the `unit` value of the desired disk from the `sizes` → `size` field for the `unit` field inside `diskSize` parameter in the JSON input.

#### 3. Create the aggregate

| HTTP method | Path |
|---|---|
| POST | occm/api/azure/vsa/aggregates |

**curl example**

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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": "aggr3",
  "workingEnvironmentId": "VsaWorkingEnvironment-IsDYFJf8",
  "numberOfDisks": "2",
  "diskSize": {
    "size": "1",
    "unit": "TB"
  },
  "providerVolumeType": "Premium_LRS"
}
```

**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. Create the working environment

Perform the workflow Create Azure single node working environment and choose the `publicId` value for the `workingEnvironmentId` path parameter.

#### 2. Create the aggregate

Perform the workflow Create aggregate to create an aggregate with the name `aggr2` and choose `aggr2` for the `aggregateName` path parameter.

#### 3. Add the disks to the aggregate

| HTTP method | Path |
|---|---|
| POST | /occm/api/azure/vsa/aggregates/{workingEnvironmentId}/{aggregateName}/disks |

**curl example**

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/azure/vsa/aggregates/<WORK
ING_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)` string
- <AGGR_NAME> `(aggregateName)` string

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. Create the working environment

Perform the workflow Create Azure HA working environment and choose the `publicId` value for the `workingEnvironmentId` path parameter.

#### 2. Create the aggregate

Perform the workflow Create aggregate to create an aggregate with the name `aggr2` and choose `aggr2` for the `aggregateName` path parameter.

#### 3. Add the disks to the aggregate

| HTTP method | Path |
|---|---|
| POST | /occm/api/azure/ha/aggregates/{workingEnvironmentId}/{aggregateName}/disks |

**curl example**

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/azure/ha/aggregates/<WORKI
NG_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)` string
- <AGGR_NAME> `(aggregateName)` string

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

**JSON input example**

```
{
    "numberOfDisks": "2"
}
```

**Output**

None

## Delete aggregate

You can delete an existing disk aggregate in an Azure working environment.

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. Create the working environment

Perform the workflow Create Azure single node working environment and choose the `publicId` value of the working environment for the `workingEnvironmentId` path parameter.

#### 2. Create an aggregate to delete

Perform the workflow Create aggregate to create an aggregate with the name `aggr2`. Use `aggr2` value for the `aggregateName` path parameter.

#### 3. Delete the aggregate

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

**curl example**

```
curl --location --request DELETE
'https://cloudmanager.cloud.netapp.com/occm/api/azure/vsa/aggregates/<WORK
ING_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`) string
- <AGGR_NAME> (`aggregateName`) string

**Output**

None

### Delete aggregate for high availability pair

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

#### 1. Create the working environment

Perform the workflow Create Azure HA working environment and choose the `publicId` value of the working environment for the `workingEnvironmentId` path parameter.

#### 2. Create an aggregate to delete

Perform the workflow Create aggregate to create an aggregate with the name `aggr2`. Use `aggr2` value for the `aggregateName` path parameter.

#### 3. Delete the aggregate

| HTTP method | Path |
|---|---|
| DELETE | /occm/api/azure/ha/aggregates/{workingEnvironmentId}/{aggregateName} |

**curl example**

```
curl --location --request DELETE
'https://cloudmanager.cloud.netapp.com/occm/api/azure/ha/aggregates/<WORKI
NG_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`) string
- <AGGR_NAME> (`aggregateName`) string

**Output**

None

### Delete aggregate for high availability pair

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

#### 1. Create the working environment

Perform the workflow Create Azure HA working environment and choose the `publicId` value of the working environment for the `workingEnvironmentId` path parameter.

#### 2. Create an aggregate to delete

Perform the workflow Create aggregate to create an aggregate with the name `aggr2`. Use `aggr2` value for the `aggregateName` path parameter.

#### 3. Delete the aggregate

| HTTP method | Path |
| --- | --- |
| DELETE | /occm/api/azure/ha/aggregates/{workingEnvironmentId}/{aggregateName} |

**curl example**

```
curl --location --request DELETE
'https://cloudmanager.cloud.netapp.com/occm/api/azure/ha/aggregates/<WORKI
NG_ENV_ID>/aggr2' --header 'Content-Type: application/json' --header 'x-
agent-id: <AGENT_ID>' --header 'Authorization: Bearer <ACCESS_TOKEN>'
```

**Input**

Path parameters:

- <WORKING_ENV_ID> (`workingEnvironmentId`) string
- <AGGR_NAME> (`aggregateName`) string

**Output**

None

# Volumes

## Create a volume using NFS

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

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 a volume using NFS protocol for a single node working environment.

#### 1. Select the working environment

Perform the workflow Create working environments and choose the `publicId` value for the `workingEnvironmentId` parameter in the JSON input.

#### 2. Create the volume

| HTTP method | Path |
| --- | --- |
| POST | /occm/api/azure/vsa/volumes |

**curl example**

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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.

**JSON input example**

```
{
  "providerVolumeType": "Premium_LRS",
  "verifyNameUniqueness": true,
  "name": "vol2",
  "size": {
    "size": 10,
    "unit": "GB"
  },
  "enableCompression": true,
  "enableDeduplication": true,
  "createAggregateIfNotFound": "true",
  "enableThinProvisioning": true,
  "aggregateName": "aggr1",
  "maxNumOfDisksApprovedToAdd": 0,
  "svmName": "svm_ShirleyAzureVsa2601",
  "iops": null,
  "snapshotPolicyName": "default",
  "autoVsaCapacityManagementEnabled": true,
  "exportPolicyInfo": {
    "_ips": "10.0.0.0/16",
    "ips": [
      "10.0.0.0/16"
    ],
    "nfsVersion": [
      "nfs3",
      "nfs4"
    ],
    "policyType": "custom"
  },
  "workingEnvironmentId": "VsaWorkingEnvironment-IsDYFJf8"
}
```


**Output**

None

### Create volume using NFS for high availability pair

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

#### 1. Select the working environment

Perform the workflow Create working environments and choose the `publicId` value for the `workingEnvironmentId` parameter in the JSON input.

#### 2. Create the volume

| HTTP method | Path |
| --- | --- |
| POST | /occm/api/azure/ha/volumes |

**curl example**

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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.

**JSON input example**

```
{
  "providerVolumeType": "Premium_LRS",
  "verifyNameUniqueness": true,
  "name": "vol3",
  "size": {
    "size": 100,
    "unit": "GB"
  },
  "enableCompression": true,
  "enableDeduplication": true,
  "createAggregateIfNotFound": "true",
  "enableThinProvisioning": true,
  "aggregateName": "aggr1",
  "maxNumOfDisksApprovedToAdd": 0,
  "svmName": "svm_ShirleyHa2901",
  "iops": null,
  "snapshotPolicyName": "default",
  "autoVsaCapacityManagementEnabled": true,
  "exportPolicyInfo": {
    "_ips": "10.0.0.0/16",
    "ips": [
      "10.0.0.0/16"
    ],
    "nfsVersion": [
      "nfs3",
      "nfs4"
    ],
    "policyType": "custom"
  },
  "workingEnvironmentId": "VsaWorkingEnvironment-LUeyohBV"
}
```

**Output**

None

## Create a volume using CIFS

You can use this workflow to create a volume accessed through CIFS 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 CIFS for single node

You can use this workflow to create a volume using CIFS protocol for a single node 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` value for the `workingEnvironmentId` (working environment) and the `svmName` (SVM name).

#### 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/azure/vsa/volumes |

### curl example

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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)` string
- <SVM_NAME> `(svmName)` string
- <AGGR_NAME> `(aggregateName)` string

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 a volume using CIFS protocol 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` value for the `workingEnvironmentId` (working environment) and the `svmName` (SVM name).

#### 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/azure/ha/volumes |

**curl example**

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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)` string
- <SVM_NAME> `(svmName)` string
- <AGGR_NAME> `(aggregateName)` string

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 a volume using iSCSI

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

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 a volume using iSCSI protocol for a single node 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` 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/azure/vsa/volumes |

**curl example**

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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)` string
- <SVM_NAME> `(svmName)` string
- <AGGR_NAME> `(aggregateName)` string

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:00xx00000000",
            "iqn.1994-05.com.redhat:00xx00000000"
        ]
    },
    "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` 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 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/azure/vsa/volumes |

**curl example**

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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)` string
- <SVM_NAME> `(svmName)` string

- <AGGR_NAME> `(aggregateName)` string

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 exmaple**

