



# Configure the 44/56-Core Appliance Using the Browser-Based Wizard

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- [Appliance Configuration Overview, on page 1](#)
- [Configure an Appliance Using the Install Configuration Wizard, on page 2](#)
- [Configure the Primary Node Using the Advanced Install Configuration Wizard, on page 14](#)
- [Configure a Secondary Node Using the Advanced Install Configuration Wizard, on page 30](#)
- [Upgrade to the Latest Catalyst Center Release, on page 46](#)

## Appliance Configuration Overview

You can deploy the 44- or 56-core appliance in your network in one of the following modes:

- **Standalone:** As a single node offering all the functions. This option is usually preferred for initial or test deployments and in smaller network environments. If you choose the Standalone mode for your initial deployment, this will be your first, or primary, node. Note that you can add more appliances later to form a cluster.
- **Cluster:** As a node that belongs to a three-node cluster. In this mode, all the services and data are shared among the hosts. This is the preferred option for large deployments. If you choose the Cluster mode for your initial deployment, be sure to finish configuring the primary node before configuring the secondary nodes.

To proceed, first configure the primary node in your cluster. Then, if you have installed three appliances and want to add the second and third nodes to your cluster, configure the secondary nodes.

## Browser-Based Configuration Wizards

Catalyst Center offers two browser-based wizards that you can use to configure your appliance. Read their descriptions to determine which of these wizards you should complete.



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**Important**

These wizards are available for use if you are configuring a new appliance that came with the latest 2.3.7.x release of Catalyst Center already installed. If you upgraded from a previous version and want to use these wizards, contact Cisco TAC for assistance.

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### Install Configuration Wizard

This wizard streamlines the appliance configuration process by setting default values for the Enterprise, Management, and Internet Access interfaces (which all reside on the appliance's Enterprise port) as well as the Intracluster interface. Use this wizard if you are okay with using the default interface settings and want to get your appliance up and running as quickly as possible. Note that you cannot use this wizard to do the following:

- To configure a cluster's secondary nodes.
- To configure a first-generation 44-core Catalyst Center appliance.

### Advanced Install Configuration Wizard

This wizard provides access to all of the available appliance settings that you can modify. Use this wizard if you want to specify interface settings that are different from the default settings. Also use this wizard if you are configuring the second or third node in your cluster.

## Browser-Based Wizard Prerequisites

To use either of the browser-based wizards and ensure that it configures your appliance properly, complete the following tasks:

- Designate the Enterprise interface on your appliance to use the IP address, subnet mask, and default gateway that a DHCP server assigns to it. When you configure this interface in the wizard, you will not be able to change the IP address or subnet mask that have been assigned to it. You will only be able to change its default gateway. The topics in this chapter assume that the Enterprise interface was chosen for this purpose.
- Confirm that the IP address assigned by the DHCP server is reachable by the machine from which you will complete the wizard.
- For the Enterprise and Intracluster interfaces, verify that both interfaces are connected and in the **UP** state.

If you want to specify your own IP address, subnet mask, and default gateway for your appliance's Enterprise interface (and not use the values assigned by a DHCP server), ensure that you complete the Static IP Address Settings screen.

## Configure an Appliance Using the Install Configuration Wizard

Perform this procedure to configure either a three-node cluster's primary node or a standalone node using the Install configuration wizard. The wizard simplifies the configuration process by setting up the Enterprise, Management, and Internet interfaces on the same port using default settings. The following second-generation Catalyst Center appliances support configuration using this wizard:

- 44-core appliance: Cisco part number DN2-HW-APL
- 44-core promotional appliance: Cisco part number DN2-HW-APL-U
- 56-core appliance: Cisco part number DN2-HW-APL-L
- 56-core promotional appliance: Cisco part number DN2-HW-APL-L-U

The first-generation 44-core Catalyst Center appliance (Cisco part number DN1-HW-APL) *cannot* be configured using this wizard.



