

# Programming with VMware Cloud Director Service API

VMware Cloud Director service

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<https://docs.vmware.com/>

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# Programming with VMware Cloud Director Service API

*Programming with VMware Cloud Director service API* provides information about how to use the VMware Cloud Director service API to manage and monitor the existing environment and the deployed VMware Cloud Director instances.

VMware provides many different APIs and SDKs for applications and goals. This documentation provides information about the VMware Cloud Director service API for developers who are interested in automating tasks through RESTful clients.

## Intended Audience

This information is intended for software developers who have knowledge in the VMware Cloud Services Platform, are familiar with Representational State Transfer (REST) and RESTful programming convention, and other widely deployed technologies such as JSON, HTTP, and the Windows or Linux operating systems.

# About VMware Cloud Director Service APIs

# 1

With the VMware Cloud Director service APIs you can automate different tasks and retrieve information about the existing environments and organizations. You can also retrieve information about the deployed VMware Cloud Director instances, you can perform operations related to the VMware Cloud Director tasks, and you can download a support bundle.

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**Important** All IDs that you use for the VMware Cloud Director service API management tasks are Uniform Resource Names (URNs).

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# VMware Cloud Director Service Roles

# 2

VMware Cloud Director service has two roles that allow you to perform different tasks on the existing environments, organizations, VMware Cloud Director instances, tasks, and so on.

## VMware Cloud Director service API Roles

- **Provider administrator**
- **Provider support**

A particular provider is associated with a VMware Cloud services platform organization. A VMware Cloud services platform organization can view only the environments that are assigned to them. If there are existing environments, which are not assigned to a particular VMware Cloud services platform organization, the provider has no access to them.

# How Do I Generate an API Token

## 3

You use API tokens to authenticate yourself when you make authorized API connections. You also need an API token when you associate a VMware Cloud Director instance with a VMware Cloud on AWS SDDC.

You use a combination of an API token and an access token for calls to the VMware Cloud Director service API.

An API token has a time-to-live (TTL) period, which you define when you generate the API token. After this time, if you want to continue using the APIs that rely on a token, you must regenerate the token.

After generating an API token, save the token credentials to a safe place.

You can use the API token to obtain access tokens. You can use an access token only for a single operation and within a short period. After the access token expires, you can use the API token credentials to obtain a new access token.

If you feel that the API token has been compromised, you can revoke the token to prevent any unauthorized access. When you revoke an API token, you lose the ability to perform API calls. However, access tokens obtained from the revoked API token are still valid until their expiration time (30 minutes). You generate a new API token to renew the authorization.

You can regenerate a token at any time. If you regenerate a token, you revoke all instances of the previous token. If you have used the API token, for example in one of your scripts, you must replace it with the newly generated API token.

### Procedure

- 1 Log in to the VMware Cloud Director service console at <https://console.cloud.vmware.com>.
- 2 Click your user name and click **My Account**.
- 3 On the **My Account** page, click the **API Tokens** tab.
- 4 Click **Generate a new API token**.
- 5 Enter a meaningful name of the token and in **Token TTL** define for how long the token is valid.

**6** Define the scopes for the token.

Scopes provide a way to implement control over what areas in an organization your token can access - specifically which role in an organization, what services, and the level of permissions. If necessary, you can select **All Roles** and give your token access to all the organization and service roles.

---

**Note** If you use the API token to associate a VMware Cloud Director instance with a VMware Cloud on AWS SDDC, its scope must contain the **Administrator** and **NSX Cloud Admin** service roles, as well as the **Developer** or the **Organization Owner** organization role.

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**7** To get information about the users that authorize your app, select **Open ID**.**8** Click **Generate**.

A **Token Generated** pop-up window appears. You can copy, download, or print the token.

**9** Save the token credentials to a safe place, so that you can retrieve them and use them later.

For security reasons, after you generate the token, the **API Tokens** page only displays the name of the token, and not the token credentials. You can no longer reuse the token by copying the credentials from this page.

**10** Click **Continue**.

## Example: Using an API Token to Interact with VMware Cloud Director Service API

**1** Generate an API token.**2** Exchange the API token for an access token by performing a POST request to `https://console.cloud.vmware.com/csp/gateway/am/api/auth/api-tokens/authorize` with `refresh_token={your-api-token-value}` in the body of the request.

For example:

```
curl --request POST \
--url https://console.cloud.vmware.com/csp/gateway/am/api/auth/api-tokens/authorize \
--header 'content-type: application/x-www-form-urlencoded' \
--data refresh_token=<your-api-token-value>
```

This request returns a response, such as:

```
{
  "id_token": "eyJhbGciOiJSUzUuOSI6eyJraXkiOiJ1b3RmZG9eYk0KMA",
  "token_type": "bearer",
  "expires_in": 1799,
  "scope": "ALL_PERMISSIONS openid group_ids group_names",
  "access_token": "eyJhbGciOiJSUzUuOSI6eyJraXkiOiJ1b3RmZG9eYk0KMA",
  "refresh_token": "B4STbh2fYFmjI9ABCv.....XeRniDi04cBJjF82sWWprZfm70LHn"
}
```





# Managing My VMware Cloud Director Service Organization

# 4

By using the VMware Cloud services API, you can fetch information about the organization associated with your token.

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**Note** The first time you log in to the VMware Cloud Director service API, you must run a GET API call to retrieve the ID (URN) of the organization associated with your token. This way, you also get the environments that are marked as default environments assigned to you.

---

This chapter includes the following topics:

- [How Do I Retrieve the ID of My Organization](#)
- [How Do I Retrieve the List of Environments in My Organization](#)
- [How Do I Retrieve Details About a Specific Environment](#)
- [How Do I Establish a Trust Relationship Between VMware Cloud services and VMware Cloud Director service](#)
- [How Do I Retrieve Details About the OAuth App For My Organization](#)
- [How Do I Update The OAuth App For My Organization](#)
- [How Do I Delete an OAuth App](#)

## How Do I Retrieve the ID of My Organization

You can retrieve the ID (URN) of your VMware Cloud services platform organization by using the VMware Cloud Director service API.

