



Installing Cisco Container Platform

Installing Cisco Container Platform is a three-step process:

- [Importing Cisco Container Platform Tenant Base VM](#)

The Cisco Container Platform tenant base VM contains the container image and the files that are necessary to create the tenant Kubernetes clusters that are used for configuring monitoring, logging, container network interfaces (CNI), and persistent volumes.

- [Deploying Installer VM, on page 3](#)

The Installer VM contains the VM image and the files for installing other components such as Kubernetes and the Cisco Container Platform application.

- [Deploying Cisco Container Platform, on page 6](#)

The Cisco Container Platform Control Plane is set up using an installer UI. After the installer VM is switched on, the URL of the installer appears on the vCenter **Web console**.

- [Importing Cisco Container Platform Tenant Base VM, on page 1](#)
- [Deploying Installer VM, on page 3](#)
- [Deploying Cisco Container Platform, on page 6](#)

Importing Cisco Container Platform Tenant Base VM

Before you begin

- Ensure that you have configured the storage and networking requirements. For more information, see [Storage Requirements](#) and [Network Requirements](#).
- Ensure that vSphere has an Enterprise Plus license, which supports DRS and vSphere HA.

Step 1 Log in to the VMware vSphere **Web Client** as an administrator.

Step 2 In the **Navigation** pane, right-click the cluster on which you want to deploy Cisco Container Platform, and then choose **Deploy OVF Template**. The **Deploy OVF Template** wizard appears.

Step 3 In the **Select template** screen, perform these steps:

- a) Click the **URL** radio button, and enter the URL of the Cisco Container Platform Tenant OVA.

Alternatively, click the **Local file** radio button, and browse to the location where the Cisco Container Platform tenant OVA is saved on your computer.

Note The format of the Tenant OVA filename is as follows:

```
ccp-tenant-image-x.y.z-ubuntuXX-a.b.c.ova
```

Where *x.y.z* corresponds to the version of Kubernetes and *a.b.c* corresponds to the version of Cisco Container Platform.

The [Version Mapping Table](#) provides the Cisco Container Platform version, Kubernetes version and image names mapping for each release.

b) Click **Next**.

Step 4

In the **Select name and location** screen, perform these steps:

a) In the **Name** field, enter a name for the Cisco Container Platform tenant base VM.

Note You need to note down the Cisco Container Platform tenant base VM name as you will need to specify it while creating a cluster.

b) In the **Browse** tab, choose the data center where you want to deploy Cisco Container Platform.

c) Click **Next**.

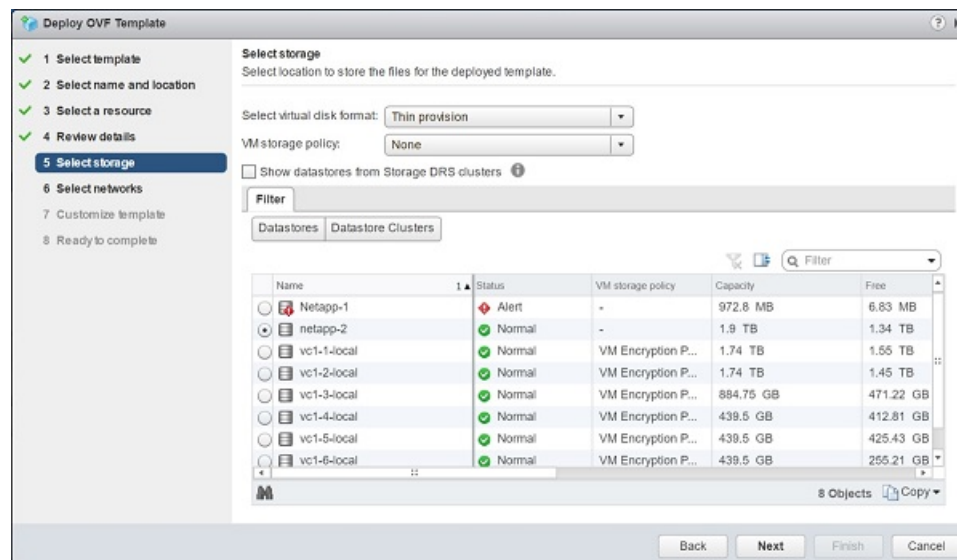
Step 5

In the **Select a resource** screen, choose a cluster where you want to run the Cisco Container Platform tenant base VM, and then click **Next**.