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**Important**

- You can only use this wizard to complete the initial configuration of a new Catalyst Center appliance. To reimage an appliance that's been configured previously, you will need to use the Maglev Configuration wizard (see [Configure the Appliance Using the Maglev Wizard](#)).
  - You cannot use this wizard to configure the second or third appliance in a three-node cluster. To do so, complete the steps that are described in [Configure a Secondary Node Using the Advanced Install Configuration Wizard, on page 30](#). Also, you cannot use this wizard to enable LACP mode on your appliance's Enterprise and Intracluster interfaces.
  - Before you configure any of the appliances in a three-node cluster, ensure that you have logged out of those appliances. Otherwise, the Quick Start workflow (which you complete to discover your network's devices and enable telemetry) will not start after you have configured your cluster's appliances and log in to Catalyst Center for the first time.
  - Ensure that all of the IP addresses you enter while completing this procedure are valid IPv4 addresses with valid IPv4 netmasks. Also make sure that the addresses and their corresponding subnets do not overlap. Service communication issues can result if they do.
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**Before you begin**

Ensure that you:

- Installed the Catalyst Center software image onto your appliance, as described in [Reimage the Appliance](#).



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**Important**

This is only applicable if you are going to configure a promotional appliance because the Catalyst Center software image is not preinstalled on the following appliances:

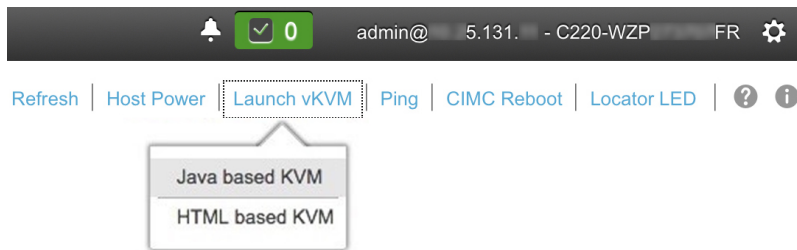
- 44-core promotional appliance (Cisco part number DN2-HW-APL-U)
  - 56-core promotional appliance: (Cisco part number DN2-HW-APL-L-U)
- 
- Collected all of the information called for in [Required IP Addresses and Subnets](#) and [Required Configuration Information](#).
  - Installed the appliance, as described in [Appliance Installation Workflow](#).
  - Configured Cisco IMC browser access on this appliance, as described in [Enable Browser Access to Cisco Integrated Management Controller](#).
  - Checked that the appliance's ports and the switches it uses are properly configured, as described in [Execute Preconfiguration Checks](#).
  - Are using a browser that is compatible with Cisco IMC and Catalyst Center. For a list of compatible browsers, see the [Release Notes](#) for the version of Catalyst Center that you are installing.
  - Enabled ICMP on the firewall between Catalyst Center and the DNS servers you will specify in the following procedure. This wizard uses Ping to verify the DNS server you specify. This ping can be

blocked if there is a firewall between Catalyst Center and the DNS server and ICMP is not enabled on that firewall. When this happens, you will not be able to complete the wizard.

**Step 1** Start the Install configuration wizard:

- a) Point your browser to the Cisco IMC IP address you set during the Cisco IMC GUI configuration you performed, then log in to the Cisco IMC GUI as the Cisco IMC user (see [Enable Browser Access to Cisco Integrated Management Controller](#)).

After successful login, the appliance displays the **Cisco Integrated Management Controller Chassis Summary** window, with a blue link menu at the upper right, as shown below.



