

Provision Oracle Cloud Infrastructure in ServiceNow Using Terraform

Installation and Administration Guide for the
ServiceNow Cloud Provisioning and Governance:
OCI Add-On for Terraform Connector

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Revision History

The following revisions have been made to this document.

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Introduction

This document describes steps for provisioning resources on Oracle Cloud Infrastructure (OCI) by using the ServiceNow Cloud Provisioning and Governance: OCI Add-On for Terraform Connector.

The integration of HashiCorp Terraform and ServiceNow Cloud Provisioning and Governance enables users to provision infrastructure through ServiceNow self-service capabilities. ServiceNow users can create workspaces and perform Terraform runs by using prepared Terraform configurations hosted in version control system (VCS) repositories.

Integrating ServiceNow with Terraform Enterprise involves several configuration steps. You perform some of these steps in ServiceNow and some of them in Terraform Enterprise. After you perform these configuration steps, you can provision infrastructure on OCI by using the Cloud Provisioning and Governance: OCI Add-On for Terraform Connector.

Before You Begin

Before you can provision infrastructure on OCI by using the Cloud Provisioning and Governance: OCI Add-On for Terraform Connector, you must set up and configure Terraform Enterprise, Terraform Cloud, or Terraform Open Source and perform some prerequisite tasks in ServiceNow. This section provides information and instructions for those tasks.

Get Familiar with Terraform

Before you set up Terraform as a config provider, familiarize yourself with the following concepts and perform the following procedures from the Terraform documentation. Later sections refer to the tasks in these topics.

- [Get started with infrastructure as code \(IaC\) with Terraform](#)
- [Install and configure Terraform Open Source](#) (see also [Terraform CLI](#))
- [Set up and configure Terraform Cloud and Terraform Enterprise](#)
- [Get started with Terraform Cloud](#)
- [VCS integrations](#)
- [Workspaces in Terraform](#)
- [Set up API credentials](#)

Prerequisite Tasks for Terraform Setup

Before you can provision infrastructure using the Cloud Provisioning and Governance: Terraform Connector integration, you must [set up and configure a Terraform Cloud or Terraform Enterprise account](#). Following are some of the key steps that you perform in Terraform Cloud:

1. Create or choose an existing organization whose linked workspaces contain the infrastructure that you're provisioning.
2. [Connect to or integrate with](#) a supported VCS (GitHub or GitLab) provider.
The VCS must include workspaces, branches, and repositories with Terraform configurations.
3. Create a team with necessary permissions to manage workspaces in the organization that you create or choose.

4. Generate a Teams API token for the group so that the integration can use the user-group permissions.
5. Locate and save the OAuth token ID for the VCS provider or providers that you will use with Cloud Provisioning and Governance. Terraform uses the OAuth token ID to identify and authorize the VCS provider.

Prerequisite Tasks for ServiceNow Setup

To set up ServiceNow, perform the following actions. The links go to the ServiceNow documentation.

1. [Install](#) the MID Server.
2. [Request](#) the Cloud Provisioning and Governance application (plugin name: `com.snc.cloud.mgmt`).
3. [Request](#) the ServiceNow IntegrationHub Starter Pack Installer (plugin name: `com.glide.hub.integrations`).
4. [Request](#) ServiceNow Store applications:
 - [Cloud Provisioning and Governance: Terraform Connector](#)
 - [Discovery and Service Mapping Patterns](#)
 - *(Optional)* [Oracle Cloud Infrastructure discovery](#)
 - Install Cloud Provisioning and Governance: OCI Add-On for Terraform Connector from [ServiceNow Store](#).
5. [Install](#) the Terraform version and complex variable fix.

Create and Configure Terraform Config Provider

- If you're using Terraform Open Source to provision resources, configure by using the instructions at [Create a Terraform Open Source config provider and run Discovery](#).
- If you're using Terraform Cloud or Terraform Enterprise to provision resources, configure by using the instructions at [Create a Terraform Enterprise config provider and run Discovery](#).

