



# Clusters

## Astra Automation

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# Table of Contents

- Clusters ..... 1
  - List the clusters ..... 1
  - Add a cluster using credentials ..... 4
  - List managed clusters ..... 6
  - Manage a cluster ..... 6

# Clusters

## List the clusters

You can list the available clusters in a specific cloud.

### 1. Select the cloud

Perform the workflow [List the clouds](#) and select the cloud containing the clusters.

### 2. List the clusters

Perform the following REST API call to list the clusters in a specific cloud.

HTTP method	Path
GET	/accounts/{account_id}/topology/v1/clouds/{cloud_id}/clusters

### Curl example: Return all data for all clusters

```
curl --location -i --request GET
'https://astra.netapp.io/accounts/<ACCOUNT_ID>/topology/v1/clouds/<CLOUD_ID>/clusters' --header 'Accept: */*' --header 'Authorization: Bearer
<API_TOKEN>'
```

### JSON output example

```
{
  "items": [
    {
      "type": "application/astra-cluster",
      "version": "1.1",
      "id": "7ce83fba-6aa1-4e0c-a194-26e714f5eb46",
      "name": "openshift-clstr-ol-07",
      "state": "running",
      "stateUnready": [],
      "managedState": "managed",
      "protectionState": "full",
      "protectionStateDetails": [],
      "restoreTargetSupported": "true",
      "snapshotSupported": "true",
      "managedStateUnready": [],
      "managedTimestamp": "2022-11-03T15:50:59Z",
      "inUse": "true",
      "clusterType": "openshift",
      "accHost": "true",
```

```
"clusterVersion": "1.23",
"clusterVersionString": "v1.23.12+6b34f32",
"namespaces": [
  "default",
  "kube-node-lease",
  "kube-public",
  "kube-system",
  "metallb-system",
  "mysql",
  "mysql-clone1",
  "mysql-clone2",
  "mysql-clone3",
  "mysql-clone4",
  "netapp-acc-operator",
  "netapp-monitoring",
  "openshift",
  "openshift-apiserver",
  "openshift-apiserver-operator",
  "openshift-authentication",
  "openshift-authentication-operator",
  "openshift-cloud-controller-manager",
  "openshift-cloud-controller-manager-operator",
  "openshift-cloud-credential-operator",
  "openshift-cloud-network-config-controller",
  "openshift-cluster-csi-drivers",
  "openshift-cluster-machine-approver",
  "openshift-cluster-node-tuning-operator",
  "openshift-cluster-samples-operator",
  "openshift-cluster-storage-operator",
  "openshift-cluster-version",
  "openshift-config",
  "openshift-config-managed",
  "openshift-config-operator",
  "openshift-console",
  "openshift-console-operator",
  "openshift-console-user-settings",
  "openshift-controller-manager",
  "openshift-controller-manager-operator",
  "openshift-dns",
  "openshift-dns-operator",
  "openshift-etcd",
  "openshift-etcd-operator",
  "openshift-host-network",
  "openshift-image-registry",
  "openshift-infra",
  "openshift-ingress",
```

```
"openshift-ingress-canary",
"openshift-ingress-operator",
"openshift-insights",
"openshift-kni-infra",
"openshift-kube-apiserver",
"openshift-kube-apiserver-operator",
"openshift-kube-controller-manager",
"openshift-kube-controller-manager-operator",
"openshift-kube-scheduler",
"openshift-kube-scheduler-operator",
"openshift-kube-storage-version-migrator",
"openshift-kube-storage-version-migrator-operator",
"openshift-machine-api",
"openshift-machine-config-operator",
"openshift-marketplace",
"openshift-monitoring",
"openshift-multus",
"openshift-network-diagnostics",
"openshift-network-operator",
"openshift-node",
"openshift-oauth-apiserver",
"openshift-openstack-infra",
"openshift-operator-lifecycle-manager",
"openshift-operators",
"openshift-ovirt-infra",
"openshift-sdn",
"openshift-service-ca",
"openshift-service-ca-operator",
"openshift-user-workload-monitoring",
"openshift-vsphere-infra",
"pcloud",
"postgreql",
"trident"
],
"defaultStorageClass": "4bacbb3c-0727-4f58-b13c-3a2a069baf89",
"cloudID": "4f1e1086-f415-4451-a051-c7299cd672ff",
"credentialID": "7ffd7354-b6c2-4efa-8e7b-cf64d5598463",
"isMultizonal": "false",
"tridentManagedStateAllowed": [
  "unmanaged"
],
"tridentVersion": "22.10.0",
"apiServiceID": "98df44dc-2baf-40d5-8826-e198b1b40909",
"metadata": {
  "labels": [
    {
```

```

        "name": "astra.netapp.io/labels/read-
only/cloudName",
        "value": "private"
    }
  ],
  "creationTimestamp": "2022-11-03T15:50:59Z",
  "modificationTimestamp": "2022-11-04T14:42:32Z",
  "createdBy": "00000000-0000-0000-0000-000000000000"
}
]
}