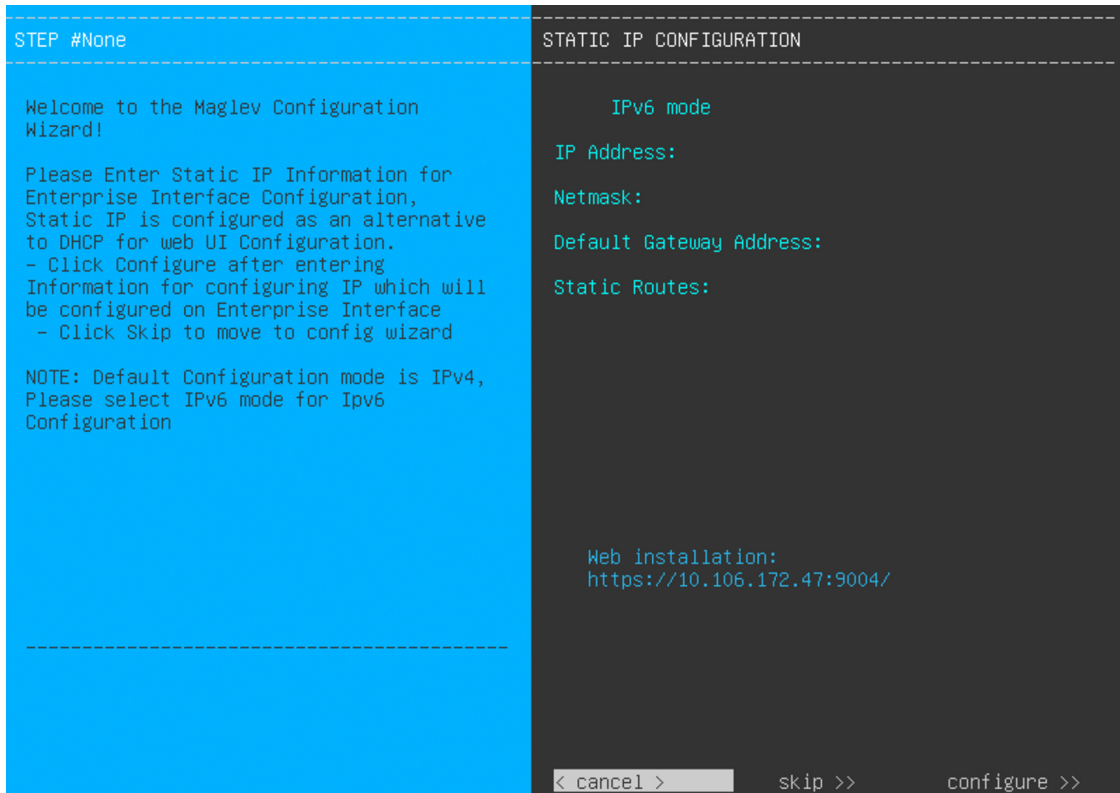
- b) From the blue link menu, choose **Launch KVM** and then choose either **Java based KVM** or **HTML based KVM**. If you choose the Java-based KVM, you will need to launch the Java startup file from your browser or file manager in order to view the KVM console in its own window. If you choose the HTML-based KVM, it will launch the KVM console in a separate browser window or tab automatically.

Irrespective of the KVM type you choose, use the KVM console to monitor the progress of the configuration and respond to Maglev Configuration Wizard prompts.

- c) With the KVM displayed, reboot the appliance by making one of the following selections:
- In the main Cisco IMC GUI browser window: Choose **Host Power > Power Cycle**. Then switch to the KVM console to continue.
  - In the KVM console, choose **Power > Power Cycle System (cold boot)**.

If asked to confirm your choice to reboot the appliance, click **OK**.

After displaying the reboot messages, the KVM console displays the **Static IP Configuration** screen.



Note the URL listed in the **Web Installation** field.

d) Do one of the following:

- If you want a DHCP server to assign an IP address, subnet mask, and default gateway to your appliance's Enterprise interface, click **Skip**.
- If you want to assign your own IP address, subnet mask, and default gateway to your appliance's Enterprise interface, enter the information described in the following table and then click **Configure**.

**Note** You only need to specify an IP address, subnet mask, and default gateway for your appliance's Enterprise interface.

IPv6 Mode check box	If you want to configure an IPv6 address, check this check box.
IP Address field	Enter the static IP address that you want to use.
Netmask field	Enter the netmask for the IP address you specified in the previous field: <ul style="list-style-type: none"> <li>• If you entered an IPv4 address, you can enter either a netmask or CIDR address.</li> <li>• If you entered an IPv6 address, you can only enter a CIDR address.</li> </ul>
Default Gateway Address field	Specify the default gateway that will be used to route traffic.

Static Routes field	Enter one or more static routes in the following format, separated by spaces: <code>&lt;network&gt;/&lt;netmask&gt;/&lt;gateway&gt;</code> . This is usually required on the Management port only.
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The KVM console displays the Maglev Configuration wizard welcome screen.

```

Welcome to the Maglev Configuration Wizard!

The wizard will walk you through the steps to configure this host. Select one of the options below to specify how you
would like to configure this host:

Start a Cisco DNA Center Cluster
Join a Cisco DNA Center Cluster

< exit >

```

- e) To bring up the **Appliance Configuration** screen, open the URL that was displayed in the **Static IP Configuration** screen.