Note: When you use Terraform Cloud or Terraform Enterprise, ensure that the MID Server is configured with the Terraform Enterprise capability and Cloud Management application. For more information, see [MID Server capabilities](#).

Set Up Cloud Provisioning and Governance: OCI Add-On for Terraform Connector

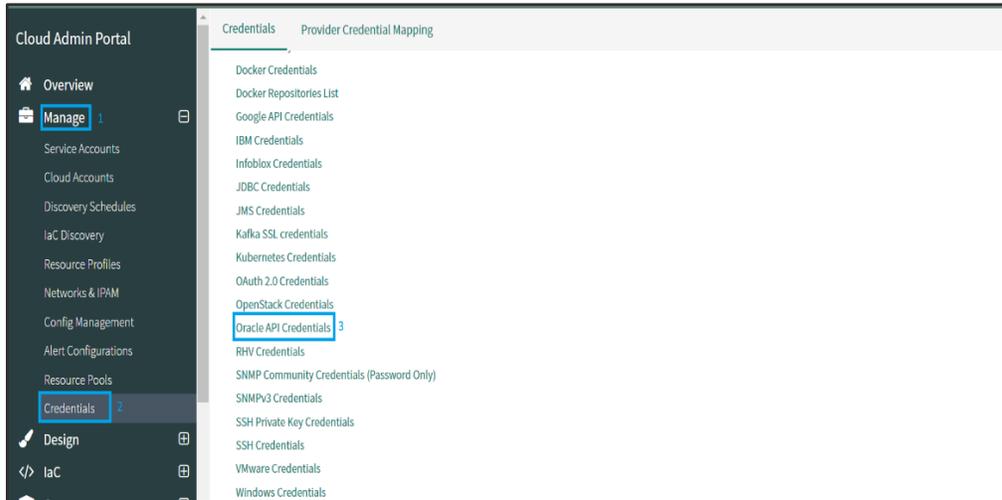
To set up the Cloud Provisioning and Governance: OCI Add-On for Terraform Connector, you need to create the required OCI credentials, a service account, and a cloud account in the ServiceNow environment.

To initially create the credentials information in the Oracle Cloud Console before you complete these tasks, follow the instructions in [Required Keys and OCIDs](#) on the Oracle documentation site.

Create Oracle API Credentials

Oracle API credentials are used as provider credentials in Oracle OCI Terraform templates.

1. Log in to your ServiceNow instance, and go to Cloud Admin Portal.
2. In the navigation menu, expand **Manage** and then click **Credentials**. On the **Credentials** tab, click **New** and then click **Oracle API Credentials**.



3. Enter the following values, copied from the Oracle Cloud Account as needed:
 - o **Name:** Enter a unique and descriptive name for the credentials.
 - o **Active:** Select this option to be able to use the credentials.
 - o **Tenancy Id:** Enter the OCID for the OCI tenancy.
 - o **User Id:** Enter the OCID for the OCI user.
 - o **Key Fingerprint:** Enter the key's fingerprint.
 - o **Private Key:** Enter the RSA private key, which must be supplied for authentication.

Note: Be sure to enter the private key as an RSA-formatted key. Use the [RSA Keys Converter](#) page for quick conversion.

