# Clusters

## Astra Automation

NetApp
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# 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_I
D>/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 **kubconfig** 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. For example:

```
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_I
D>/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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