```
{
  "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

You can use this workflow to create a volume using iSCSI protocol 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` 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/azure/ha/volumes |

**curl example**

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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)` string

- <SVM_NAME> `(svmName)` string
- <AGGR_NAME> `(aggregateName)` string

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-1m76JaRt",
   "svmName":"svm_ranukazure12",
   "snapshotPolicyName":"default",
   "name":"ranukvoliscsi",
   "iops":null,
   "throughput":null,
   "providerVolumeType":"Premium_LRS",
   "capacityTier":"Blob",
   "tieringPolicy":"auto",
   "verifyNameUniqueness":true,
   "iscsiInfo":{
      "igroupCreationRequest":{
         "igroupName":"ig1",
         "initiators":[
            "iqn.1991-05.com.microsoft:pradipm02-pc"
         ]
      },
      "osName":"windows"
   },
   "size":{
      "size":200,
      "unit":"GB"
   },
   "enableThinProvisioning":true,
   "enableDeduplication":true,
   "enableCompression":true,
   "maxNumOfDisksApprovedToAdd":0,
   "aggregateName":"aggr1"
}
```

**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` 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 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/azure/ha/volumes |

**curl example**

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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)` string
- <SVM_NAME> `(svmName)` string
- <AGGR_NAME> `(aggregateName)` string

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 exmaple**

```
{
  "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 of an Azure working environment.

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

- Single Node
- HA pair

### Get volume for single node

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

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

- Single Node
- HA pair

### Get volume for single node

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

#### 1. Create the working environment

Perform the workflow Create Azure single node working environment and choose the `publicId` value of the

working environment for the `workingEnvironmentId` query parameter.

#### 2. Get the volumes

| HTTP method | Path |
|---|---|
| GET | /occm/api/azure/vsa/volumes |

**curl example**

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/azure/vsa/volumes?workingE
nvironmentId=<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)` string

**Output**

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

**JSON output example**


```
[
    {
        "name": "vol1",
        "uuid": "x0000x00-0000-xx00-x000-000x0x0xxxxx",
        "svmName": "svm_ShirleyAzureVsa2601",
        "size": {
            "size": 10.0,
            "unit": "GB"
        },
        "usedSize": {
            "size": 2.74658203125E-4,
            "unit": "GB"
        },
        "junctionPath": "/vol1",
        "volumeTotalInodes": 311287,
        "volumeUsedInodes": 96,
        "mountPoint": "10.0.0.10:/vol1",
        "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_ShirleyAzureVsa2601-vol1",
            "policyType": "custom",
            "ips": [
                "10.0.0.0/16"
            ],
            "nfsVersion": [
                "nfs3",
                "nfs4"
            ]
        },
        "shareNames": [],
        "shareInfo": [],
        "parentVolumeName": "",
        "rootVolume": false,
        "state": "online",
        "volumeType": "rw",
        "aggregateName": "aggr1",
        "parentSnapshot": null,
        "autoSizeMode": "grow",
        "maxGrowSize": {
            "size": 110.0,
            "unit": "GB"
        },
        "providerVolumeType": "Premium_LRS",
        "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": 0.0,
            "unit": "Byte"
        },
        "cbsBackupsInfo": null,
        "minimumCoolingDays": null,
        "targetName": "iqn.1992-
08.com.netapp:sn.65c7e1cc600d11eb8ca3000d3a7e6f7c:vs.2",
        "iscsiEnabled": false,
        "isFlexGroupVolume": false
    }
]
```


### Get volume for high availability pair

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

#### 1. Create the working environment

Perform the workflow Create Azure HA working environment and choose the `publicId` value of the working environment for the `workingEnvironmentId` query parameter.

#### 2. Get the volumes

| HTTP method | Path |
| --- | --- |
| GET | /occm/api/azure/ha/volumes |

### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/azure/ha/volumes?workingEn
vironmentId=<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)` string

### Output

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

**JSON output example**


```
[
    {
        "name": "vol1",
        "uuid": "x0000x00-0000-xx00-x000-000x0x0xxxxx",
        "svmName": "svm_ShirleyHa2901",
        "size": {
            "size": 100.0,
            "unit": "GB"
        },
        "usedSize": {
            "size": 2.93731689453125E-4,
            "unit": "GB"
        },
        "junctionPath": "/vol1",
        "volumeTotalInodes": 3112959,
        "volumeUsedInodes": 96,
        "mountPoint": "10.0.0.9:/vol1",
        "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_ShirleyHa2901-vol1",
            "policyType": "custom",
            "ips": [
                "10.0.0.0/16"
            ],
            "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": "Premium_LRS",
        "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": 0.0,
            "unit": "Byte"
        },
        "cbsBackupsInfo": null,
        "minimumCoolingDays": null,
        "targetName": "iqn.1992-
08.com.netapp:sn.fc000x0000000xx0x000000xae000005:vs.3",
        "iscsiEnabled": false,
        "isFlexGroupVolume": false
    },
    {
        "name": "vol2",
        "uuid": "x0000x00-0000-xx00-x000-000x0x0xxxxx",
        "svmName": "svm_ShirleyHa2901",
        "size": {
```

```
            "size": 30.0,
            "unit": "GB"
        },
        "usedSize": {
            "size": 2.6702880859375E-4,
            "unit": "GB"
        },
        "junctionPath": "/vol2",
        "volumeTotalInodes": 933887,
        "volumeUsedInodes": 96,
        "mountPoint": "10.0.0.9:/vol2",
        "compressionSpaceSaved": {
            "size": 0.0,
            "unit": "GB"
        },
        "deduplicationSpaceSaved": {
            "size": 0.0,
            "unit": "GB"
        },
        "thinProvisioning": false,
        "compression": false,
        "deduplication": false,
        "snapshotPolicy": "default",
        "securityStyle": "unix",
        "exportPolicyInfo": {
            "name": "export-svm_ShirleyHa2901-vol2",
            "policyType": "custom",
            "ips": [
                "10.0.0.0/16"
            ],
            "nfsVersion": [
                "nfs3",
                "nfs4"
            ]
        },
        "shareNames": [],
        "shareInfo": [],
        "parentVolumeName": "",
        "rootVolume": false,
        "state": "online",
        "volumeType": "rw",
        "aggregateName": "aggr1",
        "parentSnapshot": null,
        "autoSizeMode": "grow",
        "maxGrowSize": {
            "size": 330.0,
```

```
            "unit": "GB"
        },
        "providerVolumeType": "Premium_LRS",
        "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": 0.0,
            "unit": "Byte"
        },
        "cbsBackupsInfo": null,
        "minimumCoolingDays": null,
        "targetName": "iqn.1992-
08.com.netapp:sn.fc000x0000000xx0x000000xae000005: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 volume configuration for a single node working environment.

#### 1. Create the working environment

Perform the workflow Create Azure single node working environment and choose the `publicId` value of the working environment to be used as the `workingEnvironmentId` path parameter.

#### 2. Select the volume

Perform the workflow Get volumes and choose the `name` and the `svmName` values of the volume to modify and use them for the `volumeName` and `svmName` path parameters.

#### 3. Modify the volume

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

**curl example**