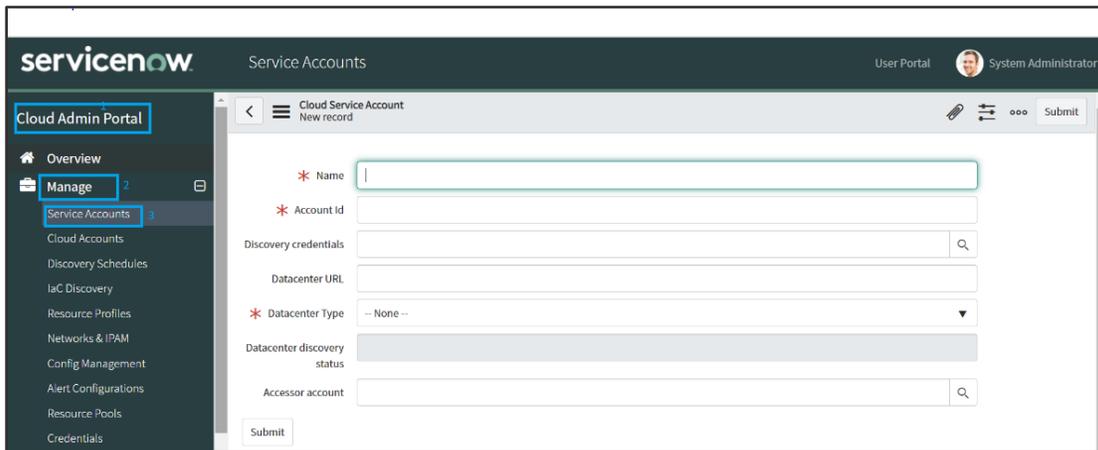
The screenshot shows the 'Oracle API Credentials' form in ServiceNow. The form is titled 'New record' and includes the following fields:

- Name:** A text input field, highlighted with a red box.
- Active:** A checkbox that is checked.
- Type:** A dropdown menu with 'oci' selected.
- Applies to:** A dropdown menu with 'All MID servers' selected.
- Classification:** A text input field.
- Order:** A text input field with the value '100'.
- Tenancy Id:** A text input field with a red asterisk indicating it is required.
- User Id:** A text input field with a red asterisk indicating it is required.
- Key Fingerprint:** A text input field with a red asterisk indicating it is required.
- Private Key:** A text input field with a red asterisk indicating it is required.

Create a Service Account

A service account is a secure record on your instance that stores the credentials and access information for your provider account. For more information, see the [ServiceNow documentation](#).

1. On the Cloud Admin Portal, expand **Manage**, click **Service Accounts**, and then click **New**.



The screenshot shows the ServiceNow interface for creating a new Cloud Service Account. The left sidebar is expanded to 'Manage' > 'Service Accounts'. The main form has the following fields:

- Name**: A text input field with a red asterisk indicating it is required.
- Account Id**: A text input field with a red asterisk.
- Discovery credentials**: A text input field with a search icon.
- Datacenter URL**: A text input field.
- Datacenter Type**: A dropdown menu with a red asterisk and a selection of '-- None --'.
- Datacenter discovery status**: A greyed-out text input field.
- Accessor account**: A text input field with a search icon.

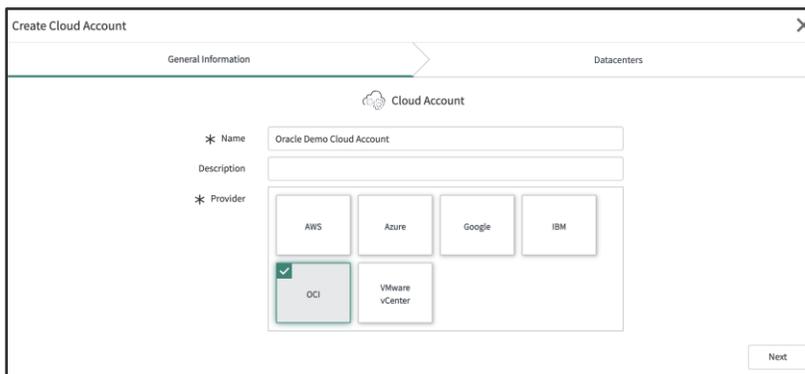
A 'Submit' button is located at the bottom left of the form.