### Prerequisites

- Verify that you are assigned the **Provider Administrator** or the **Provider Support** role.
- Obtain an API token from the organization you want to manage and exchange it for an access bearer token. Use the bearer token in the Authorization header when you run API calls. See [Chapter 3 How Do I Generate an API Token](#).

## Procedure

- ◆ Run a GET request.

```
GET https://operatorUrl/organization
```

Here *operatorUrl* is the operator URL, for example `vcdc-operator-prod-us-west-2.vdp.vmware.com`.

## Results

The response returns the ID of the organization associated with your token. You need the ID of your organization, so that you can run requests against the organization. For example, to retrieve a list of the environments associated with it.

## Example: Retrieve the ID of Your Organization

This example retrieves the ID of the organization associated with your token. Run a GET request with the bearer token that you generated in the `Authorization` header of the request.

```
GET https://vcdc-operator-prod-us-west-2.vdp.vmware.com/organization/
```

Use the bearer token in the `Authorization` header of the request.

```
Authorization:
Bearer eyJh...I1NiIs
```

The response returns the ID (URN) of the organization associated with your token.

```
{
  "id": "urn:vcdc:organization:12345678-1234-1234-1234-123456789abc"
}
```

## What to do next

[How Do I Retrieve the List of Environments in My Organization](#)

## How Do I Retrieve the List of Environments in My Organization

After you retrieve the ID (URN) of your organization, you can retrieve a list of the existing environments in your VMware Cloud services platform organization by using the VMware Cloud Director service API.

### Prerequisites

- Verify that you are assigned the **Provider Administrator** or the **Provider Support** role.
- Obtain an API token from the organization you want to manage and exchange it for an access bearer token. Use the bearer token in the `Authorization` header when you run API calls. See [Chapter 3 How Do I Generate an API Token](#).

- Obtain the organization ID (URN). See [How Do I Retrieve the ID of My Organization](#).

#### Procedure

- ◆ Run a GET request.

```
GET https://operatorUrl/organizations/organization-Urn/environments
```

Here *operatorUrl* is the operator URL, for example `vcdd-operator-prod-us-west-2.vdp.vmware.com`.

#### Results

The response returns a list of the environments that are associated with your organization.

### Example: Retrieve the List of Environments in My Organization

This example retrieves the list of environments in your organization. Run a GET request with the bearer token that you generated in the Authorization header of the request.

```
GET https://vcdd-operator-prod-us-west-2.vdp.vmware.com/organization/urn:vcdd:organization:12345678-1234-1234-1234-123456789abc/environments
```

Use the bearer token in the Authorization header of the request.

```
Authorization:
Bearer eyJh...I1NiIs
```

The response returns the list of the environments associated with your organization.

```
{
  "resultTotal": 1,
  "pageCount": 1,
  "page": 1,
  "pageSize": 20,
  "valueType": "Environments",
  "values": [
    {
      "id": "urn:vcdd:environment:00000000-0000-0000-0000-000000000000",
      "name": "California",
      "location": "us-west-2",
      "url": "https://vcdd-coordinator-prod-us-west-2.vdp.vmware.com",
      "service": "http://vcdd-coordinator-prod-us-west-2-rest-frontend.vcdd-prod-us-west-2",
      "enabled": true,
      "initial": true
    }
  ]
}
```

## How Do I Retrieve Details About a Specific Environment

You can retrieve details about a specific environment by using the VMware Cloud Director service API.

### Prerequisites

- Verify that you are assigned the **Provider Administrator** or the **Provider Support** role.
- Obtain an API token from the organization you want to manage and exchange it for an access bearer token. Use the bearer token in the Authorization header when you run API calls. See [Chapter 3 How Do I Generate an API Token](#).
- Obtain the environment ID (URN). See [How Do I Retrieve the List of Environments in My Organization](#).

### Procedure

- ◆ Run a GET request.

```
GET https://operatorUrl/environments/environmentUrn
```

Here *operatorUrl* is the operator URL, for example `vcdc-operator-prod-us-west-2.vdp.vmware.com`.

### Results

The response returns information about the selected environment.

## Example: Retrieve Details About a Single Environment

This example retrieves information about a single environment.

```
GET https://vcdc-operator-prod-us-west-2.vdp.vmware.com/environments/urn:vcdc:environment:00000000-0000-0000-0000-000000000000
```

Use the bearer token in the Authorization header of the request.

```
Authorization:
Bearer eyJh...I1NiIs
```

The response returns information about the environment.

```
{
  "id": "urn:vcdc:environment:00000000-0000-0000-0000-000000000000",
  "name": "California",
  "location": "us-west-2",
  "url": "https://vcdc-coordinator-prod-us-west-2.vdp.vmware.com",
  "service": "http://vcdc-coordinator-prod-us-west-rest-frontend.prod-us-west",
  "enabled": true,
  "initial": true
}
```

## How Do I Establish a Trust Relationship Between VMware Cloud services and VMware Cloud Director service

For users to be able to create VMware Cloud Director instances, an **organization owner** must first establish a trust relationship between VMware Cloud Director service and the VMware Cloud organization.

When you create a VMware Cloud Director instance, VMware Cloud Director service creates an OAuth app for this instance in the VMware Cloud organization and configures the VMware Cloud Director instance to point to this OAuth app. As a result, VMware Cloud services becomes the identity provider for the VMware Cloud Director instance.

Because only a VMware Cloud **organization owner** can create OAuth apps in VMware Cloud, when a user without this set of rights attempts to create a VMware Cloud Director instance, SSO cannot be configured for that instance.

When a VMware Cloud **organization owner** establishes a trust relationship between VMware Cloud Director service and the VMware Cloud organization, VMware Cloud Director service acquires the right to create OAuth apps on behalf of all users in the VMware Cloud organization.

As a result, all users can create a VMware Cloud Director instance that uses VMware Cloud services as its identity provider.

### Prerequisites

Verify that you are a VMware Cloud **organization owner**.

### Procedure

- ◆ Run a POST request.

```
POST https://operatorUrl/organizations/organization-Urn/configuration/cspCredentials
```

Here *operatorUrl* is the operator URL, for example `vcdc-operator-prod-us-west-2.vdp.vmware.com`.