- f) Click the **Start a Catalyst Center Cluster** radio button, then click **Next**.

Cisco Catalyst Center Appliance Configuration

Welcome to Cisco Catalyst Center

Before you can use Cisco Catalyst Center, first complete the appropriate appliance configuration workflow. Which workflow matches your needs?

**Install**


Configure a standalone node or cluster's primary node.

Use this quick, simplified wizard to set up the Enterprise, Management, and Internet interfaces on the same interface with default settings.

**Advanced Install**

Configure a standalone node or any node in a cluster.

Use this wizard to access all of the available appliance configuration options.



- g) Click the **Install** radio button, then click **Start**.


The **Overview** slider opens. Click > to view a summary of the tasks that the wizard will help you complete.

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## Overview

Complete the basic tasks required to configure your appliance for use with Cisco Catalyst Center.

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- h) Click **Start Workflow** to start the wizard.

The **Appliance Interface Overview** screen opens, providing a description of the four interfaces that are available on your Catalyst Center appliance:

Cisco Catalyst Center
Install

## Appliance Interface Overview

In order for Cisco Catalyst Center to operate properly, you need to configure four interfaces on your appliance:

1. **Enterprise Network Interface:** Connects your appliance to the Enterprise network.
2. **Intracluster Link Interface:** Connects your appliance to your cluster.
3. **Management Network Interface:** (Optional) Accesses the Cisco Catalyst Center GUI from your Management network.
4. **Internet Access Interface:** (Optional) Accesses the internet.

In this workflow, the Intracluster Link Interface is predefined. The other 3 interfaces will be configured together on the Enterprise port.

Exit
Next

The wizard will help you configure the Enterprise and Intracluster ports, which are required for Catalyst Center functionality. If the wizard fails to display either or both of these ports in the next screen, they may be non-functional or disabled. If you discover that they are non-functional, choose **Exit** to exit the wizard immediately. Be sure you have completed all of the steps provided in [Execute Preconfiguration Checks](#) before resuming configuration or contacting the Cisco Technical Assistance Center (TAC).

**Step 2** Complete the Install configuration wizard:

a) Click **Next**.

The **Configure The Enterprise Port** screen opens.

Cisco Catalyst Center
Install

### Configure the Enterprise Port

In this workflow, the Management Network and Internet Access Interfaces are on the same port as the Enterprise Network Interface. You can enter up to three DNS addresses. If your network resides behind a firewall, you must [allow access to these URLs](#) and [open these ports](#). If you are setting up a multinode cluster, the cluster's second and third nodes must reside in the same subnet as the primary node. [Download the Intracluster Link interface's information](#)

**Enterprise & Management Network & Internet Access Interface**

LACP Mode Disabled

IP Address 22.22.22.192

Netmask 24

Default Gateway 12.2.2.2

Static Routes 2

DNS\*

71.70.168.183

Enter an IPv4 address

**Intracluster Link Interface**

Interface Name cluster

LACP Mode Disabled

IP Address 169.254.6.66

Subnet Mask 255.255.255.128

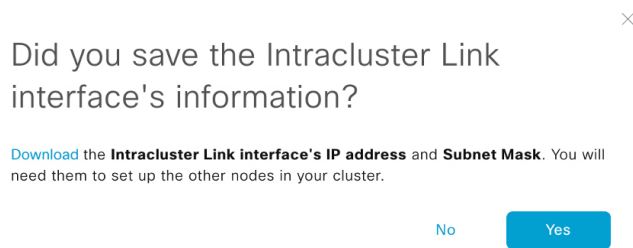
Exit
Next

The configuration wizard sets up the Enterprise, Management, and Internet Access interfaces on the Enterprise port. The wizard also prepopulates values for almost all of the listed parameters.