Step 6

In the **Review details** screen, verify the Cisco Container Platform tenant base VM details, and then click **Next**. The **Select storage** screen appears.

Figure 1: Select Storage Screen



Step 7

In the **Select storage** screen, perform these steps:

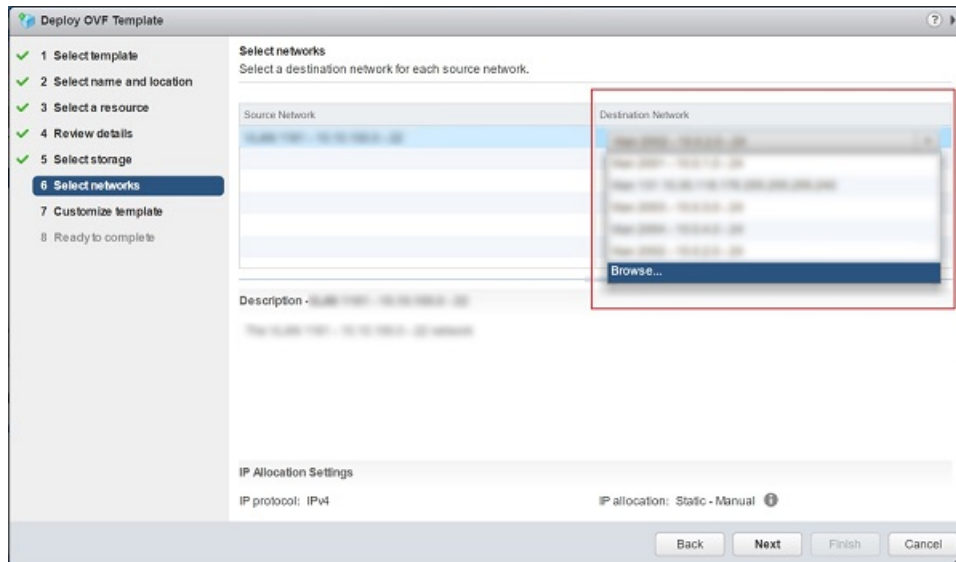
a) From the **Select virtual disk format** drop-down list, choose **Thin Provision** to allocate storage on demand.

b) In the **Filters** tab, choose a destination datastore for the Cisco Container Platform tenant base VM.

c) Click **Next**.

The **Select networks** screen appears.

Figure 2: Select Networks Screen



Step 8 In the **Select networks** screen, perform these steps:

- a) From the **Destination Network** column, choose a network for each source network that is available in the Cisco Container Platform tenant base VM.
- b) Click **Next**.

Step 9 In the **Customize template** screen, click **Next**.

Step 10 In the **Ready to complete** screen, verify the Cisco Container Platform tenant base VM settings, and then click **Finish**. The Cisco Container Platform tenant base VM import takes few minutes to complete.

Note You can leave the tenant base VM powered off and continue to [Deploying Installer VM](#).

Deploying Installer VM

Before you begin



Note This deployment is for new installations of Cisco Container Platform. For upgrades, see [Upgrading Cisco Container Platform](#).

Ensure that you have imported the latest Cisco Container Platform tenant base VM to the vCenter instance. For more information, see [Importing Cisco Container Platform Tenant Base VM, on page 1](#).

Step 1 Log in to the VMware vSphere Web Client as an administrator.

Step 2 In the **Navigation** pane, right-click the cluster on which you want to deploy Cisco Container Platform, and then choose **Deploy OVF Template**.

The **Deploy OVF Template** wizard appears.