### Example: Create an OAuth App That Is Associated with Your Organization

This example creates an OAuth app that is associated with your VMware Cloud organization.

```
POST https://vcdc-operator-prod-us-west-2.vdp.vmware.com/organizations/urn:vcdc:organization:12345678-1234-1234-1234-123456789abc/configuration/cspCredentials
```

Use the bearer token in the Authorization header of the request.

```
Authorization:
Bearer eyJh...I1NiIs
```

The response returns the ID of the newly created OAuth app.

```
{
  "appId": "aa1A1aaAaAa1AaA1Aa1aAaaaaAaaaAAAAaA",
  "appSecret": "*****"
}
```

## How Do I Retrieve Details About the OAuth App For My Organization

You can retrieve the ID of the OAuth app that is associated with your your VMware Cloud services platform organization by using the VMware Cloud Director service API.

### Prerequisites

- Verify that a trust relationship has been established between VMware Cloud Director service and VMware Cloud services. See [How Do I Establish a Trust Relationship Between VMware Cloud services and VMware Cloud Director service](#).
- Verify that you are assigned the **Provider Administrator** or the **Provider Support** role.
- Obtain an API token from the organization you want to manage and exchange it for an access bearer token. Use the bearer token in the Authorization header when you run API calls. See [Chapter 3 How Do I Generate an API Token](#).
- Obtain the organization ID (URN). See [How Do I Retrieve the ID of My Organization](#).

### Procedure

- ◆ Run a GET request.

```
GET https://operatorUrl/organizations/organization-Urn/configuration/cspCredentials
```

Here *operatorUrl* is the operator URL, for example `vcdc-operator-prod-us-west-2.vdp.vmware.com`.

## Example: View the OAuth App That Is Associated with Your Organization

This example retrieves information about the OAuth app that is associated with your VMware Cloud organization.

```
GET https://vcdc-operator-prod-us-west-2.vdp.vmware.com/organizations/urn:vcdc:organization:12345678-1234-1234-1234-123456789abc/configuration/cspCredentials
```

Use the bearer token in the Authorization header of the request.

```
Authorization:
Bearer eyJh...I1NiIs
```

The response returns the OAuth app ID.

```
{
  "appId": "aa1A1aaAaAa1AaA1Aa1aAaaaaAaaaAAAAaaA",
  "appSecret": "*****"
}
```

## How Do I Update The OAuth App For My Organization

You can update the ID or the secret of the OAuth app that is associated with your your VMware Cloud services platform organization by using the VMware Cloud Director service API.

- Verify that a trust relationship has been established between VMware Cloud Director service and VMware Cloud services. See [How Do I Establish a Trust Relationship Between VMware Cloud services and VMware Cloud Director service](#).
- Verify that you are assigned the **Provider Administrator** or the **Provider Support** role.
- Obtain an API token from the organization you want to manage and exchange it for an access bearer token. Use the bearer token in the Authorization header when you run API calls. See [Chapter 3 How Do I Generate an API Token](#).
- Obtain the organization ID (URN). See [How Do I Retrieve the ID of My Organization](#).

### Procedure

- 1 Prepare a JSON file with the update and enter it in the body of the request.
- 2 Run a PUT request.

```
PUT https://operatorUrl/organizations/organization-Urn/configuration/cspCredentials
```

Here *operatorUrl* is the operator URL, for example `vcdd-operator-prod-us-west-2.vdp.vmware.com`.

### Example: Update an OAuth App

This example updates the app secret of a specific OAuth app.

```
PUT https://vcdd-operator-prod-us-west-2.vdp.vmware.com/organizations/urn:vcdd:organization:12345678-1234-1234-1234-123456789abc/configuration/cspCredentials
```

Enter the update information in the PUT request.

```
{
  "appId": "aa1A1aaAaAa1AaA1Aa1aAaaaaAaaaAAAAaaA",
  "appSecret": "*****"
}
```



Use the bearer token in the Authorization header of the request.

```
Authorization:
Bearer eyJh...I1NiIs
```

The response returns the OAuth app ID and the updated app secret.

```
{
  "appId": "aa1A1aaAaAa1Aa1Aa1aAaaaaAaaaAAAAaa",
  "appSecret": "*****"
}
```

## How Do I Delete an OAuth App

You can delete the OAuth app that is associated with your VMware Cloud services platform organization by using the VMware Cloud Director service API.

### Prerequisites

- Verify that you are assigned the **Provider Administrator** or the **Provider Support** role.
- Obtain an API token from the organization you want to manage and exchange it for an access bearer token. Use the bearer token in the Authorization header when you run API calls. See [Chapter 3 How Do I Generate an API Token](#).
- Obtain the organization ID (URN). See [How Do I Retrieve the ID of My Organization](#).

### Procedure

- ◆ Run a DELETE request.

```
DELETE https://operatorUrl/organizations/organization-Urn/configuration/cspCredentials
```

Here *operatorUrl* is the operator URL, for example `vcdc-operator-prod-us-west-2.vdp.vmware.com`.

### Results

When you delete the OAuth app, the trust relationship between VMware Cloud Director service and the VMware Cloud organization ceases to exist. Attempts to create or delete a VMware Cloud Director instance, to associate a custom domain, or to configure VMware Cloud services as an identity provider for a VMware Cloud Director instance would result in failure until you create a new OAuth app.

# Managing VMware Cloud Director Instances

# 5

By using the VMware Cloud services API, you can fetch information about the VMware Cloud Director instances deployed in your organization.

This chapter includes the following topics:

- [How Do I Create a VMware Cloud Director Instance](#)
- [How Do I Retrieve a List of All VMware Cloud Director Instances in Your Organization](#)
- [How Do I Retrieve Information About a Specific VMware Cloud Director Instance](#)
- [How Do I Associate a VMware Cloud on AWS SDDC](#)
- [How Do I Use VMware Cloud Services as an Identity Provider for VMware Cloud Director Service](#)
- [How Do I Delete a VMware Cloud Director Instance](#)

## How Do I Create a VMware Cloud Director Instance

As a **Provider Administrator**, you can create a VMware Cloud Director instance by using the VMware Cloud Director service API.