```
curl --location --request PUT
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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)` string
- <SVM_NAME> `(svmName)` string
- <VOLUME_NAME> `(volumeName)` string

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

**JSON input example**

```
{
  "volumeName": "vol5",
  "svmName": "svm_ShirleyAzureVsa2601",
  "originalVolumeInfo": {
    "exportPolicyInfo": {
      "ips": [
        "10.0.0.0/16"
      ],
      "name": "export-svm_ShirleyAzureVsa2601-vol5",
      "nfsVersion": [
        "nfs3",
        "nfs4"
      ],
      "policyType": "custom"
    },
    "shareInfo": [],
    "snapshotPolicyName": "default"
  },
  "workingEnvironmentName": "ShirleyAzureVsa2601",
  "snapshotPolicyName": "default",
  "exportPolicyInfo": {
    "ips": [],
    "policyType": "none"
  },
  "workingEnvironmentId": "VsaWorkingEnvironment-IsDYFJf8"
}
```


**Output**

None

### Modify volume for high availability pair

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

#### 1. Create the working environment

Perform the workflow Create Azure HA working environment and choose the `publicId` value of the working environment to be used as the `workingEnvironmentId` path parameter.

#### 2. Select the volume

Perform the workflow Get volumes and choose the `name` and the `svmName` values of the volume to modify and use them for the `volumeName` and `svmName` path parameters.

#### 3. Modify the volume

| HTTP method | Path |
| --- | --- |
| PUT | /occm/api/azure/ha/volumes/{workingEnvironmentId}/{svmName}/{volumeName} |

**curl example**

```
curl --location --request PUT
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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)` string
- <SVM_NAME> `(svmName)` string
- <VOLUME_NAME> `(volumeName)` string

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

**JSON input example**

```
{
  "volumeName": "vol2",
  "svmName": "svm_ShirleyHa2901",
  "originalVolumeInfo": {
    "exportPolicyInfo": {
      "ips": [
        "10.0.0.0/16"
      ],
      "name": "export-svm_ShirleyHa2901-vol2",
      "nfsVersion": [
        "nfs3",
        "nfs4"
      ],
      "policyType": "custom"
    },
    "shareInfo": [],
    "snapshotPolicyName": "default"
  },
  "workingEnvironmentName": "ShirleyHa2901",
  "snapshotPolicyName": "default",
  "exportPolicyInfo": {
    "ips": [
      "20.0.0.0/16"
    ],
    "nfsVersion": [
      "nfs4"
    ],
    "policyType": "custom"
  },
  "workingEnvironmentId": "VsaWorkingEnvironment-LUeyohBV"
}
```


**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 volume for a single node working environment.

#### 1. Create the working environment

Perform the Create Azure single node working environment workflow and choose the `publicId` value for the working environment field in the input parameter.

#### 2. Select the volume

Perform the workflow Get volumes and choose the `name` and the `svmName` values of the volume to delete and use them for the `volumeName` and `svmName` path parameters.

#### 3. Delete the volume

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

**curl example**

```
curl --location --request DELETE
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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)` string
- <SVM_NAME> `(svmName)` string
- <VOLUME_NAME> `(volumeName)` string

**Output**

None

### Delete volume for high availability pair

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

#### 1. Create the working environment

Perform the Create Azure HA working environment workflow and choose the `publicId` value for the working environment field in the input parameter.

#### 2. Select the volume

Perform the workflow Get volumes and choose the `name` and the `svmName` values of the volume to delete and use them for the `volumeName` and `svmName` path parameters.

#### 3. Delete the volume

| HTTP method | Path |
|---|---|
| DELETE | /occm/api/azure/ha/volumes/{workingEnvironmentId}/{svmName}/{volumeName} |

**curl example**

```
curl --location --request DELETE
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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)` string
- <SVM_NAME> `(svmName)` string
- <VOLUME_NAME> `(volumeName)` string

**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 perform this workflow to create a volume quote for a single node working environment.

#### 1. Select the working environment

Perform the workflow Create Azure single node working environment and choose the `publicId` value for the working environment field in the input parameter.

#### 2. Generate the volume quote

| HTTP method | Path |
|---|---|
| POST | /occm/api/azure/vsa/quote |

**curl example**

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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**

```
{
  "providerVolumeType": "Premium_LRS",
  "verifyNameUniqueness": true,
  "name": "vol3",
  "size": {
    "size": 10,
    "unit": "GB"
  },
  "enableCompression": true,
  "enableDeduplication": true,
  "enableThinProvisioning": true,
  "svmName": "svm_ShirleyAzureVsa2601",
  "iops": null,
  "snapshotPolicyName": "default",
  "autoVsaCapacityManagementEnabled": true,
  "exportPolicyInfo": {
    "_ips": "10.0.0.0/16",
    "ips": [
      "10.0.0.0/16"
    ],
    "policyType": "custom"
  },
  "workingEnvironmentId": "VsaWorkingEnvironment-IsDYFJf8"
}
```

**Output**

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

**JSON output example**

```
{
    "numOfDisks": 0,
    "diskSize": {
        "size": 1.0,
        "unit": "TB"
    },
    "aggregateName": "aggr1",
    "newAggregate": false,
    "autoVsaCapacityManagement": true
}
```

### Create quote for high availability pair

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

#### 1. Create the working environment

Perform the workflow Create Azure HA working environment and choose the `publicId` value for the working environment field in the input parameter.

#### 2. Generate the volume quote

| HTTP method | Path |
| --- | --- |
| POST | /occm/api/azure/ha/quote |

### curl example

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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

```
{
  "providerVolumeType": "Premium_LRS",
  "verifyNameUniqueness": true,
  "name": "vol3",
  "size": {
    "size": 10,
    "unit": "GB"
  },
  "enableCompression": true,
  "enableDeduplication": true,
  "enableThinProvisioning": true,
  "svmName": "svm_ShirleyAzureVsa2601",
  "iops": null,
  "snapshotPolicyName": "default",
  "autoVsaCapacityManagementEnabled": true,
  "exportPolicyInfo": {
    "_ips": "10.0.0.0/16",
    "ips": [
      "10.0.0.0/16"
    ],
    "policyType": "custom"
  },
  "workingEnvironmentId": "VsaWorkingEnvironment-IsDYFJf8"
}
```


**Output**

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

**JSON output example**


```
{
    "numOfDisks": 0,
    "diskSize": {
        "size": 1.0,
        "unit": "TB"
    },
    "aggregateName": "aggr1",
    "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 iGroups for a single node working environment.

#### 1. Select the working environment

Perform the workflow Create Azure single node working environment and choose the `publicId` and `svmName` values for the working environment `workingEnvironmentId` and `svmName` path parameters.

#### 2. Get the CIFS configurations

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

**curl example**

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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> `workingEnvironmentId` string
- Path parameter <SVM_NAME> `svmName` string

**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:0x0xx000000x"
        ]
    },
    {
        "igroupName": "zivIgroup2",
        "osType": "linux",
        "portsetName": "",
        "igroupType": "iscsi",
        "initiators": [
            "iqn.1994-05.com.redhat:0x0xx000000x"
        ]
    }
]
```


### Get iGroups for high availability pair

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

#### 1. Select the working environment

Perform the workflow Create Azure single node working environment and choose the `publicId` and `svmName` values for the working environment `workingEnvironmentId` and `svmName` path parameters.

#### 2. Get the CIFS configurations

| HTTP method | Path |
|---|---|
| GET | /occm/api/azure/ha/volumes/igroups/{workingEnvironmentId}/{svmName} |

### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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> `workingEnvironmentId` string

- Path parameter <SVM_NAME> `svmName` string

**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:0x0xx000000x"
        ]
    },
    {
        "igroupName": "zivIgroup2",
        "osType": "linux",
        "portsetName": "",
        "igroupType": "iscsi",
        "initiators": [
            "iqn.1994-05.com.redhat:0x0xx000000x"
        ]
    }
]
```


# Metadata

## Get Azure regions

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

Ensure that you've the Azure subscription ID. You can easily obtain the ID from the Azure portal.