Step 3 In the **Select template** screen, perform these steps:

- a) Click the **URL** radio button, and enter the URL of the Installer OVA.

Alternatively, click the **Local file** radio button, and browse to the location where the Installer OVA is saved on your computer.

Note The format of the Installer OVA filename is as follows:

```
kcp-vm-x.y.z.ova
```

Where *x*, *y*, *z* corresponds to the major, minor, and patch release of Cisco Container Platform.

- b) Click **Next**.

Step 4 In the **Select name and location** screen, perform these steps:

- a) In the **Name** field, enter a name for the installer VM.
- b) In the **Browse** tab, choose the data center where you want to deploy Cisco Container Platform.
- c) Click **Next**.

Step 5 In the **Select a resource** screen, choose the cluster where you want to run the installer VM, and then click **Next**.

Step 6 In the **Review details** screen, verify the template details, and then click **Next**.

Step 7 In the **Select storage** screen, perform these steps:

- a) From the **Select virtual disk format** drop-down list, choose **Thin Provision** to allocate storage on demand.
- b) In the **Filters** tab, choose a destination datastore to store the installer VM.
- c) Click **Next**.

Step 8 In the **Select networks** screen, perform these steps:

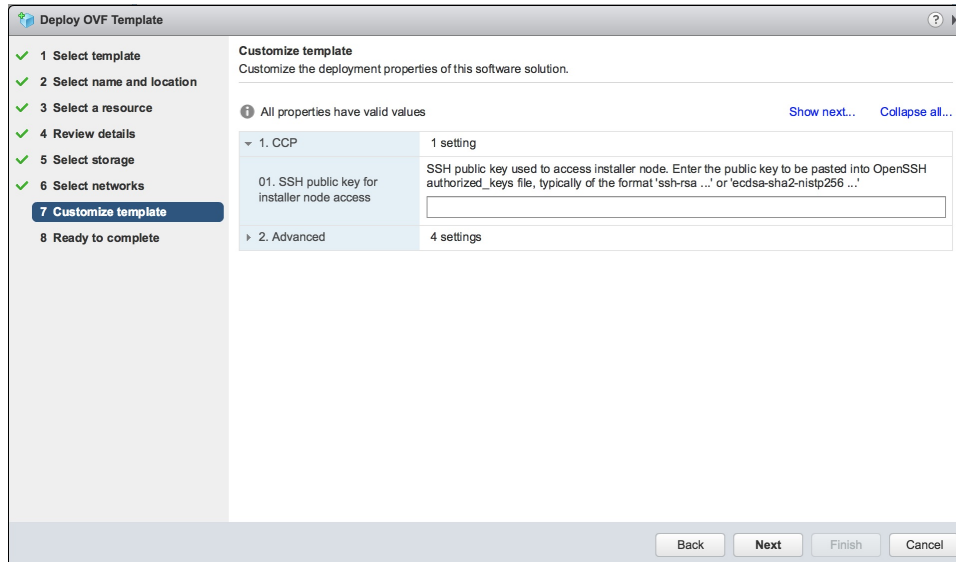
- a) From the **Destination Network** column, choose a network for each source network that is available in the installer VM.

Note The selected network must have access to vCenter and the tenant VM networks.

- b) Click **Next**.

The **Customize template** screen appears.

Figure 3: Customize Template Screen

**Step 9**

In the **Customize template** screen, enter the following optional parameters to customize the deployment properties:

- a) Expand **CCP**, in the **SSH public key for installer node access** field, enter an ssh public key. You can use this key to ssh to the installer VM.

Note

- Ensure that you enter the public key in a single line.
- If you do not have an SSH key pair, you can generate it using the **ssh-keygen** command.