If your network resides behind a firewall, do the following:

- Click the **allow access to these URLs** link to view a pop-up window that lists the URLs that Catalyst Center must be able to access.
  - Click the **open these ports** link to view a pop-up window that lists the network service ports that must be available for Catalyst Center to use.
- b) In the **DNS** field, enter the IP address of the preferred DNS server.  
To enter additional DNS servers, click the **Add (+)** icon.
- Important** You can configure a maximum of three DNS servers. Problems can occur if you configure more than three DNS servers for an appliance.
- c) Click **Next**.
- d) When prompted, click **Yes** to copy the Intracluster interface's IP address and subnet mask.



You'll need this information when you configure your cluster's secondary nodes.

The wizard validates the information you have entered, confirms that the port is up, and notifies you of any settings that need to be changed before you can proceed with the wizard. If the settings you have entered are valid and the port is up, the wizard's **Interface to Port Configuration** screen opens.

Cisco Catalyst Center Install

### Interface to Port Configuration

We are going to configure the following interfaces. Clicking Next will begin the configuration process. This may take up to a minute to configure.

**Enterprise & Management Network & Internet Access Interface**

- LACP Mode Disabled
- IP Address 22.22.22.192
- Netmask 24
- Default Gateway 12.2.2.2
- Static Routes 2
- DNS\* 71.70.168.183

**Intracluster Link Interface**

- Interface Name cluster
- LACP Mode Disabled
- IP Address 169.254.6.66
- Subnet Mask 255.255.255.128

Exit Next

- e) Click **Next**.
- f) Review the interface settings that have been set, then click **Configure**.

- g) After initial interface configuration has completed, click **Next** to proceed to the next wizard screen.

The **Configure Proxy Server Information** screen opens.

- h) Do one of the following, then click **Next**:

- If your network does *not* use a proxy server to access the internet, click the **No** radio button.
- If your network does use a proxy server to access the internet, enter the values described in the following table:

**Table 1: Primary Node Entries for Proxy Server Settings**

Proxy Server field	Enter the URL or host name of an HTTPS network proxy used to access the Internet. <b>Note</b> Connection from Catalyst Center to the HTTPS proxy is supported only via HTTP in this release.
Port field	Enter the port that your appliance used to access the network proxy.
Username field	Enter the username used to access the network proxy. If no proxy login is required, leave this field blank.
Password field	Enter the password used to access the network proxy. If no proxy login is required, leave this field blank.

The wizard validates the information that you entered and notifies you of any settings that need to be changed before you can proceed with the wizard. If the settings you have entered are valid, the wizard's **Advanced Appliance Settings** screen opens.

i) Enter configuration values for your cluster, then click **Next**.

**Table 2: Primary Node Entries for Advanced Appliance Settings**

Cluster Virtual IP Addresses	
<p>To access from Enterprise Network and For Intracluster Access fields</p>	<p>Enter the virtual IP address that will be used for traffic between the cluster and both the Enterprise and Intracluster interfaces on your appliance. This is required for single-node clusters that will be converted into a three-node cluster in the future. If you have a single-node cluster setup and don't plan to move to a three-node cluster setup, you can leave the fields in this section blank.</p> <p><b>Important</b> If you choose to configure a virtual IP address, you must enter one for each configured network interface. You will not be able to complete the wizard unless you do so. These addresses are tied to the cluster link's status, which must be in the <b>UP</b> state.</p>
<p>Fully Qualified Domain Name (FQDN) field</p>	<p>Enter the fully qualified domain name (FQDN) for your cluster. Catalyst Center does the following with this hostname:</p> <ul style="list-style-type: none"> <li>• It uses this hostname to access your cluster's web interface and the Representational State Transfer (REST) APIs used by devices in the enterprise network that Catalyst Center manages.</li> <li>• In the Subject Alternative Name (SAN) field of Catalyst Center certificates, it uses the FQDN to the define the Plug and Play server that should be used for device provisioning.</li> </ul>
<p><b>CLI Credentials</b></p> <p>Enter and confirm the password for the <code>maglev</code> user.</p>	
<p><b>NTP Server Settings</b></p>	