```

## Add a cluster using credentials

You can add a cluster so it will be available to be managed by Astra. Beginning with the Astra 22.11 release, you can add a cluster with both Astra Control Center and Astra Control Service.



Adding a cluster is not required when using a Kubernetes service from one of the major cloud providers (AKS, EKS, GKE).

### 1. Obtain the kubeconfig file

You need to obtain a copy of the **kubeconfig** file from your Kubernetes administrator or service.

### 2. Prepare the kubeconfig file

Before using the **kubeconfig** file, you should perform the following operations:

#### Convert file from YAML format to JSON

If you receive the kubeconfig file formatted as YAML, you need to convert it to JSON.

#### Encode JSON in base64

You must encode the JSON file in base64.

#### Example

Here is an example of converting the kubeconfig file from YAML to JSON and then encoding it in base64:

```
yq -o=json ~/.kube/config | base64
```

### 3. Select the cloud

Perform the workflow [List the clouds](#) and select the cloud where the cluster will be added.



The only cloud you can select is the **private** cloud.

#### 4. Create a credential

Perform the following REST API call to create a credential using the kubeconfig file.

HTTP method	Path
POST	/accounts/{account_id}/core/v1/credentials

#### JSON input example

```
{
  "type" : "application/astra-credential",
  "version" : "1.1",
  "name" : "Cloud One",
  "keyType" : "kubeconfig",
  "keyStore" : {
    "base64": encoded_kubeconfig
  },
  "valid" : "true"
}
```

#### Curl example

```
curl --location -i --request POST
'https://astra.netapp.io/accounts/<ACCOUNT_ID>/core/v1/credentials'
--header 'Accept: */*' --header 'Authorization: Bearer <API_TOKEN>' --data
@JSONinput
```

#### 5. Add the cluster

Perform the following REST API call to add the cluster to the cloud. The value of the `credentialID` input field is obtained from the REST API call in the previous step.

HTTP method	Path
POST	/accounts/{account_id}/topology/v1/clouds/{cloud_id}/clusters

#### JSON input example

```
{
  "type" : "application/astra-cluster",
  "version" : "1.1",
  "credentialID": credential_id
}
```

## Curl example

```
curl --location -i --request POST
'https://astra.netapp.io/accounts/<ACCOUNT_ID>/topology/v1/clouds/<CLOUD_ID>/clusters' --header 'Accept: */*' --header 'Authorization: Bearer <API_TOKEN>' --data @JSONinput
```

## List managed clusters

You can list the Kubernetes clusters currently managed by Astra.

### 1. List the managed clusters

Perform the following REST API call.

HTTP method	Path
GET	/accounts/{account_id}/topology/v1/managedClusters

### Curl example: Return all data for all clusters

```
curl --location -i --request GET
'https://astra.netapp.io/accounts/<ACCOUNT_ID>/topology/v1/managedClusters' --header 'Accept: */*' --header 'Authorization: Bearer <API_TOKEN>'
```

## Manage a cluster

You can manage a Kubernetes cluster so that data protection can be performed.

### 1. Select the cluster to manage

Perform the workflow [List clusters](#) and select the desired cluster. The property `managedState` of the cluster must be `unmanaged`.

### 2. Optionally select the storage class

Optionally perform the workflow [List storage classes](#) and select the desired storage class.



If you don't provide a storage class on the call to manage the cluster, your default storage class will be used.

### 3. Manage the cluster

Perform the following REST API call to manage the cluster.



HTTP method	Path
POST	/accounts/{account_id}/topology/v1/managedClusters

### JSON input example

```
{  
  "type": "application/astra-managedCluster",  
  "version": "1.0",  
  "id": "d0fdf455-4330-476d-bb5d-4d109714e07d"  
}
```

### Curl example

```
curl --location -i --request POST  
'https://astra.netapp.io/accounts/<ACCOUNT_ID>/topology/v1/managedClusters'  
' --header 'Accept: */*' --header 'Authorization: Bearer <API_TOKEN>'  
--data @JSONinput
```

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