- b) Expand **Advanced**, in the **CIDR for kubernetes pod network** field, **192.168.0.0/16** is displayed as the default pod network CIDR of the Kubernetes cluster for the installer. If the CIDR IP addresses conflict with the tenant cluster VM network or the vCenter network, you need to set a different value for the CIDR. This CIDR is the single large CIDR from which smaller CIDRs are automatically allocated to each node for allocating IP addresses to the pods in the Kubernetes cluster. For more information, refer to <https://kubernetes.io/docs/setup/scratch/#network-connectivity>.
- c) Click **Next**.

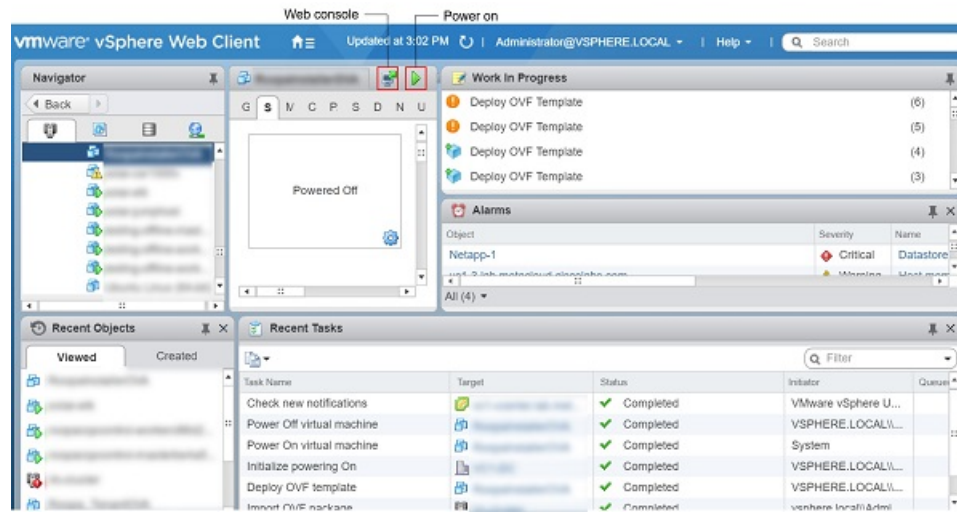
Step 10

In the **Ready to complete** screen, verify the installer VM deployment settings, and then click **Finish**.

Step 11

Click the **Power on** button to switch on the VM.

Figure 4: Switching on Installer VM



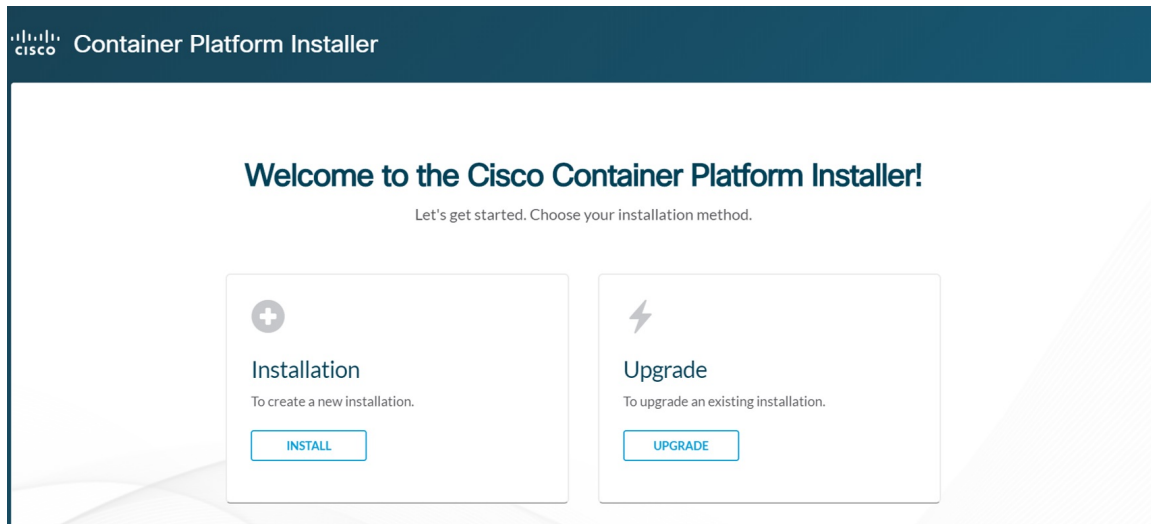
Once the installer VM is switched on, the installer UI takes a few minutes to become ready. You can view the status of the Installer UI using the Web console of vCenter. When the installer UI is ready, you can access it using the URL from the Web console.