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

- Single Node
- HA pair

### Get Azure regions for single node

You can perform this workflow to retrieve the Azure regions for a single node working environment.

#### 1. Get the list of regions

| HTTP method | Path |
| --- | --- |
| GET | /occm/api/azure/vsa/metadata/regions |

**Curl example**

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

**Input**

Query parameters (Optional):

- `fields`, string
- `subscriptionId`, string
- `cloudProviderAccountId`, string

**Output**

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

**JSON output example**

```
[
    {
        "displayName": "Central US",
        "name": "centralus",
        "vnets": null
    },
    {
        "displayName": "East US",
        "name": "eastus",
        "vnets": null
    },
    {
        "displayName": "East US 2",
        "name": "eastus2",
        "vnets": null
    },
    {
        "displayName": "West US 2",
        "name": "westus2",
        "vnets": null
    }
]
```


### Get Azure regions for high availability pair

You can perform this workflow to retrieve the Azure regions for an HA working environment.

#### 1. Get the list of regions

| HTTP method | Path |
|---|---|
| GET | /occm/api/azure/ha/metadata/regions |

### Curl example

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

### Input

(Optional) Query parameters:

- `fields`, string
- `subscriptionId`, string

- `cloudProviderAccountId`, string

**Output**

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

**JSON output example**


```
[
    {
        "displayName": "Central US",
        "name": "centralus",
        "vnets": null
    },
    {
        "displayName": "East US",
        "name": "eastus",
        "vnets": null
    },
    {
        "displayName": "East US 2",
        "name": "eastus2",
        "vnets": null
    },
    {
        "displayName": "West US 2",
        "name": "westus2",
        "vnets": null
    }
]
```


## Get Azure 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 Cloud Volumes ONTAP configurations information for a single node working environment.

#### 1. Get the permutations

| HTTP method | Path |
| --- | --- |
| GET | /occm/api/azure/vsa/metadata/permutations |

#### curl example

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

#### Input

There are several optional query parameters you can use:

- `region` string
- `version` string
- `license` string
- `instance_type` string
- `default_instance_type` string
- `feature` string
- `latest_only` string
- `marketplace_version` string
- `marketplace_sku` string

#### Output

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

#### JSON output example


```
[
    {
        "ontapVersion": "ONTAP-9.9.0X5.T1.azure",
        "license": {
            "type": "azure-cot-explore-paygo",
            "name": "Cloud Volumes ONTAP Explore",
            "description": "Suitable for smaller capacity applications.
Supports up to 2 TB of underlying Azure 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": "Standard_DS3_v2",
        "region": {
            "name": "East US 2",
            "code": "eastus2",
            "location": "Virginia",
            "s3Region": null
        },
        "defaultInstance": true,
        "features": [
            "four-nics",
            "no-sidl"
        ],
        "upgradeableFrom": [
            "9.8",
            "9.9"
        ]
    },
    {
        "ontapVersion": "ONTAP-9.9.0X5.T1.azure",
        "license": {
            "type": "azure-cot-explore-paygo",
            "name": "Cloud Volumes ONTAP Explore",
            "description": "Suitable for smaller capacity applications.
Supports up to 2 TB of underlying Azure 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": "Standard_DS3_v2",
        "region": {
            "name": "East US 2",
            "code": "eastus2",
            "location": "Virginia",
            "s3Region": null
        },
```

```
        "defaultInstance": true,
        "features": [
            "four-nics",
            "no-sidl"
        ],
        "upgradeableFrom": [
            "9.8",
            "9.9"
        ]
    }
]
```

### Get permutations for high availability pair

You can use this workflow to retrieve the Cloud Volumes ONTAP configurations information for an HA working environment.

#### 1. Get the permutations

| HTTP method | Path |
| --- | --- |
| GET | /occm/api/azure/ha/metadata/permutations |

#### curl example

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

#### Input

There are several optional query parameters you can use:

- `region` string
- `version` string
- `license` string
- `instance_type` string
- `default_instance_type` string
- `feature` string
- `latest_only` string
- `marketplace_version` string
- `marketplace_sku` string

### Output

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

### JSON output example


```
[
    {
        "ontapVersion": "ONTAP-9.9.0X5.T1.azureha",
        "license": {
            "type": "azure-ha-cot-standard-paygo",
            "name": "Cloud Volumes ONTAP Standard",
            "description": "Flexible performance and larger capacity for a
wider range of applications. Supports up to 10 TB of underlying Azure
storage.",
            "subName": "",
            "subDescription": "Supports tiering to object storage of
replicated volumes and snapshots.",
            "capacity_limit": "10TB",
            "platformLicenseRequired": false,
            "default": true,
            "capacityLimit": {
                "size": 10.0,
                "unit": "TB"
            }
        },
        "instanceType": "Standard_DS4_v2",
        "region": {
            "name": "Southeast Asia",
            "code": "southeastasia",
            "location": "Singapore",
            "s3Region": null
        },
        "defaultInstance": true,
        "features": [],
        "upgradeableFrom": [
            "9.8",
            "9.9"
        ]
    },
    {
        "ontapVersion": "ONTAP-9.9.0X5.T1.azureha",
        "license": {
            "type": "azure-ha-cot-standard-paygo",
            "name": "Cloud Volumes ONTAP Standard",
            "description": "Flexible performance and larger capacity for a
wider range of applications. Supports up to 10 TB of underlying Azure
storage.",
```

```
            "subName": "",
            "subDescription": "Supports tiering to object storage of
replicated volumes and snapshots.",
            "capacity_limit": "10TB",
            "platformLicenseRequired": false,
            "default": true,
            "capacityLimit": {
                "size": 10.0,
                "unit": "TB"
            }
        },
        "instanceType": "Standard_DS4_v2",
        "region": {
            "name": "Southeast Asia",
            "code": "southeastasia",
            "location": "Singapore",
            "s3Region": null
        },
        "defaultInstance": true,
        "features": [],
        "upgradeableFrom": [
            "9.8",
            "9.9"
        ]
    }
]
```


## Get Azure storage account types

You can retrieve the supported Azure storage account types.

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

- Single Node
- HA pair

### Get Azure storage account types for single node

You can perform this workflow to retrieve the Azure storage account types for a single node working environment.

#### 1. Get the storage account types

| HTTP method | Path |
|---|---|
| GET | /occm/api/azure/vsa/metadata/storage-account-types |

**curl example**

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/azure/vsa/metadata/storage
-account-types' --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 Azure storage account types.