2. Enter the following values to create an account, or select an existing account:
 - o **Name**: Enter a unique and descriptive name for the account.
 - o **Account Id**: The compartment OCID copied from [Oracle Cloud Account](#). In the Oracle Cloud Console navigation menu, select **Identity & Security** and then **Compartment**. Copy the compartment OCID for your organization.
 - o **Discovery credentials**: Select the OCI credentials that you created in the preceding section.
 - o **Datacenter URL**: Enter `https://$service.<your_region>.oraclecloud.com`. For example, `https://$service.us-ashburn-1.oraclecloud.com`.
 - o **Datacenter Type**: Select the OCI datacenter [`cmdb_ci_oci_datacenter`].

Create a Cloud Account

A cloud account is the logical representation in ServiceNow Cloud Provisioning and Governance of all or part of your managed cloud infrastructure. A cloud account can include multiple service accounts, even service accounts from different providers. For each service account, you specify which datacenters to include in the cloud account.

1. On the Cloud Admin Portal, expand **Manage**, click **Cloud Accounts**, and then click **New**.
2. Enter a name for the account, select **OCI** as the provider, and then click **Next**.

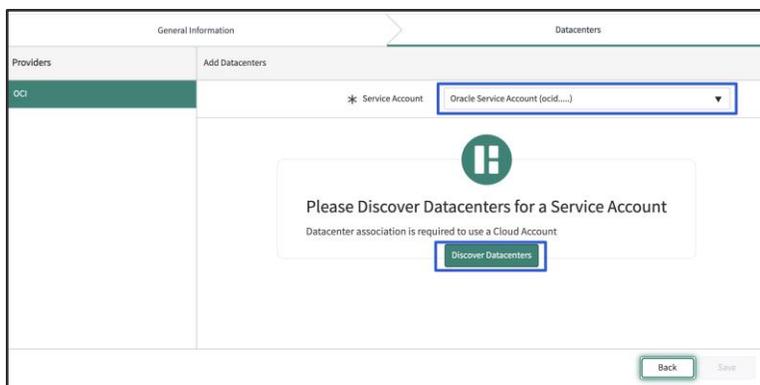


The screenshot shows the 'Create Cloud Account' form in ServiceNow. The form is divided into two tabs: 'General Information' and 'Datacenters'. The 'General Information' tab is active, showing the following fields:

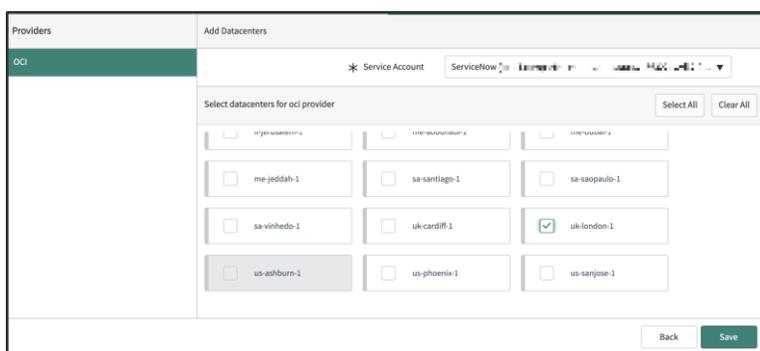
- Name**: A text input field containing 'Oracle Demo Cloud Account' with a red asterisk.
- Description**: A text input field.
- Provider**: A dropdown menu with a red asterisk, showing a grid of provider options: AWS, Azure, Google, IBM, OCI (selected with a green checkmark), and VMware vCenter.

A 'Next' button is located at the bottom right of the form.

3. Select the service account that you created in the preceding section, and click **Discover Datacenters**.



4. After the list of datacenters is populated, select the datacenter where you need resources to be provisioned. Then click **Save**.