Deploying Cisco Container Platform

The Cisco Container Platform Control Plane is set up using an installer UI. After the installer VM is switched on, the URL of the installer appears on the vCenter **Web console**.

- Step 1** Obtain the URL from the vCenter **Web console** and use a browser to open the installer UI. The **Welcome** screen appears.

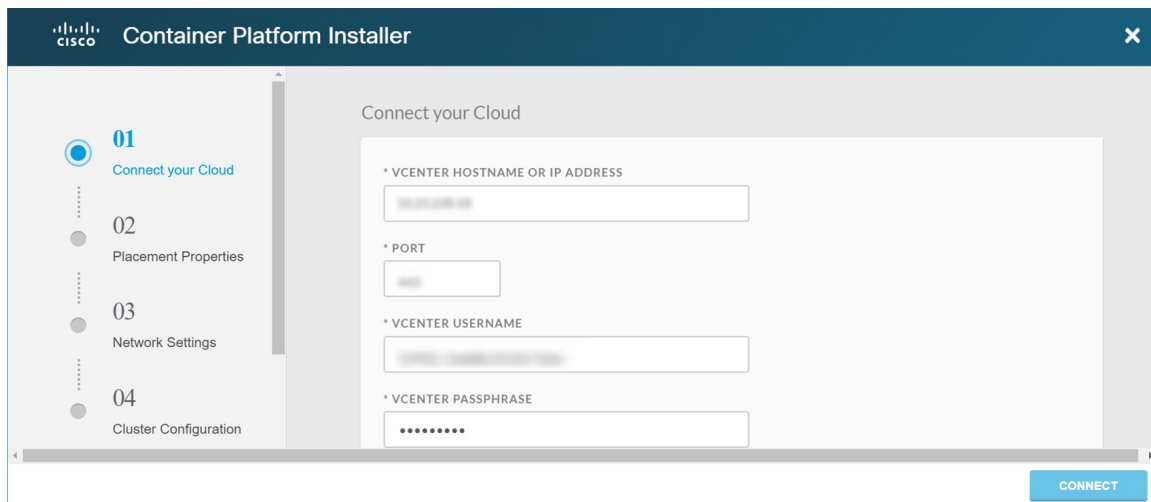
Figure 5: Welcome Screen



Step 2 Click **Install**.

The **Connect your Cloud** screen appears.

Figure 6: Connect your Cloud Screen



Step 3 In the **Connect your Cloud** screen, enter the following information:

- In the **VCENTER HOSTNAME OR IP ADDRESS** field, enter the IP address of the vCenter instance that you want to use.
- In the **PORT** field, enter the port number that your vCenter server uses.

Note The default port for vCenter is 443.

- In the **VCENTER USERNAME** field, enter the username of the user with administrator access to the vCenter instance.
- In the **VCENTER PASSPHRASE** field, enter the passphrase of the vCenter user.
- Click **CONNECT**.

The **Placement Properties** screen appears.

Figure 7: Placement Properties Screen

Step 4

In the **Placement Properties** screen, enter the following information:

- From the **VSPHERE DATACENTER** drop-down list, choose the datacenter.
- From the **VSPHERE CLUSTER** drop-down list, choose the cluster.
- From the **VSPHERE DATASTORE** drop-down list, choose the datastore.
- From the **VSPHERE NETWORK** drop-down list, choose the network.
- In the **BASE VM IMAGE** field, enter the Cisco Container Platform tenant base VM name from Step 5 of the [Importing Cisco Container Platform Tenant Base VM](#) task.
- Click **NEXT**.