**JSON output example**


```
[{
        "diskType": "Premium",
        "availabilityTypes": ["Premium_LRS"],
        "sizes": [{
                "size": {
                    "size": 500.0,
                    "unit": "GB"
                },
                "description": "",
                "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 Capacity Based Charging", "Cloud Volumes ONTAP
Capacity Based Charging", "Cloud Volumes ONTAP Explore", "Cloud Volumes
ONTAP Standard", "Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP
BYOL", "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
            }, {
                "size": {
                    "size": 1.0,
                    "unit": "TB"
                },
                "description": "",
                "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 Capacity Based Charging", "Cloud Volumes ONTAP
Capacity Based Charging", "Cloud Volumes ONTAP Explore", "Cloud Volumes
ONTAP Standard", "Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP
BYOL", "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": true
            }, {
                "size": {
                    "size": 2.0,
                    "unit": "TB"
                },
                "description": "",
                "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 Capacity Based Charging", "Cloud Volumes ONTAP
Capacity Based Charging", "Cloud Volumes ONTAP Explore", "Cloud Volumes
ONTAP Standard", "Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP
BYOL", "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
            }, {
                "size": {
                    "size": 4.0,
                    "unit": "TB"
                },
                "description": "",
                "supportedOccmLicenses": ["Standard (hourly)", "Standard
(BYOL)", "Cloud Volumes ONTAP Standard", "Cloud Volumes ONTAP Premium",
"Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Standard", "Cloud Volumes
ONTAP Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Capacity
Based Charging", "Cloud Volumes ONTAP Capacity Based Charging", "Cloud
Volumes ONTAP Standard", "Cloud Volumes ONTAP Premium", "Cloud Volumes
ONTAP BYOL", "Cloud Volumes ONTAP Standard", "Cloud Volumes ONTAP
Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Standard",
"Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes
```

```
ONTAP Standard", "Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP
BYOL"],
                "isDefault": false
            }, {
                "size": {
                    "size": 8.0,
                    "unit": "TB"
                },
                "description": "",
                "supportedOccmLicenses": ["Standard (hourly)", "Standard
(BYOL)", "Cloud Volumes ONTAP Standard", "Cloud Volumes ONTAP Premium",
"Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Standard", "Cloud Volumes
ONTAP Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Capacity
Based Charging", "Cloud Volumes ONTAP Capacity Based Charging", "Cloud
Volumes ONTAP Standard", "Cloud Volumes ONTAP Premium", "Cloud Volumes
ONTAP BYOL", "Cloud Volumes ONTAP Standard", "Cloud Volumes ONTAP
Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Standard",
"Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes
ONTAP Standard", "Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP
BYOL"],
                "isDefault": false
            }, {
                "size": {
                    "size": 16.0,
                    "unit": "TB"
                },
                "description": "",
                "supportedOccmLicenses": ["Standard (BYOL)", "Cloud
Volumes ONTAP Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP
Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Capacity Based
Charging", "Cloud Volumes ONTAP Capacity Based Charging", "Cloud Volumes
ONTAP Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Premium",
"Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Premium", "Cloud Volumes
ONTAP BYOL", "Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP BYOL"],
                "isDefault": false
            }, {
                "size": {
                    "size": 32.0,
                    "unit": "TB"
                },
                "description": "",
                "supportedOccmLicenses": ["Standard (BYOL)", "Cloud
Volumes ONTAP Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP
Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Capacity Based
Charging", "Cloud Volumes ONTAP Capacity Based Charging", "Cloud Volumes
ONTAP Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Premium",
```

```
"Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Premium", "Cloud Volumes
ONTAP BYOL", "Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP BYOL"],
                "isDefault": false
            }
        ]
    }, {
        "diskType": "Standard",
        "availabilityTypes": ["Standard_LRS"],
        "sizes": [{
                "size": {
                    "size": 100.0,
                    "unit": "GB"
                },
                "description": "",
                "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 Capacity Based Charging", "Cloud Volumes ONTAP
Capacity Based Charging", "Cloud Volumes ONTAP Explore", "Cloud Volumes
ONTAP Standard", "Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP
BYOL", "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
            }, {
                "size": {
                    "size": 500.0,
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```
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```

```
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]
```


### Get Azure storage account types for high availability pair

You can perform this workflow to retrieve the Azure storage account types for an HA working environment.

#### 1. Get the storage account types

| HTTP method | Path |
|---|---|
| GET | /occm/api/azure/ha/metadata/storage-account-types |

#### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/azure/ha/metadata/storage-
account-types' --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 Azure storage account types.

**JSON output example**


```
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BYOL", "Cloud Volumes ONTAP Explore", "Cloud Volumes ONTAP Standard",
"Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP BYOL"],
                "isDefault": false
            }, {
                "size": {
                    "size": 4.0,
                    "unit": "TB"
                },
                "description": "",
                "supportedOccmLicenses": ["Standard (hourly)", "Standard
(BYOL)", "Cloud Volumes ONTAP Standard", "Cloud Volumes ONTAP Premium",
"Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Standard", "Cloud Volumes
ONTAP Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Capacity
Based Charging", "Cloud Volumes ONTAP Capacity Based Charging", "Cloud
```

```
Volumes ONTAP Standard", "Cloud Volumes ONTAP Premium", "Cloud Volumes
ONTAP BYOL", "Cloud Volumes ONTAP Standard", "Cloud Volumes ONTAP
Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Standard",
"Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes
ONTAP Standard", "Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP
BYOL"],
                "isDefault": false
            }, {
                "size": {
                    "size": 8.0,
                    "unit": "TB"
                },
                "description": "",
                "supportedOccmLicenses": ["Standard (hourly)", "Standard
(BYOL)", "Cloud Volumes ONTAP Standard", "Cloud Volumes ONTAP Premium",
"Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Standard", "Cloud Volumes
ONTAP Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Capacity
Based Charging", "Cloud Volumes ONTAP Capacity Based Charging", "Cloud
Volumes ONTAP Standard", "Cloud Volumes ONTAP Premium", "Cloud Volumes
ONTAP BYOL", "Cloud Volumes ONTAP Standard", "Cloud Volumes ONTAP
Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Standard",
"Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes
ONTAP Standard", "Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP
BYOL"],
                "isDefault": false
            }, {
                "size": {
                    "size": 16.0,
                    "unit": "TB"
                },
                "description": "",
                "supportedOccmLicenses": ["Standard (BYOL)", "Cloud
Volumes ONTAP Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP
Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Capacity Based
Charging", "Cloud Volumes ONTAP Capacity Based Charging", "Cloud Volumes
ONTAP Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Premium",
"Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Premium", "Cloud Volumes
ONTAP BYOL", "Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP BYOL"],
                "isDefault": false
            }, {
                "size": {
                    "size": 32.0,
                    "unit": "TB"
                },
                "description": "",
                "supportedOccmLicenses": ["Standard (BYOL)", "Cloud
```

```
Volumes ONTAP Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP
Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Capacity Based
Charging", "Cloud Volumes ONTAP Capacity Based Charging", "Cloud Volumes
ONTAP Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Premium",
"Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Premium", "Cloud Volumes
ONTAP BYOL", "Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP BYOL"],
                "isDefault": false
            }
        ]
    }, {
        "diskType": "StandardSSD",
        "availabilityTypes": ["StandardSSD_LRS"],
        "sizes": [{
                "size": {
                    "size": 100.0,
                    "unit": "GB"
                },
                "description": "",
                "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 Capacity Based Charging", "Cloud Volumes ONTAP
Capacity Based Charging", "Cloud Volumes ONTAP Explore", "Cloud Volumes
ONTAP Standard", "Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP
BYOL", "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
            }, {
                "size": {
                    "size": 500.0,
                    "unit": "GB"
                },
                "description": "",
                "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 Capacity Based Charging", "Cloud Volumes ONTAP
Capacity Based Charging", "Cloud Volumes ONTAP Explore", "Cloud Volumes
ONTAP Standard", "Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP
```

```
BYOL", "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
            }, {
                "size": {
                    "size": 1.0,
                    "unit": "TB"
                },
                "description": "",
                "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 Capacity Based Charging", "Cloud Volumes ONTAP
Capacity Based Charging", "Cloud Volumes ONTAP Explore", "Cloud Volumes
ONTAP Standard", "Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP
BYOL", "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": true
            }, {
                "size": {
                    "size": 2.0,
                    "unit": "TB"
                },
                "description": "",
                "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 Capacity Based Charging", "Cloud Volumes ONTAP
Capacity Based Charging", "Cloud Volumes ONTAP Explore", "Cloud Volumes
ONTAP Standard", "Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP
BYOL", "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
```