### Prerequisites

- Verify that you are assigned the **Provider Administrator** role.
- Obtain an API token from the organization you want to manage and exchange it for an access bearer token. Use the bearer token in the Authorization header when you run API calls. See [Chapter 3 How Do I Generate an API Token](#).
- Obtain the environment ID (URN). See [How Do I Retrieve the List of Environments in My Organization](#).

## Procedure

- 1 Prepare a JSON template with the required information for your VMware Cloud Director instance.

The template must contain a name, an upgrade path, the environment ID (URN), and a password that you set.

```
{
  "name": "name-of-your-instance",
  "upgradeCategory": "upgrade-path",
  "environmentId": "environmentUrn",
  "password": "cloud-director-instance-password",
  "instanceParams": {
  }
}
```

- 2 Run a POST request with the contents of the JSON template in the body of the request.

```
POST https://operatorUrl/environment/environmentUrn/instances
```

Here *operatorUrl* is the operator URL, for example `vcdc-operator-prod-us-west-2.vdp.vmware.com`.

## Results

The response creates a VMware Cloud Director instance in the environment that you specified.

## Example: Create a VMware Cloud Director Instance

This example creates a VMware Cloud Director instance in the environment with ID (URN) `urn:vcdc:environment:00000000-0000-0000-0000-000000000000`.

```
POST https://vcdc-operator-prod-us-west-2.vdp.vmware.com/environment/
urn:vcdc:environment:00000000-0000-0000-0000-000000000000/instances
```

Enter the required information in the POST request.

```
{
  "name": "VMware-Cloud-Director-test",
  "upgradeCategory": "sp-release:production",
  "environmentId": "urn:vcdc:environment:00000000-0000-0000-0000-000000000000",
  "password": "testPa$$w0rd",
  "instanceParams": {
  }
}
```

Use the bearer token in the Authorization header of the request.

```
Authorization:
Bearer eyJh...I1NiIs
```

The response returns the following information about the newly created VMware Cloud Director instance.

```
{
  "id": "urn:vcdd:task:22222222-2222-2222-2222-222222222222",
  "name": "Creating instance VMware-Cloud-Director-test",
  "entityId": "urn:vcdd:vcdInstance:33333333-3333-3333-3333-333333333333",
  "entityName": "VMware-Cloud-Director-test",
  "ownerId": "urn:vcdd:organization:12345678-1234-1234-1234-123456789abc",
  "userId": "your-account@domain-name.com",
  "steps": null,
  "status": "IN_PROGRESS",
  "startTime": null,
  "endTime": null,
  "queuedTime": "2020-06-09T12:52:03.311063Z",
  "message": "Instance creation starting",
  "output": {}
}
```

## How Do I Retrieve a List of All VMware Cloud Director Instances in Your Organization

You can fetch a list of all VMware Cloud Director instances deployed in your organization by using the VMware Cloud Director service API.

### Prerequisites

- Verify that you are assigned the **Provider Administrator** or the **Provider Support** role.
- Obtain an API token from the organization you want to manage and exchange it for an access bearer token. Use the bearer token in the Authorization header when you run API calls. See [Chapter 3 How Do I Generate an API Token](#).
- Obtain the organization ID (URN). See [How Do I Retrieve the ID of My Organization](#).
- Obtain the environment ID (URN). See [How Do I Retrieve the List of Environments in My Organization](#).

### Procedure

- ◆ Run a GET request.

```
GET https://operatorUrl/environment/environmentUrn/organization/organizationUrn/instances
```

Here *operatorUrl* is the operator URL, for example `vcdd-operator-prod-us-west-2.vdp.vmware.com`.

### Results

The response returns a list of all VMware Cloud Director instances deployed in the organization.

## Example: Retrieve a List of the VMware Cloud Director Instances

This example retrieves a list of all VMware Cloud Director instances deployed in a specific environment.

```
GET https://vcdc-operator-prod-us-west-2.vdp.vmware.com/environment/
urn:vcdc:environment:00000000-0000-0000-0000-000000000000/organization/
urn:vcdc:organization:12345678-1234-1234-1234-123456789abc/instances
```

Use the bearer token in the Authorization header of the request.

```
Authorization:
Bearer eyJh...I1NiIs
```

The response returns a list of the VMware Cloud Director instances.

```
{
  "resultTotal": 2,
  "pageCount": 1,
  "page": 1,
  "pageSize": 10,
  "values": [
    {
      "id": "urn:vcdc:vcdInstance:33333333-3333-3333-3333-333333333333",
      "name": "vcdInstance4",
      "environmentId": "urn:vcdc:environment:00000000-0000-0000-0000-000000000000",
      "domain": "defiant.us-west-2.vdp-prod-us-west-2.vmware.com",
      "instanceParams": {
        "parameter1": "value1",
        "parameter2": "value2",
        "parameter3": "value3"
      },
      "activeTask": null,
      "environment": {
        "id": "urn:vcdc:environment:00000000-0000-0000-0000-000000000000",
        "name": "test-environment",
        "location": "us-west-2",
        "url": ""
      },
      "environmentResources": []
    },
    {
      "id": "urn:vcdc:vcdInstance:44444444-4444-4444-4444-444444444444",
      "name": "st1",
      "environmentId": "urn:vcdc:environment:00000000-0000-0000-0000-000000000000",
      "domain": "st1.us-west-2.vdp-prod-us-west-2.vmware.com",
      "instanceParams": {
        "parameter4": "value4",
        "parameter5": "value5",
      },
      "activeTask": null,
      "environment": {
        "id": "urn:vcdc:environment:00000000-0000-0000-0000-000000000000",
        "name": "test-environment",
      }
    }
  ]
}
```

```

        "location": "us-west-2",
        "url": ""
    },
    "environmentResources": []
}
]
}

```

## How Do I Retrieve Information About a Specific VMware Cloud Director Instance

You can retrieve information about a specific VMware Cloud Director instance by using the VMware Cloud Director service API.

### Prerequisites

- Verify that you are assigned the **Provider Administrator** or the **Provider Support** role.
- Obtain an API token from the organization you want to manage and exchange it for an access bearer token. Use the bearer token in the Authorization header when you run API calls. See [Chapter 3 How Do I Generate an API Token](#).
- Obtain the environment ID (URN). See [How Do I Retrieve the List of Environments in My Organization](#).
- Obtain the instance ID (URN). See [How Do I Retrieve a List of All VMware Cloud Director Instances in Your Organization](#).