NTP Server field	<p>Enter at least one NTP server address or hostname. To enter additional NTP server addresses or hostnames, click the <b>Add (+)</b> icon.</p> <p>For a production deployment, Cisco recommends that you configure a minimum of three NTP servers.</p>
Turn On NTP Authentication check box	<p>To enable the authentication of your NTP server before it's synchronized with Catalyst Center, check this check box and then enter the following information:</p> <ul style="list-style-type: none"> <li>The NTP server's key ID. Valid values range between 1 and 4294967295 (<math>2^{32}-1</math>).</li> </ul> <p>This value corresponds to the key ID that's defined in the NTP server's key file.</p> <ul style="list-style-type: none"> <li>The SHA-1 key value associated with the NTP server's key ID. This 40-character hex string resides in the NTP server's key file.</li> </ul> <p><b>Note</b> Ensure that you enter a key ID and key value for each NTP server that you configured in the previous field.</p>

The wizard validates the information that you entered and notifies you of any settings that need to be changed before you can proceed with the wizard. If the settings you entered are valid, the wizard's **Summary** screen opens.

**Summary**

Please review the settings that you have entered. If you need to make any changes, click the appropriate Edit link and make the necessary updates. [Download the generated configuration in JSON format here](#), this will be important for future reference. When you are happy with your settings, click Start Configuration.

Enterprise Port [Edit](#)

Enterprise & Management Network & Internet Access Interface

- LACP Mode: Disabled
- IP Address: 22.22.22.192
- Netmask: 24
- Default Gateway: 12.2.2.2
- Static Routes: 2
- DNS\*: 71.70.168.183

Intracluster Link Interface

- Interface Name: cluster
- LACP Mode: Disabled
- IP Address: 169.254.6.66
- Subnet Mask: 255.255.255.128

[Exit](#) [Start Configuration](#)

- j) Scroll to the bottom of the screen and review all of the settings that you have entered while completing the wizard. If necessary, click the appropriate **Edit** link to open the wizard screen in which you want to make updates.

**Note** To download the appliance configuration as a JSON file, click the **here** link.

- k) To complete the configuration of your Catalyst Center appliance, click **Start Configuration**.

The wizard screen continuously updates during the process, indicating the tasks that are currently being completed and their progress, as well as any errors that have occurred. To save a local copy of this information as a text file, click the **Download** link.

Cisco Catalyst Center
Install

## Appliance Configuration In Progress

It should take about 30 minutes to configure the appliance. Do not press your browser's back button or refresh this page. The page will update after configuration completes.

50%

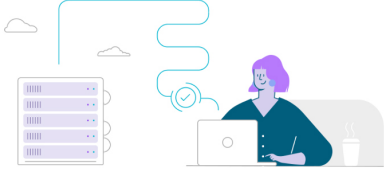
Initializing the cluster using kubeadm

Started: 04/09/2020 12:15:36 Download

```

Apr 13 17:40:20 2020 GMT
2024-03-22T16:04:38.088Z13 | front-proxy-client.crt Apr 13 17:40:20 2020
GMT Apr 13 17:40:20 2021 GMT
2024-03-22T16:04:38.088Z14 | kubelet.conf Apr 13 12:12:14 2020 GMT Apr
13 17:40:21 2021 GMT
2024-03-22T16:04:38.088Z15 | admin.conf Apr 13 12:12:14 2020 GMT Apr
13 17:40:21 2021 GMT
2024-03-22T16:04:38.088Z16 | scheduler.conf Apr 13 12:12:14 2020 GMT
Apr 13 17:40:22 2021 GMT
2024-03-22T16:04:38.088Z17 | controller-manager.conf Apr 13 12:12:14
2020 GMT Apr 13 17:40:22 2021 GMT
2024-03-22T16:04:38.088Z18 | -----
-----

```


**Step 3**

After appliance configuration completes, click the copy icon in the **Cisco Catalyst Center - Admin Credential** area to copy the default admin superuser password.

Cisco Catalyst Center
Install

## Appliance Configuration Complete!

**Important:** Take note of the credentials displayed below. You can click the copy icon if you want to save them locally. You will use these credentials to log in to Cisco Catalyst Center for the first time. After logging in, you will be prompted to change the password.


100%

CISCO CATALYST CENTER - ADMIN CREDENTIAL

Username	admin
password	maglev1@3

What's Next?

Open Cisco Catalyst Center



**Important** Catalyst Center automatically sets this password when you complete the Install configuration wizard. Ensure that you click the copy icon before you proceed. Otherwise, you will not be able to log in to Catalyst Center for the first time.