The **Network Settings** screen appears.

Figure 8: Network Settings Screen

Step 5 In the **Network Settings** screen, enter the following information:

Note These network settings will be used to configure the Cisco Container Platform web interface.

- In the **NETWORK NAME** field, enter the name of the network that you want to use.
- In the **SUBNET CIDR** field, enter a CIDR for your subnet.
- In the **GATEWAY IP** field, enter the gateway IP address that you want to use.
- In the **IP ADDRESS RANGE** field, enter a range for the VIP network pool from which Cisco Container Platform can allocate the master VIP and the ingress VIP of the control plane.

Note You must ensure that these IP addresses are not part of a DHCP pool.

- Click **CONNECT**.

The **Cluster Configuration** screen appears.

Figure 9: Cluster Configuration Screen

Step 6 In the **Cluster Configuration** screen, enter the following information:

- From the **NETWORK PLUGIN FOR TENANT K8S CLUSTERS** drop-down list, choose one of the following options for network connectivity:

- ACI-CNI
- Calico
- Contiv (Tech Preview)

Note For more information on the network plugins, see [Container Network Interface Plugins](#).

- In the **CIDR FOR KUBERNETES POD NETWORK** field, **192.168.0.0/16** is displayed as the default pod network CIDR of the Kubernetes cluster for the installer. If the CIDR IP addresses conflict with the tenant cluster VM network or the vCenter network, you need to set a different value for the CIDR.

This CIDR is the single large CIDR from which smaller CIDRs are automatically allocated to each node for allocating IP addresses to the pods in the Kubernetes cluster. For more information, refer to <https://kubernetes.io/docs/setup/scratch/#network-connectivity>.

- In the **CCP CONTROLLER MASTER NODE VIRTUAL IP** field, enter the IP address that is used to support a Cisco Container Platform upgrade.

This IP address needs to be in the same subnet, or it should be routable from the DHCP IP address for the controller VMs.

- d) In the **USERNAME FOR NODE ACCESS** field, enter the username of the user who can ssh into the Cisco Container Platform Control Plane nodes.
- e) In the **SSH PUBLIC KEY FOR INSTALLER NODE ACCESS** field, enter an ssh public key.

You can use this key to ssh to the Control Plane nodes.

- Note**
- Ensure that you enter the public key in a single line.
 - If you do not have an SSH key pair, you can generate it using the **ssh-keygen** command.

- f) Click **NEXT**.

The **Control Plane Settings** screen appears.

Figure 10: Control Plane Settings Screen

Step 7 In the **Control Plane Settings** screen, enter the following information:

- a) In the **CONTROL PLANE NAME** field, enter the name of the Cisco Container Platform cluster.

- Note**
- The cluster name must start with an alphanumeric character (a-z, A-Z, 0-9). It can contain a combination of hyphen (-) symbols and alphanumeric characters (a-z, A-Z, 0-9). The maximum length of the cluster name is 46 characters.
 - Deployment of the installer VM fails if another Control Plane cluster with the same name already exists on the same datastore. You must ensure that you specify a unique name for the Control Plane cluster.

- b) In the **CCP VERSION** field, enter the version of the Cisco Container Platform cluster.
- c) From the **CCP LICENSE ENTITLEMENT** drop-down list, choose an entitlement option that indicates the type of Smart Licensing that you want to use.

Note The **Partner** option will only be used in conjunction with a **Not for Retail (NFR)** or **Trial** license.

- d) In the **CREATE YOUR ADMIN PASSPHRASE** field, enter the passphrase you want to use for an **Administrator** user of the Cisco Container Platform Control Plane.

- e) Expand **Advanced Settings**, in the **NTP SERVERS** field, enter the list of any NTP servers in your environment.
- f) Click **DEPLOY** and then monitor the installation progress through the vCenter **Web console**.

Note You can use the ssh private key to access the Installer, control plane VMs, or the tenant cluster VMs. However, logging into these VMs using a username and password is not supported.