### Procedure

- ◆ Run a GET request.

```
GET https://operatorUrl/environment/environmentUrn/instances/vcdInstanceUrn
```

Here *operatorUrl* is the operator URL, for example `vcdc-operator-prod-us-west-2.vdp.vmware.com`.

### Results

The response returns information about the VMware Cloud Director instance deployed in the environment.

## Example: Retrieve Information About a VMware Cloud Director Instance

This example retrieves information about a VMware Cloud Director instance deployed in the environment.

```
GET https://vcdc-operator-prod-us-west-2.vdp.vmware.com/environments/urn:vcdc:environment:00000000-0000-0000-0000-000000000000/instances/urn:vcdc:vcdInstance:fdf57f4e-e8a8-4b47-8820-70945db21aac
```

Use the bearer token in the Authorization header of the request.

```
Authorization:
Bearer eyJh...I1NiIs
```

The response returns information about the VMware Cloud Director instance.

```
{
  "id": "urn:vcdc:vcdInstance:33333333-3333-3333-3333-333333333333",
  "name": "VMware-Cloud-Director-test",
  "templateId": "urn:vcdc:deploymentTemplate:11111111-1111-1111-1111-111111111111",
  "environmentId": "urn:vcdc:environment:00000000-0000-0000-0000-000000000000",
  "password": null,
  "domain": "vcd-3333333-3333-3333-3333-333333333333.vdp-prod-us-west-2.vmware.com",
  "instanceParams": null,
  "activeTask": {
    "id": "urn:vcdc:task:22222222-2222-2222-2222-2222222222",
    "name": "Creating instance VMware-Cloud-Director-test",
    "entityId": "urn:vcdc:vcdInstance:33333333-3333-3333-3333-333333333333",
    "entityName": "VMware-Cloud-Director-test",
    "ownerId": "urn:vcdc:organization:12345678-1234-1234-1234-123456789abc",
    "userId": "your-email@domain-name.com",
    "steps": "16/16",
    "status": "SUCCESS",
    "startTime": "2020-06-09T12:56:25.319742Z",
    "endTime": "2020-06-09T13:04:32.248292Z",
    "queuedTime": "2020-06-09T12:56:25.083499Z",
    "message": "",
    "output": {}
  },
  "environment": null,
  "environmentSettings": null,
  "statistics": []
}
```

## How Do I Associate a VMware Cloud on AWS SDDC

VMware Cloud Director service relies on an underlying VMware Cloud on AWS infrastructure for its CPU, memory, and storage resources. To start using these resources, you must associate your newly deployed VMware Cloud Director instance with a VMware Cloud on AWS SDDC.

### Prerequisites

- Verify that you are assigned the **Provider Administrator** role.
- Obtain an API token from the organization you want to manage. The scope of the API token must contain the **Administrator** and **NSX Cloud Admin** service roles, as well as the **Developer** or the **Organization Owner** organization role. See [Chapter 3 How Do I Generate an API Token](#). Note the API token.
- Use the API token to generate an access bearer token. Use the bearer token in the Authorization header when you run API calls.

- Obtain the environment ID (URN). See [How Do I Retrieve the List of Environments in My Organization](#).
- Obtain the VMware Cloud Director instance ID (URN). See [How Do I Retrieve a List of All VMware Cloud Director Instances in Your Organization](#).

### Procedure

- 1 Log in to the VMware Cloud Director service console at <https://console.cloud.vmware.com>.
- 2 Note the long organization ID for the VMware Cloud organization that contains your VMware Cloud on AWS SDDC.
  - a Click your user name.
  - b To display the full organization ID, click **View Organization**.
- 3 Prepare a JSON template with the required information for associating your VMware Cloud Director instance with a VMware Cloud on AWS SDDC.

```
{ "operationType": "associateVmc",
  "arguments": {
    "apiToken": "API-token",
    "vmcCspOrgId": "long-organization-ID-of-VMware-Cloud-Services-organization",
    "vmcName": "name-of-your-VMware-Cloud-on-AWS-SDDC" }
}
```

Here, "vmcCspOrgId" is the long organization ID for the VMware Cloud services organization that contains your VMware Cloud on AWS SDDC instances. It must be in a Universally unique identifier (UUID) format. This means that the ID must be represented as a 128-bit value formatted into blocks of hexadecimal digits separated by a hyphen. The "apiToken" is the API token that you obtained from your organization.

- 4 Run a POST request with the contents of the JSON template in the body of the request.

```
POST https://operatorUrl/environment/environmentUrn/instances/vcdInstanceUrn/operations/invoke
```

Here *operatorUrl* is the operator URL, for example `vcdc-operator-prod-us-west-2.vdp.vmware.com`.

### Results

You associated the VMware Cloud Director instance with a VMware Cloud on AWS SDDC.

## Example: Associate a VMware Cloud on AWS SDDC

This example associates your VMware Cloud Director instance with a VMware Cloud on AWS SDDC.

```
POST https://vcdc-operator-prod-us-west-2.vdp.vmware.com/environments/
urn:vcdc:environment:00000000-0000-0000-0000-000000000000/instances/
urn:vcdc:vcdInstance:22222222-2222-2222-2222-222222222222/operations/invoke
```



Use the bearer token in the Authorization header of the request.

```
Authorization:
Bearer eyJh...I1NiIs
```

Enter the required information in the POST request.

```
{ "operationType": "associateVmc",
  "arguments": {
    "apiToken": "123456789012345678901234567890123456789012345678901234567890",
    "vmcCspOrgId": "12345678-1234-1234-1234-123456789abc",
    "vmcName": "myVmcSddc" }
}
```

The response is a confirmation that the association task is in progress.

```
{
  "id": "urn:vcdc:task:33333333-3333-3333-3333-333333333333",
  "name": "associateVmc",
  "entityId": "urn:vcdc:vcdInstance:22222222-2222-2222-2222-222222222222",
  "entityName": "myentity1-name",
  "ownerId": "urn:vcdc:organization:11111111-1111-1111-1111-111111111111",
  "userId": "username@vmware.com",
  "steps": null,
  "status": "IN_PROGRESS",
  "startTime": null,
  "endTime": null,
  "queuedTime": "2020-12-07T13:54:03.268466Z",
  "message": "Invoking operation on instance",
  "isolation": "ENTITY_EXCLUSIVE",
  "output": null,
  "activity": "activity://AssociateVmcWithVcdActivity/
00000000-0000-0000-0000-000000000000/111111111111"
}
```

## How Do I Use VMware Cloud Services as an Identity Provider for VMware Cloud Director Service

You can use your VMware Cloud organization's single sign-on (SSO) to access your VMware Cloud Director instance.