```
            }, {
                "size": {
                    "size": 4.0,
                    "unit": "TB"
                },
                "description": "",
                "supportedOccmLicenses": ["Standard (hourly)", "Standard
(BYOL)", "Cloud Volumes ONTAP Standard", "Cloud Volumes ONTAP Premium",
"Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Standard", "Cloud Volumes
ONTAP Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Capacity
Based Charging", "Cloud Volumes ONTAP Capacity Based Charging", "Cloud
Volumes ONTAP Standard", "Cloud Volumes ONTAP Premium", "Cloud Volumes
ONTAP BYOL", "Cloud Volumes ONTAP Standard", "Cloud Volumes ONTAP
Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Standard",
"Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes
ONTAP Standard", "Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP
BYOL"],
                "isDefault": false
            }, {
                "size": {
                    "size": 8.0,
                    "unit": "TB"
                },
                "description": "",
                "supportedOccmLicenses": ["Standard (hourly)", "Standard
(BYOL)", "Cloud Volumes ONTAP Standard", "Cloud Volumes ONTAP Premium",
"Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Standard", "Cloud Volumes
ONTAP Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Capacity
Based Charging", "Cloud Volumes ONTAP Capacity Based Charging", "Cloud
Volumes ONTAP Standard", "Cloud Volumes ONTAP Premium", "Cloud Volumes
ONTAP BYOL", "Cloud Volumes ONTAP Standard", "Cloud Volumes ONTAP
Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Standard",
"Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes
ONTAP Standard", "Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP
BYOL"],
                "isDefault": false
            }, {
                "size": {
                    "size": 16.0,
                    "unit": "TB"
                },
                "description": "",
                "supportedOccmLicenses": ["Standard (BYOL)", "Cloud
Volumes ONTAP Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP
Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Capacity Based
Charging", "Cloud Volumes ONTAP Capacity Based Charging", "Cloud Volumes
```

```
ONTAP Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Premium",
"Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Premium", "Cloud Volumes
ONTAP BYOL", "Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP BYOL"],
                "isDefault": false
            }, {
                "size": {
                    "size": 32.0,
                    "unit": "TB"
                },
                "description": "",
                "supportedOccmLicenses": ["Standard (BYOL)", "Cloud
Volumes ONTAP Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP
Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Capacity Based
Charging", "Cloud Volumes ONTAP Capacity Based Charging", "Cloud Volumes
ONTAP Premium", "Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Premium",
"Cloud Volumes ONTAP BYOL", "Cloud Volumes ONTAP Premium", "Cloud Volumes
ONTAP BYOL", "Cloud Volumes ONTAP Premium", "Cloud Volumes ONTAP BYOL"],
                "isDefault": false
            }
        ]
    }
]
```


## Get Azure VNets

You can perform this workflow to retrieve the network extended information.

Ensure that you've the Azure subscription ID. You can easily obtain the ID from the Azure portal.

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

- Single Node
- HA pair

### Get Azure VNets for single node

You can perform this workflow to retrieve the Azure VNets for a single node working environment.

#### 1. Get the VNets

| HTTP method | Path |
|---|---|
| GET | /occm/api/azure/vsa/metadata/vnets |

#### curl example

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

**Input**

Query parameters:

- <REGION> `region` string
- <SUBSCRIPTION_ID> `subscriptionId` string
- (Optional) `cloudProviderAccountId` string

**Output**

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

**JSON output example**


```
{
    "virtualNetworks": [
        {
            "name": "Vnet1",
            "id":
"/subscriptions/xxxxxxxx00000000000000/resourceGroups/occm_group_eastus2/p
roviders/Microsoft.Network/virtualNetworks/Vnet1",
            "cidrs": [
                {
                    "cidr": "10.0.0.0/16",
                    "subnets": [
                        {
                            "id":
"/subscriptions/xxxxxxxx00000000000000/resourceGroups/occm_group_eastus2/p
roviders/Microsoft.Network/virtualNetworks/Vnet1/subnets/Subnet1",
                            "cidr": "10.0.0.0/24",
                            "name": "Subnet1",
                            "availableIps": 250,
                            "minimumRequiredIps": 6
                        },
                        {
                            "id":
"/subscriptions/xxxxxxxx00000000000000/resourceGroups/occm_group_eastus2/p
roviders/Microsoft.Network/virtualNetworks/Vnet1/subnets/Subnet2",
                            "cidr": "10.0.1.0/24",
                            "name": "Subnet2",
                            "availableIps": 251,
```

```
                            "minimumRequiredIps": 6
                        },
                        {
                            "id":
"/subscriptions/xxxxxxxx00000000000000/resourceGroups/occm_group_eastus2/p
roviders/Microsoft.Network/virtualNetworks/Vnet1/subnets/ProxySubnet",
                            "cidr": "10.0.2.0/24",
                            "name": "ProxySubnet",
                            "availableIps": 245,
                            "minimumRequiredIps": 6
                        }
                    ]
                }
            ],
            "resourceGroup": "occm_group_eastus2",
            "tags": []
        },
        {
            "name": "Vnet2",
            "id":
"/subscriptions/xxxxxxxx00000000000000/resourceGroups/occm_group_eastus2/p
roviders/Microsoft.Network/virtualNetworks/Vnet2",
            "cidrs": [
                {
                    "cidr": "10.1.0.0/16",
                    "subnets": [
                        {
                            "id":
"/subscriptions/xxxxxxxx00000000000000/resourceGroups/occm_group_eastus2/p
roviders/Microsoft.Network/virtualNetworks/Vnet2/subnets/Subnet1",
                            "cidr": "10.1.0.0/24",
                            "name": "Subnet1",
                            "availableIps": 251,
                            "minimumRequiredIps": 6
                        },
                        {
                            "id":
"/subscriptions/xxxxxxxx00000000000000/resourceGroups/occm_group_eastus2/p
roviders/Microsoft.Network/virtualNetworks/Vnet2/subnets/Subnet2",
                            "cidr": "10.1.1.0/24",
                            "name": "Subnet2",
                            "availableIps": 251,
                            "minimumRequiredIps": 6
                        },
                        {
                            "id":
```

```
"/subscriptions/xxxxxxxx00000000000000/resourceGroups/occm_group_eastus2/providers/Microsoft.Network/virtualNetworks/Vnet2/subnets/ProxySubnet",
                            "cidr": "10.1.2.0/24",
                            "name": "ProxySubnet",
                            "availableIps": 251,
                            "minimumRequiredIps": 6
                        }
                    ]
                }
            ],
            "resourceGroup": "occm_group_eastus2",
            "tags": []
        }
    ],
    "securityGroups": [
        {
            "id":
"/subscriptions/xxxxxxxx00000000000000/resourceGroups/occm_group_eastus2/providers/Microsoft.Network/networkSecurityGroups/OCCM-SG-467",
            "name": "OCCM-SG-467",
            "resourceGroup": "occm_group_eastus2"
        },
        {
            "id":
"/subscriptions/xxxxxxxx00000000000000/resourceGroups/occm_group_eastus2/providers/Microsoft.Network/networkSecurityGroups/OCCM-SG-491",
            "name": "OCCM-SG-491",
            "resourceGroup": "occm_group_eastus2"
        },
        {
            "id":
"/subscriptions/xxxxxxxx00000000000000/resourceGroups/occm_group_eastus2/providers/Microsoft.Network/networkSecurityGroups/OCCM-SG-589",
            "name": "OCCM-SG-589",
            "resourceGroup": "occm_group_eastus2"
        }
    ]
}
```


### Get Azure VNets for high availability pair

You can perform this workflow to retrieve the Azure network extended information for an HA working environment.

#### 1. Get the VNets

| HTTP method | Path |
| --- | --- |
| GET | /occm/api/azure/ha/metadata/vnets |

### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/azure/ha/metadata/vnets?re
gion=<REGION>&subscriptionId=<SUBSCRIPTION_ID>' --header 'x-agent-id:
<AGENT_ID>' --header 'Authorization: Bearer <ACCESS_TOKEN>' --header
'Content-Type: application/json'
```