Create and Configure a Sample OCI Terraform Cloud Catalog

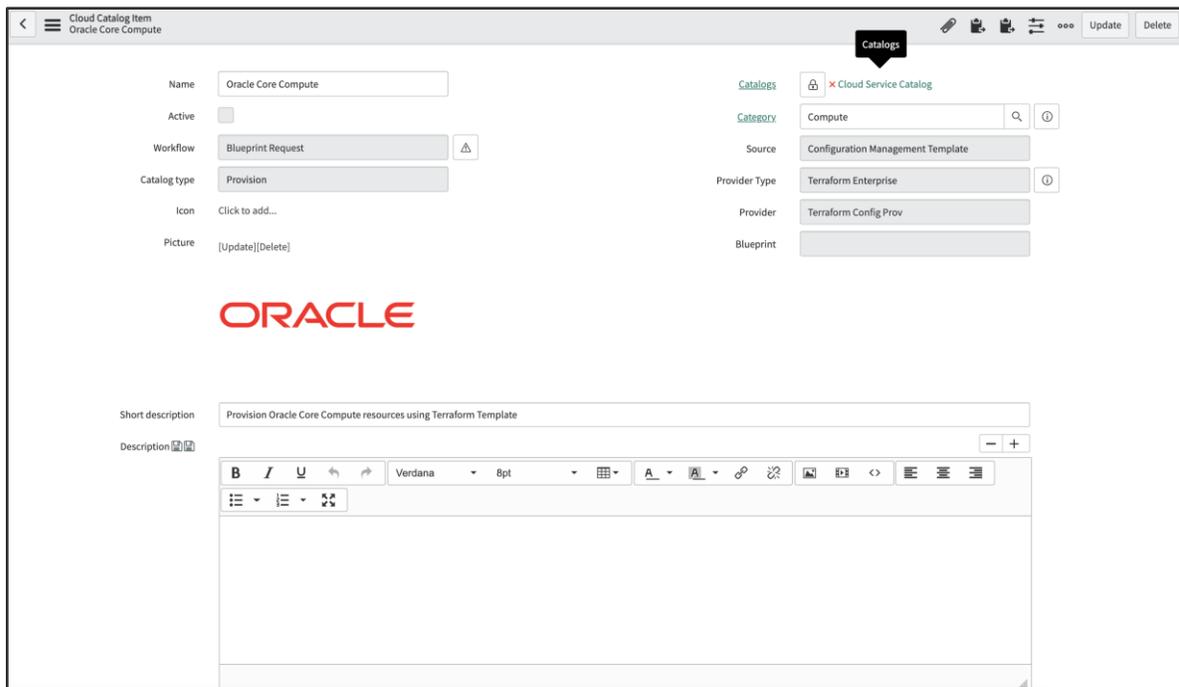
Create a cloud catalog item for provisioning, based on a Terraform template, and publish the catalog item to provide a service. For details, see [Create or update a catalog item based on a Terraform template](#) in the ServiceNow documentation.

Create a Cloud Catalog Item

1. In ServiceNow, go to the Cloud Admin Portal.
2. In the navigation menu, expand **Design** and then click **Cloud Catalog Item**.
3. Click **New** and then provide the following values:
 - o **Name:** Enter a name for the catalog.
 - o **Short Description:** Enter a short description for the catalog.
 - o **Source:** Select **Configuration Management Template**.
 - o **Provider Type:** Select the relevant Terraform provider from the list.
 - o **Provider:** Select the config provider that you created in “Create and Configure Terraform Config Provider.”
 - o **Picture and Icon:** Select the picture and icon to display for the cloud catalog item.