### Prerequisites

Verify that a trust relationship has been established between VMware Cloud Director service and VMware Cloud services. When you log in to VMware Cloud Director service console, if trust has not been established already, you are prompted to either establish an OAuth trust relationship or to contact your system administrator. See [How Do I Establish a Trust Relationship Between VMware Cloud services and VMware Cloud Director service](#).

**Procedure**

- 1 Log in to the VMware Cloud Director service console at <https://console.cloud.vmware.com>.
- 2 Click **Deployed Instances**.
- 3 In the card of the VMware Cloud Director instance, click **Actions > Configure VMware Cloud Services as instance IDP**.
- 4 Click **Configure IDP**.
- 5 To verify that you configured VMware Cloud Director to use VMware Cloud services as an identity provider, run a GET request.

```
GET https://operatorUrl/environment/environmentUrn/instances/vcdInstanceUrn
```

Here *operatorUrl* is the operator URL, for example `vcdc-operator-prod-us-west-2.vdp.vmware.com`.

This example retrieves information about the VMware Cloud Director instance deployed in the environment.

```
GET https://vcdc-operator-prod-us-west-2.vdp.vmware.com/environments/
urn:vcdc:environment:00000000-0000-0000-0000-000000000000/instances/
urn:vcdc:vcdInstance:00000000-0000-0000-00000-000000000000
```

Use the bearer token in the Authorization header of the request.

```
Authorization:
Bearer eyJh...I1NiIs
```

The response returns information about the VMware Cloud Director instance. If the `OAuthClientId` parameter is populated with a specific value, that means that the configuration was successful and an OAuth app was created in your VMware Cloud organization .

```
{
  "id": "urn:vcdc:vcdInstance:00000000-0000-0000-0000-000000000000",
  "name": "johnsmith-test1",
  "ownerId": "urn:vcdc:organization:00000000-0000-0000-0000-000000000000",
  "templateId": null,
  "environmentId": "urn:vcdc:environment:00000000-0000-0000-0000-000000000000",
  ...
  "environmentSettings": null,
  "statistics": [],
  "upgradeAfter": "2020-10-15T13:50:21.720159Z",
  "upgradeCategory": "sp-main:alpha",
  "oauthClientId": "123ALLeShqk1BmU4Kc4sFDM0LuqVSX4LmHf"
}
```

- 6 To log in to VMware Cloud Director by using the API, run a POST request.

```
POST https://VMware-Cloud-Director-instance-URL/api/sessions
```

Use the bearer token in the Authorization header of the request and add `;org=system` at the end of the token.

```
Authorization:
Bearer eyJh...I1NiIs;org=system
```

Depending on the version of the VMware Cloud Director instance, use either **application/\*;version=34.0** or **application/\*;version=35.0** in the Accept header of the request.

The request establishes an API session. The response header contains `X-VMWARE-VCLOUD-ACCESS-TOKEN`, which you can use as a bearer token in the Authorization header of further API calls to the VMware Cloud Director instance.

- 7 (Optional) To retrieve information about the API session that you established, run a GET request.

```
GET https://VMware_Cloud_Director_instance_URL/api/sessions
```

Depending on the version of the VMware Cloud Director instance, use either **application/\*;version=34.0** or **application/\*;version=35.0** in the Accept header of the request.

Use **application/\*+xml**; in the Content-Type header.

Use the value of the token `X-VMWARE-VCLOUD-ACCESS-TOKEN` that you acquired in the previous step as a bearer token in the Authorization header.

```
Authorization:
Bearer eyAi...J2LiTi
```

## How Do I Delete a VMware Cloud Director Instance

As a **Provider Administrator**, if you no longer need a VMware Cloud Director instance and you want to free up resources, you can delete the VMware Cloud Director instance from your environment.

### Prerequisites

- Verify that you are assigned the **Provider Administrator** role.
- Obtain an API token from the organization you want to manage and exchange it for an access bearer token. Use the bearer token in the Authorization header when you run API calls. See [Chapter 3 How Do I Generate an API Token](#).
- Obtain the environment ID (URN). See [How Do I Retrieve the List of Environments in My Organization](#).
- Obtain the VMware Cloud Director instance ID (URN). See [How Do I Retrieve a List of All VMware Cloud Director Instances in Your Organization](#).

## Procedure

- ◆ Run a DELETE request.

```
DELETE https://operatorUrl/environment/environmentUrn/instances/vcdInstanceUrn
```

Here *operatorUrl* is the operator URL, for example `vcdc-operator-prod-us-west-2.vdp.vmware.com`.

## Results

You deleted the specified VMware Cloud Director instance.

## Example: Delete a VMware Cloud Director Instance

This example deletes the VMware Cloud Director with ID (URN)

`urn:vcdc:task:22222222-2222-2222-2222-222222222222` from the environment with ID (URN)

`urn:vcdc:environment:00000000-0000-0000-0000-000000000000`.

```
DELETE https://vcdc-operator-prod-us-west-2.vdp.vmware.com/environment/urn:vcdc:environment:3fccbd2a-003c-4303-8f1a-8569853236ac/instances/urn:vcdc:task:fadce89f-fe9-430b-bbdc-bfd3482c3796
```

Use the bearer token in the Authorization header of the request.

```
Authorization:
Bearer eyJh...I1NiIs
```

The response returns the following information.

```
{
  "id": "urn:vcdc:task:22222222-2222-2222-2222-222222222222",
  "name": "Deleting instance VMware-Cloud-Director-test",
  "entityId": "urn:vcdc:vcdInstance:33333333-3333-3333-3333-333333333333",
  "entityName": "VMware-Cloud-Director-test",
  "ownerId": "urn:vcdc:organization:12345678-1234-1234-1234-123456789abc",
  "userId": "your-account@domain-name.com",
  "steps": null,
  "status": "IN_PROGRESS",
  "startTime": null,
  "endTime": null,
  "queuedTime": "2020-06-10T10:06:22.068303Z",
  "message": "Instance delete started",
  "output": {}
}
```

# Managing VMware Cloud Director Service Tasks

# 6

By using the VMware Cloud Director service API, you can fetch information about the tasks running in the VMware Cloud Director service console. You can also get and download task files.