**Note** As a security measure, you'll be prompted to change this password after you log in. For more information, see [Complete the Quick Start Workflow](#).

### What to do next

As you are deploying this appliance in standalone mode, continue by performing the first-time setup: [First-Time Setup Workflow](#).

# Configure the Primary Node Using the Advanced Install Configuration Wizard

Perform the following steps to configure the first installed appliance as the primary node using the Advanced Install configuration wizard. You must always configure the first appliance as the primary node, whether it will operate standalone or as part of a cluster.



#### Important

- The following second-generation Catalyst Center appliances support configuration using this wizard:
  - 44-core appliance: Cisco part number DN2-HW-APL
  - 44-core promotional appliance: Cisco part number DN2-HW-APL-U
  - 56-core appliance: Cisco part number DN2-HW-APL-L
  - 56-core promotional appliance: Cisco part number DN2-HW-APL-L-U

The first-generation 44-core Catalyst Center appliance (Cisco part number DN1-HW-APL) *cannot* be configured using this wizard.

- You can only use this wizard to complete the initial configuration of a new Catalyst Center appliance. To reimage an appliance that's been configured previously, you will need to use the Maglev Configuration wizard (see [Configure the Appliance Using the Maglev Wizard](#)).
- Before you configure the appliances in a three-node cluster, ensure that you have logged out of those appliances. Otherwise, the Quick Start workflow (which you complete to discover your network's devices and enable telemetry) will not start after you have configured your cluster's appliances and log in to Catalyst Center for the first time.
- Ensure that all of the IP addresses you enter while completing this procedure are valid IPv4 addresses with valid IPv4 netmasks. Also make sure that the addresses and their corresponding subnets do not overlap. Service communication issues can result if they do.

If you are configuring the installed appliance as a secondary node for an existing cluster that already has a primary node, follow the steps in [Configure a Secondary Node Using the Advanced Install Configuration Wizard, on page 30](#) instead.

### Before you begin

Ensure that you:

- Installed the Catalyst Center software image onto your appliance, as described in [Reimage the Appliance](#).

**Important**

This is only applicable if you are going to configure a promotional appliance because the Catalyst Center software image is not preinstalled on the following appliances:

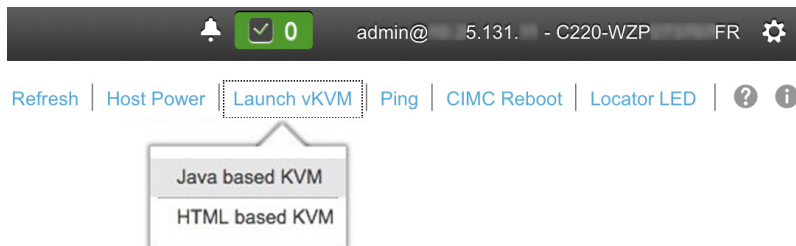
- 44-core promotional appliance (Cisco part number DN2-HW-APL-U)
  - 56-core promotional appliance: (Cisco part number DN2-HW-APL-L-U)
- 
- Collected all of the information called for in [Required IP Addresses and Subnets](#) and [Required Configuration Information](#).
  - Installed the first appliance, as described in [Appliance Installation Workflow](#).
  - Configured Cisco IMC browser access on the primary node, as described in [Enable Browser Access to Cisco Integrated Management Controller](#).
  - Checked that the primary node's ports and the switches it uses are properly configured, as described in [Execute Preconfiguration Checks](#).
  - Are using a browser that is compatible with Cisco IMC and Catalyst Center. For a list of compatible browsers, see the [Release Notes](#) for the version of Catalyst Center you are installing.
  - Enabled ICMP on the firewall between Catalyst Center and both the default gateway and the DNS server you specify in the following procedure. The wizard uses ping to verify the gateway and DNS server you specify. This ping might get blocked if a firewall is in place and ICMP is not enabled on that firewall. When this happens, you will not be able to complete the wizard.

**Step 1**

Start the Advanced Install configuration wizard:

- a) Point your browser to the Cisco IMC IP address you set during the Cisco IMC GUI configuration you performed, then log in to the Cisco IMC GUI as the Cisco IMC user (see [Enable Browser Access to Cisco Integrated Management Controller](#)).