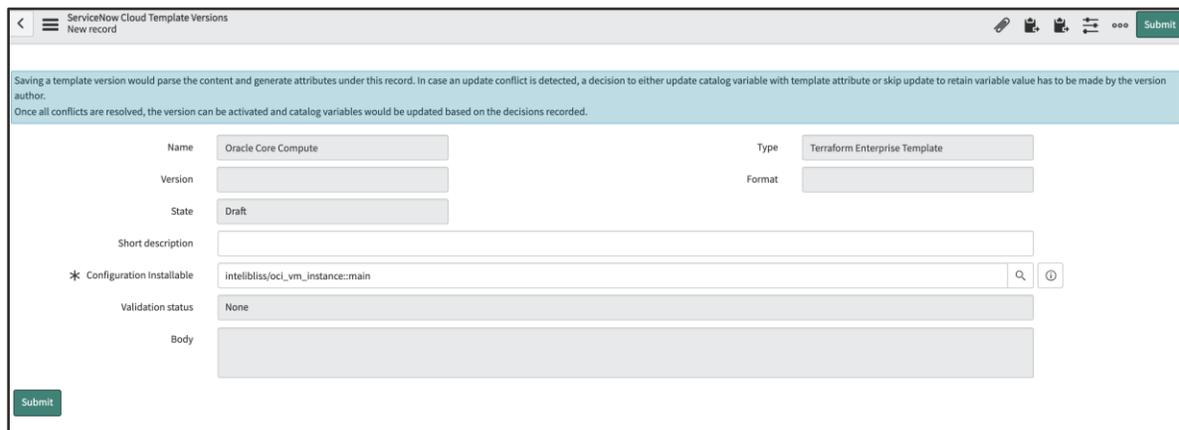
4. Click **Submit**.

The cloud catalog item is created, as shown in the following example image.



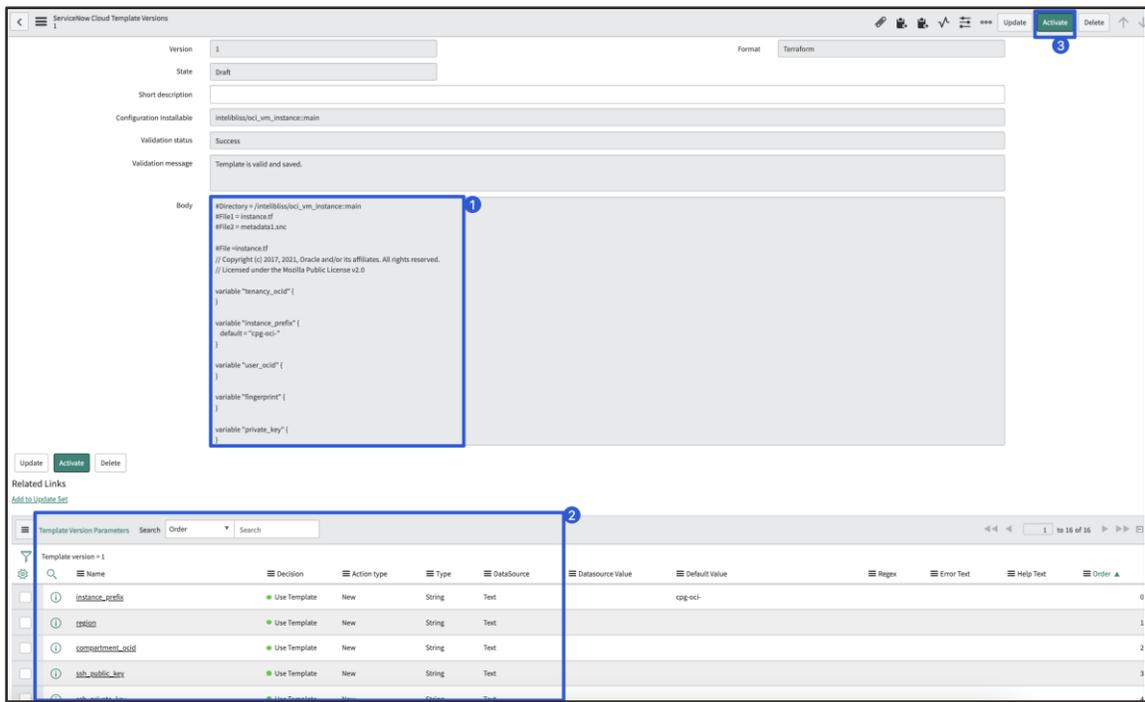
5. Open the newly created catalog record. On the **Cloud Templates** related list, click **New**.