### Input

Query parameters:

- <REGION> `region` string
- <SUBSCRIPTION_ID> `subscriptionId` string
- (Optional) `cloudProviderAccountId` string

### Output

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

### JSON output example


```
{
    "virtualNetworks": [
        {
            "name": "Vnet1",
            "id":
"/subscriptions/xxxxxxxx00000000000000/resourceGroups/occm_group_eastus2/p
roviders/Microsoft.Network/virtualNetworks/Vnet1",
            "cidrs": [
                {
                    "cidr": "10.0.0.0/16",
                    "subnets": [
                        {
                            "id":
"/subscriptions/xxxxxxxx00000000000000/resourceGroups/occm_group_eastus2/p
roviders/Microsoft.Network/virtualNetworks/Vnet1/subnets/Subnet1",
                            "cidr": "10.0.0.0/24",
                            "name": "Subnet1",
                            "availableIps": 250,
                            "minimumRequiredIps": 6
                        },
                        {
                            "id":
"/subscriptions/xxxxxxxx00000000000000/resourceGroups/occm_group_eastus2/p
```

```
roviders/Microsoft.Network/virtualNetworks/Vnet1/subnets/Subnet2",
                            "cidr": "10.0.1.0/24",
                            "name": "Subnet2",
                            "availableIps": 251,
                            "minimumRequiredIps": 6
                        },
                        {
                            "id":
"/subscriptions/xxxxxxxx00000000000000/resourceGroups/occm_group_eastus2/p
roviders/Microsoft.Network/virtualNetworks/Vnet1/subnets/ProxySubnet",
                            "cidr": "10.0.2.0/24",
                            "name": "ProxySubnet",
                            "availableIps": 245,
                            "minimumRequiredIps": 6
                        }
                    ]
                }
            ],
            "resourceGroup": "occm_group_eastus2",
            "tags": []
        },
        {
            "name": "Vnet2",
            "id":
"/subscriptions/xxxxxxxx00000000000000/resourceGroups/occm_group_eastus2/p
roviders/Microsoft.Network/virtualNetworks/Vnet2",
            "cidrs": [
                {
                    "cidr": "10.1.0.0/16",
                    "subnets": [
                        {
                            "id":
"/subscriptions/dxxxxxxxx000000000000008/resourceGroups/occm_group_eastus2
/providers/Microsoft.Network/virtualNetworks/Vnet2/subnets/Subnet1",
                            "cidr": "10.1.0.0/24",
                            "name": "Subnet1",
                            "availableIps": 251,
                            "minimumRequiredIps": 6
                        },
                        {
                            "id":
"/subscriptions/xxxxxxxx00000000000000/resourceGroups/occm_group_eastus2/p
roviders/Microsoft.Network/virtualNetworks/Vnet2/subnets/Subnet2",
                            "cidr": "10.1.1.0/24",
                            "name": "Subnet2",
                            "availableIps": 251,
```

```
                            "minimumRequiredIps": 6
                        },
                        {
                            "id":
"/subscriptions/xxxxxxxx00000000000000/resourceGroups/occm_group_eastus2/p
roviders/Microsoft.Network/virtualNetworks/Vnet2/subnets/ProxySubnet",
                            "cidr": "10.1.2.0/24",
                            "name": "ProxySubnet",
                            "availableIps": 251,
                            "minimumRequiredIps": 6
                        }
                    ]
                }
            ],
            "resourceGroup": "occm_group_eastus2",
            "tags": []
        }
    ],
    "securityGroups": [
        {
            "id":
"/subscriptions/dxxxxxxxx00000000000000/resourceGroups/occm_group_eastus2/
providers/Microsoft.Network/networkSecurityGroups/OCCM-SG-467",
            "name": "OCCM-SG-467",
            "resourceGroup": "occm_group_eastus2"
        },
        {
            "id":
"/subscriptions/xxxxxxxx00000000000000/resourceGroups/occm_group_eastus2/p
roviders/Microsoft.Network/networkSecurityGroups/OCCM-SG-491",
            "name": "OCCM-SG-491",
            "resourceGroup": "occm_group_eastus2"
        },
        {
            "id":
"/subscriptions/xxxxxxxx00000000000000/resourceGroups/occm_group_eastus2/p
roviders/Microsoft.Network/networkSecurityGroups/OCCM-SG-589",
            "name": "OCCM-SG-589",
            "resourceGroup": "occm_group_eastus2"
        }
    ]
}
```

## Get Azure availability zones

You can perform this workflow to retrieve the Azure availability zones by region.

Ensure that you've the Azure subscription ID. You can easily obtain the ID from the Azure portal.

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

- Single Node
- HA pair

### Get availability zones for single node

You can use this workflow to retrieve the availability zones by region for a single node working environment.

#### 1. Get the availability zones

| HTTP method | Path |
|---|---|
| GET | /occm/api/azure/vsa/metadata/availability-zones |

**curl example**

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

**Input**

Query parameters:

- <REGION> `region` string
- (Optional) <SUBSCRIPTION_ID> `subscriptionId` string
- (Optional) `cloudProviderAccountId` string

**Output**

The JSON output example includes the list of Azure availability zones.

**JSON output example**

```
{
    "region": "eastus2",
    "zones": [
        1,
        3,
        2
    ]
}
```


### Get availability zones for high availability pair

You can use this workflow to retrieve the availability zones by region for a high availability pair working environment.

#### 1. Get the availability zones

| HTTP method | Path |
| --- | --- |
| GET | /occm/api/azure/ha/metadata/availability-zones |

#### curl example

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

#### Input

Query parameters:

- <REGION> `region` string
- (Optional) <SUBSCRIPTION_ID> `subscriptionId` string
- (Optional) `cloudProviderAccountId` string

#### Output

The JSON output example includes the list of Azure availability zones.

#### JSON output example

```
{
    "region": "eastus2",
    "zones": [
        1,
        3,
        2
    ]
}
```


### Get availability zones for high availability pair

You can use this workflow to retrieve the availability zones by region for a high availability pair working environment.

#### 1. Get the availability zones

| HTTP method | Path |
| --- | --- |
| GET | /occm/api/azure/ha/metadata/availability-zones |

#### curl example

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

#### Input

Query parameters:

- <REGION> `region` string
- (Optional) <SUBSCRIPTION_ID> `subscriptionId` string
- (Optional) `cloudProviderAccountId` string

#### Output

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

#### JSON output example

```
{
    "region": "eastus2",
    "zones": [
        1,
        3,
        2
    ]
}
```

## Get Azure packages

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

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 working environment.

#### 1. Get the packages

| HTTP method | Path |
|---|---|
| GET | /occm/api/azure/vsa/metadata/packages |

**curl example**

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/azure/vsa/metadata/package
s' --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 packages information.