This chapter includes the following topics:

- [How Do I Retrieve Information About All Tasks](#)
- [How Do I Retrieve Details About a Single Task](#)
- [How Do I Retrieve a List of Support Bundle Files](#)
- [How Do I Retrieve a Specific Support Bundle File](#)
- [How Do I Download a Support Bundle File](#)

## How Do I Retrieve Information About All Tasks

You can retrieve details about all tasks in an environment of your organization by using the VMware Cloud Director service API.

### Prerequisites

- Verify that you are assigned the **Provider Administrator** or the **Provider Support** role.
- Obtain an API token from the organization you want to manage and exchange it for an access bearer token. Use the bearer token in the `Authorization` header when you run API calls. See [Chapter 3 How Do I Generate an API Token](#).
- Obtain the organization ID (URN). See [How Do I Retrieve the ID of My Organization](#).
- Obtain the environment ID (URN). See [How Do I Retrieve the List of Environments in My Organization](#).

### Procedure

- ◆ Run a GET request.

```
GET https://operatorUrl/environment/environmentUrn/organization/organizationUrn/tasks
```

Here *operatorUrl* is the operator URL, for example `vcdc-operator-prod-us-west-2.vdp.vmware.com`.

## Results

The response returns information about the tasks in the environment.

### Example: Retrieve Details About All Tasks

This example retrieves information about all tasks in an environment.

```
GET https://vcdc-operator-prod-us-west-2.vdp.vmware.com/environments/
urn:vcdc:environment:00000000-0000-0000-0000-000000000000/organization/
urn:vcdc:organization:12345678-1234-1234-1234-123456789abc/tasks
```

Use the bearer token in the Authorization header of the request.

```
Authorization:
Bearer eyJh...I1NiIs
```

The response returns information about the tasks in the environment.

```
{
  "resultTotal": 14225,
  "pageCount": 475,
  "page": 1,
  "pageSize": 30,
  "valueType": "Tasks",
  "values": [
    {
      "id": "urn:vcdc:task:22222222-2222-2222-2222-222222222222",
      "entityId": "urn:vcdc:entity:5100ac23-6de7-4baf-97c4-4be53def8210",
      "entityName": null,
      "percentComplete": 0,
      "status": "IN_PROGRESS",
      "startTime": null,
      "endTime": null,
      "message": "Reset provider admin password",
      "output": {}
    },
    {
      "id": "urn:vcdc:task:44444444-4444-4444-4444-444444444444",
      "entityId": "urn:vcdc:entity:5100ac23-6de7-4baf-97c4-4be53def8210",
      "entityName": null,
      "percentComplete": 0,
      "status": "FAILED",
      "startTime": "2019-10-11T10:25:12.680109-04:00",
      "endTime": "2019-10-11T00:00:00-04:00",
      "message": "java.lang.IllegalStateException: System setup encountered an error",
      "output": {}
    },
    {
      "id": "urn:vcdc:task:55555555-5555-5555-5555-555555555555",
      "entityId": "urn:vcdc:entity:5100ac23-6de7-4baf-97c4-4be53def8210",
      "entityName": null,
      "percentComplete": 100,
      "status": "SUCCESS",
      "startTime": "2019-09-26T13:47:30.656977-04:00",

```

```
"endTime": "2019-09-26T00:00:00-04:00",
"message": "",
"output": {}
```

## How Do I Retrieve Details About a Single Task

You can retrieve details about a single task by using the VMware Cloud Director service API.

### Prerequisites

- Verify that you are assigned the **Provider Administrator** or the **Provider Support** role.
- Obtain an API token from the organization you want to manage and exchange it for an access bearer token. Use the bearer token in the Authorization header when you run API calls. See [Chapter 3 How Do I Generate an API Token](#).
- Obtain the environment ID (URN). See [How Do I Retrieve the List of Environments in My Organization](#).
- Obtain the task ID (URN). See [How Do I Retrieve Information About All Tasks](#).

### Procedure

- ◆ Run a GET request by using the ID of the task you want to retrieve details about.

```
GET https://operatorUrl/environment/environmentUrn/tasks/taskUrn
```

Here *operatorUrl* is the operator URL, for example `vcdd-operator-prod-us-west-2.vdp.vmware.com`.

### Results

The response returns information about the selected task.

## Example: Retrieve Details About a Single Task

This example retrieves information about a single task.

```
GET https://vcdd-operator-prod-us-west-2.vdp.vmware.com/environments/
urn:vcdd:environment:00000000-0000-0000-0000-000000000000/tasks/
urn:vcdd:task:22222222-2222-2222-2222-222222222222
```

Use the bearer token in the Authorization header of the request.

```
Authorization:
Bearer eyJh...I1NiIs
```

The response returns information about the task.

```
{
  "id": "urn:vcdd:task:22222222-2222-2222-2222-222222222222",
```

```

    "entityId": "urn:vcdd:entity:33333333-3333-3333-3333-333333333333",
    "entityName": null,
    "percentComplete": 0,
    "status": "FAILED",
    "startTime": "2020-10-11T10:25:12.680109-04:00",
    "endTime": "2020-10-11T00:00:00-04:00",
    "message": "java.lang.IllegalStateException: System setup encountered an error",
    "output": {}
}

```

## How Do I Retrieve a List of Support Bundle Files

You can use the VMware Cloud Director service API to retrieve a list of the files in a support bundle that you created for a specific VMware Cloud Director instance.