6. Select the correct configuration installable from the list. The configuration installable is the VCS repository that's attached to the Terraform provider or folder for Terraform Open Source. Then, click **Submit**.



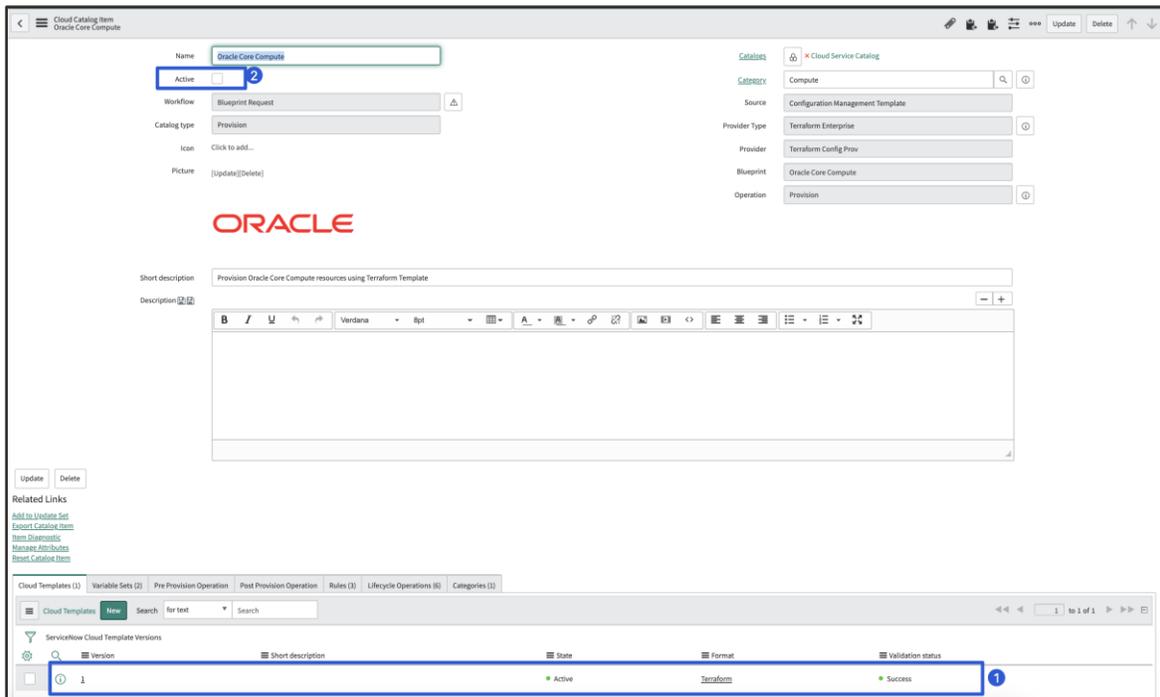
7. Open the newly created Draft version from the catalog item related list, validate the template details and the template version parameters, and then click **Activate**.

Note: Template version parameters are automatically parsed input variables from the Terraform template. They're automatically created as variables on the cloud catalog item and exposed to end users who order the service.



8. Open the cloud catalog item and select the **Active** check box.

Note: For more options to customize the catalog item, see [Create a cloud catalog item](#).