**JSON output example**

```
Output example  [
    {
        "name": "azure_poc",
        "displayName": "POC and small workloads",
        "description": "No description yet",
```

```
        "licenseType": "azure-cot-explore-paygo",
        "instanceTypeMapping": [
            {
                "region": "default",
                "instanceType": "Standard_DS3_v2"
            }
        ],
        "diskType": "Premium_LRS",
        "diskSize": {
            "size": 100.0,
            "unit": "GB"
        },
        "capacityTier": null,
        "instanceTenancy": null,
        "writingSpeedState": "NORMAL"
    },
    {
        "name": "azure_standard",
        "displayName": "Database and application data production
workloads",
        "description": "No description yet",
        "licenseType": "azure-cot-standard-paygo",
        "instanceTypeMapping": [
            {
                "region": "default",
                "instanceType": "Standard_DS4_v2"
            }
        ],
        "diskType": "Premium_LRS",
        "diskSize": {
            "size": 100.0,
            "unit": "GB"
        },
        "capacityTier": null,
        "instanceTenancy": null,
        "writingSpeedState": "NORMAL"
    },
    {
        "name": "azure_dr",
        "displayName": "Cost effective DR",
        "description": "No description yet",
        "licenseType": "azure-cot-standard-paygo",
        "instanceTypeMapping": [
            {
                "region": "default",
                "instanceType": "Standard_DS4_v2"
```

```
            }
        ],
        "diskType": "Standard_LRS",
        "diskSize": {
            "size": 100.0,
            "unit": "GB"
        },
        "capacityTier": null,
        "instanceTenancy": null,
        "writingSpeedState": "NORMAL"
    },
    {
        "name": "azure_fastest",
        "displayName": "Highest performance production workloads",
        "description": "No description yet",
        "licenseType": "azure-cot-premium-paygo",
        "instanceTypeMapping": [
            {
                "region": "default",
                "instanceType": "Standard_DS5_v2"
            }
        ],
        "diskType": "Premium_LRS",
        "diskSize": {
            "size": 100.0,
            "unit": "GB"
        },
        "capacityTier": null,
        "instanceTenancy": null,
        "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/azure/ha/metadata/packages |

#### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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 packages information.

**JSON output example**


```
Output example  [
    {
        "name": "azure_poc",
        "displayName": "POC and small workloads",
        "description": "No description yet",
        "licenseType": "azure-cot-explore-paygo",
        "instanceTypeMapping": [
            {
                "region": "default",
                "instanceType": "Standard_DS3_v2"
            }
        ],
        "diskType": "Premium_LRS",
        "diskSize": {
            "size": 100.0,
            "unit": "GB"
        },
        "capacityTier": null,
        "instanceTenancy": null,
        "writingSpeedState": "NORMAL"
    },
    {
        "name": "azure_standard",
        "displayName": "Database and application data production
workloads",
        "description": "No description yet",
        "licenseType": "azure-cot-standard-paygo",
        "instanceTypeMapping": [
            {
                "region": "default",
                "instanceType": "Standard_DS4_v2"
            }
        ],
```

```
        "diskType": "Premium_LRS",
        "diskSize": {
            "size": 100.0,
            "unit": "GB"
        },
        "capacityTier": null,
        "instanceTenancy": null,
        "writingSpeedState": "NORMAL"
    },
    {
        "name": "azure_dr",
        "displayName": "Cost effective DR",
        "description": "No description yet",
        "licenseType": "azure-cot-standard-paygo",
        "instanceTypeMapping": [
            {
                "region": "default",
                "instanceType": "Standard_DS4_v2"
            }
        ],
        "diskType": "Standard_LRS",
        "diskSize": {
            "size": 100.0,
            "unit": "GB"
        },
        "capacityTier": null,
        "instanceTenancy": null,
        "writingSpeedState": "NORMAL"
    },
    {
        "name": "azure_fastest",
        "displayName": "Highest performance production workloads",
        "description": "No description yet",
        "licenseType": "azure-cot-premium-paygo",
        "instanceTypeMapping": [
            {
                "region": "default",
                "instanceType": "Standard_DS5_v2"
            }
        ],
        "diskType": "Premium_LRS",
        "diskSize": {
            "size": 100.0,
            "unit": "GB"
        },
        "capacityTier": null,
```

```
        "instanceTenancy": null,
        "writingSpeedState": "NORMAL"
    }
]
```

### Get packages for high availability pair

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

#### 1. Get the packages

| HTTP method | Path |
|---|---|
| GET | /occm/api/azure/ha/metadata/packages |

#### curl example

```
curl --location --request GET
'https://cloudmanager.cloud.netapp.com/occm/api/azure/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 Azure storage account types.

#### JSON output example

```
Output example  [
    {
        "name": "azure_poc",
        "displayName": "POC and small workloads",
        "description": "No description yet",
        "licenseType": "azure-cot-explore-paygo",
        "instanceTypeMapping": [
            {
                "region": "default",
                "instanceType": "Standard_DS3_v2"
            }
        ],
        "diskType": "Premium_LRS",
        "diskSize": {
            "size": 100.0,
            "unit": "GB"
        },
        "capacityTier": null,
```

```
        "instanceTenancy": null,
        "writingSpeedState": "NORMAL"
    },
    {
        "name": "azure_standard",
        "displayName": "Database and application data production
workloads",
        "description": "No description yet",
        "licenseType": "azure-cot-standard-paygo",
        "instanceTypeMapping": [
            {
                "region": "default",
                "instanceType": "Standard_DS4_v2"
            }
        ],
        "diskType": "Premium_LRS",
        "diskSize": {
            "size": 100.0,
            "unit": "GB"
        },
        "capacityTier": null,
        "instanceTenancy": null,
        "writingSpeedState": "NORMAL"
    },
    {
        "name": "azure_dr",
        "displayName": "Cost effective DR",
        "description": "No description yet",
        "licenseType": "azure-cot-standard-paygo",
        "instanceTypeMapping": [
            {
                "region": "default",
                "instanceType": "Standard_DS4_v2"
            }
        ],
        "diskType": "Standard_LRS",
        "diskSize": {
            "size": 100.0,
            "unit": "GB"
        },
        "capacityTier": null,
        "instanceTenancy": null,
        "writingSpeedState": "NORMAL"
    },
    {
        "name": "azure_fastest",
```

```
        "displayName": "Highest performance production workloads",
        "description": "No description yet",
        "licenseType": "azure-cot-premium-paygo",
        "instanceTypeMapping": [
            {
                "region": "default",
                "instanceType": "Standard_DS5_v2"
            }
        ],
        "diskType": "Premium_LRS",
        "diskSize": {
            "size": 100.0,
            "unit": "GB"
        },
        "capacityTier": null,
        "instanceTenancy": null,
        "writingSpeedState": "NORMAL"
    }
]
```


# Miscellaneous

## Create Azure cloud provider account

You can use this workflow to create an Azure cloud provider account. An Azure cloud provider account holds Azure access keys required to perform actions in Azure.

#### Before you begin

You must have Azure credentials.

#### 1. Get the account

| HTTP method | Path |
|---|---|
| GET | /occm/api/accounts?providerType=AZURE |

#### curl example

```
curl --location --request POST
'https://cloudmanager.cloud.netapp.com/occm/api/accounts?providerType=AZUR
E' --header 'x-agent-id: <AGENT_ID>' --header 'Authorization: Bearer
<ACCESS_TOKEN>' --header 'Content-Type: application/json'
```

#### Input

Query parameter (Optional):

`providerType` string

### Output

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

### JSON output example


```
{
    "awsAccounts": [],
    "azureAccounts": [
        {
            "publicId": "ManagedServiceIdentity",
            "accountName": "Managed Service Identity",
            "accountType": "SERVICE_IDENTITY",
            "tenantId": "",
            "applicationId": "",
            "occmRole": "Azure",
            "vsaList": [
                {
                    "publicId": "VsaWorkingEnvironment-uFPaNkrv",
                    "name": "Azure123",
                    "workingEnvironmentType": "AZURE"
                }
            ]
        }
    ],
    "gcpStorageAccounts": [],
    "nssAccounts": []
}
```