### Prerequisites

- Obtain an API token from the organization you want to manage and exchange it for an access bearer token. Use the bearer token in the Authorization header when you run API calls. See [Chapter 3 How Do I Generate an API Token](#).
- Obtain the environment ID (URN). See [How Do I Retrieve the List of Environments in My Organization](#).
- Create a support bundle. See [How Do I Generate and Download a Support Bundle](#).

### Procedure

- 1 Run a GET request to retrieve the ID (URN) of the task that resulted in the creation of a support bundle.

```

GET https://operatorUrl/environment/environmentUrn/organization/organizationUrn/tasks?
filter=name==createSupportBundle

```

- 2 Run a GET request to retrieve the files of the support bundle that you created.

```

GET https://operatorUrl/environment/environmentUrn/tasks/taskUrn/files

```

### Results

The response returns information about the support bundle files.

## Example: Retrieve a List of Support Bundle Files

This example retrieves the IDs (URNs) of the tasks that resulted in the creation of support bundles and then retrieves information about the files generated by a specific task.



Run a GET request to retrieve the IDs (URNs) of the tasks that resulted in the creation of support bundles.

```
GET https://vcdc-operator-prod-us-west-2.vdp.vmware.com/environments/
urn:vcdc:environment:00000000-0000-0000-0000-000000000000/organization/
urn:vcdc:organization:11111111-1111-1111-1111-111111111111/tasks?filter=name==createSupportBundle
```

Use the bearer token in the Authorization header of the request.

```
Authorization:
Bearer eyJh...I1NiIs
```

The response returns information about all tasks in your organization that resulted in the creation of support bundle.

Run a GET request to retrieve information about the files generated by a specific task.

```
GET https://vcdc-operator-prod-us-west-2.vdp.vmware.com/environment/
urn:vcdc:environment:00000000-0000-0000-0000-000000000000/tasks/
urn:vcdc:task:11111111-1111-1111-1111-111111111111/files
```

The response returns information about the support bundle files created by the task.

```
[
  {
    "id": "urn:vcdc:clusterFile:11111111-1111-1111-1111-1111111111",
    "name": "support-bundle-vcd-22222222-2222-2222-2222-222222222222-2.tgz",
    "description": "Generated support bundle for vcd-22222222-2222-2222-2222-222222222222-2",
    "type": "SUPPORT_BUNDLE",
    "timestamp": "2020-11-11T06:21:29.913995Z"
  },
  {
    "id": "urn:vcdc:clusterFile:33333333-3333-3333-3333-333333333333",
    "name": "support-bundle-vcd-44444444-4444-4444-4444-444444444444-4.tgz",
    "description": "Generated support bundle for vcd-44444444-4444-4444-4444-444444444444-4",
    "type": "SUPPORT_BUNDLE",
    "timestamp": "2020-11-11T06:21:29.787532Z"
  }
]
```

## How Do I Retrieve a Specific Support Bundle File

You can use the VMware Cloud Director service API to retrieve information about a specific support bundle file that you created.

### Prerequisites

- Obtain an API token from the organization you want to manage and exchange it for an access bearer token. Use the bearer token in the Authorization header when you run API calls. See [Chapter 3 How Do I Generate an API Token](#).

- Obtain the environment ID (URN). See [How Do I Retrieve the List of Environments in My Organization](#).
- Obtain the task ID (URN). See [How Do I Retrieve Information About All Tasks](#).
- Retrieve the ID (URN) of the file. See [How Do I Retrieve a List of Support Bundle Files](#).

#### Procedure

- ◆ Run a GET request.

```
GET operatorURL/environment/environmentUrn/tasks/taskUrn/files/fileUrn
```

Here *operatorUrl* is the operator URL, for example `vcddc-operator-prod-us-west-2.vdp.vmware.com`.

#### Results

The response returns information about the task files.

### Example: Retrieve Details About a Specific Task File

This example retrieves information about a specific task file.

```
GET https://vcddc-operator-prod-us-west-2.vdp.vmware.com/environments/urn:vcddc:environment:00000000-0000-0000-0000-000000000000/tasks/urn:vcddc:task:22222222-2222-2222-2222-222222222222/files/urn:vcddc:clusterFile:33333333-3333-3333-3333-333333333333
```

The response returns information about the task file that you specified.

```
{
  "id": "urn:vcddc:clusterFile:33333333-3333-3333-3333-333333333333",
  "name": "support-bundle-vcd-55555555-5555-5555-5555-55555555555-5.tgz",
  "description": "Generated support bundle for vcd-55555555-5555-5555-5555-55555555555-5",
  "type": "SUPPORT_BUNDLE",
  "timestamp": "2020-11-11T06:21:29.787532Z"
}
```

## How Do I Download a Support Bundle File

You can download a specific support bundle file by using the VMware Cloud Director service API.

#### Prerequisites

- Verify that you are assigned the **Provider Administrator** or the **Provider Support** role.
- Obtain an API token from the organization you want to manage and exchange it for an access bearer token. Use the bearer token in the Authorization header when you run API calls. See [Chapter 3 How Do I Generate an API Token](#).
- Obtain the environment ID (URN). See [How Do I Retrieve the List of Environments in My Organization](#).

- Obtain the support bundle creation task ID (URN) and the file ID (URN). See [How Do I Retrieve a List of Support Bundle Files](#).

### Procedure

- 1 Run a GET request.

```
GET operatorURL/environment/environmentUrn/tasks/taskUrn/files/fileUrn/download
```

Here *operatorUrl* is the operator URL, for example `vcdc-operator-prod-us-west-2.vdp.vmware.com`.

- 2 When prompted to either save or preview the file, save the support bundle as a `.tgz` file.  
The support bundle is downloaded and saved in your default browser download directory.

## Example: Download Details About a Specific Task File

This example downloads information about a task file that you specify.

```
GET https://vcdc-operator-prod-us-west-2.vdp.vmware.com/environments/  
urn:vcdc:environment:00000000-0000-0000-0000-000000000000/tasks/  
urn:vcdc:task:22222222-2222-2222-2222-222222222222/files/  
urn:vcdc:clusterFile:33333333-3333-3333-3333-333333333333/download
```

The response prompts you to either save or preview the archived support bundle file.