Order a Cloud Catalog from the Cloud User Portal

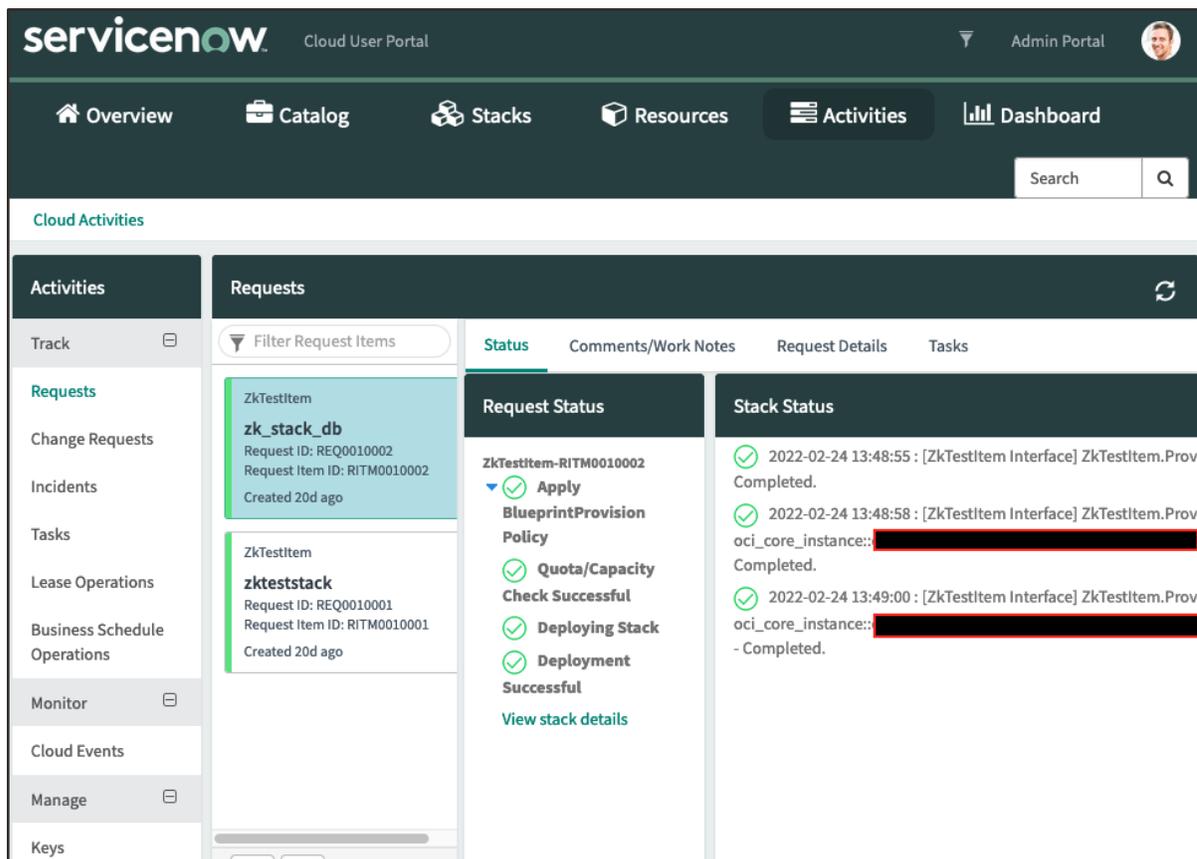
After the catalog item is created, users in the ServiceNow environment can launch that item through ServiceNow's Cloud User Portal. Depending on the settings used by the owning entity of the ServiceNow account, limits can be placed on users and approvals required to launch the catalog item.

Note: For details about the Cloud User Portal, see [Cloud User Portal](#).

1. Open the Cloud User Portal, for example, `<instance_url>/cloud_portal`.
2. Click **Launch a Stack**.
3. Select the catalog item, fill in the details, and click **Submit**.
4. Track and manage the status by using the **Activities** tab.

The stack is deployed through the Terraform Enterprise or Terraform Cloud account. Check that environment because sometimes an “approve” action might be required, depending on the account settings.

A successfully completed deployment should look like the following image in your ServiceNow **Activities** environment, and you should be able to view the deployed resources in your Oracle Cloud Infrastructure tenancy.



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