After successful login, the appliance displays the **Cisco Integrated Management Controller Chassis Summary** window, with a blue link menu at the upper right, as shown below.



- b) From the blue link menu, choose **Launch KVM** and then choose either **Java based KVM** or **HTML based KVM**. If you choose the Java-based KVM, you will need to launch the Java startup file from your browser or file manager in order to view the KVM console in its own window. If you choose the HTML-based KVM, it will launch the KVM console in a separate browser window or tab automatically.

Irrespective of the KVM type you choose, use the KVM console to monitor the progress of the configuration and respond to Maglev Configuration Wizard prompts.

- c) With the KVM displayed, reboot the appliance by making one of the following selections:
- In the main Cisco IMC GUI browser window: Choose **Host Power > Power Cycle**. Then switch to the KVM console to continue.
  - In the KVM console: Choose **Power > Power Cycle System (cold boot)**.

If asked to confirm your choice to reboot the appliance, click **OK**.

After displaying reboot messages, the KVM console displays the **Static IP Configuration** screen.

```

STEP #None
-----
Welcome to the Maglev Configuration
Wizard!

Please Enter Static IP Information for
Enterprise Interface Configuration,
Static IP is configured as an alternative
to DHCP for web UI Configuration.
- Click Configure after entering
Information for configuring IP which will
be configured on Enterprise Interface
- Click Skip to move to config wizard

NOTE: Default Configuration mode is IPv4,
Please select IPv6 mode for Ipv6
Configuration

-----
STATIC IP CONFIGURATION

IPv6 mode
IP Address:
Netmask:
Default Gateway Address:
Static Routes:

Web installation:
https://10.106.172.47:9004/

-----
< cancel >      skip >>      configure >>

```

Note the URL listed in the **Web Installation** field.

- d) Do one of the following:
- If you want a DHCP server to assign an IP address, subnet mask, and default gateway to your appliance's Enterprise interface, click **Skip**.
  - If you want to assign your own IP address, subnet mask, and default gateway to your appliance's Enterprise interface, enter the information described in the following table and then click **Configure**.

**Note** You only need to specify an IP address, subnet mask, and default gateway for your appliance's Enterprise interface.

IPv6 Mode check box	If you want to configure an IPv6 address, check this check box.
IP Address field	Enter the static IP address that you want to use.



Netmask field	Enter the netmask for the IP address you specified in the previous field: <ul style="list-style-type: none"> <li>• If you entered an IPv4 address, you can enter either a netmask or CIDR address.</li> <li>• If you entered an IPv6 address, you can only enter a CIDR address.</li> </ul>
Default Gateway Address field	Specify the default gateway that will be used to route traffic.
Static Routes field	Enter one or more static routes in the following format, separated by spaces: <code>&lt;network&gt;/&lt;netmask&gt;/&lt;gateway&gt;</code> . This is usually required on the Management port only.

The KVM console displays the Maglev Configuration wizard welcome screen.

```

Welcome to the Maglev Configuration Wizard!

The wizard will walk you through the steps to configure this host. Select one of the options below to specify how you
would like to configure this host:

Start a Cisco DNA Center Cluster
Join a Cisco DNA Center Cluster

< exit >

```

- e) To bring up the **Appliance Configuration** screen, open the URL that was displayed in the **Static IP Configuration** screen.

Cisco Catalyst Center Appliance Configuration

Welcome to Cisco Catalyst Center


Are you starting a new Cisco Catalyst Center Cluster or joining an existing one?

**Start A Cisco Catalyst Center Cluster**

This appliance will be the primary node of a cluster.

**Join A Cisco Catalyst Center Cluster**

This appliance will be added as a node to the primary node of a cluster.



[Next](#)

- f) Click the **Start a Cisco Catalyst Center Cluster** radio button, then click **Next**.

Cisco Catalyst Center Appliance Configuration

Welcome to Cisco Catalyst Center

Before you can use Cisco Catalyst Center, first complete the appropriate appliance configuration workflow. Which workflow matches your needs?

**Install**


Configure a standalone node or cluster's primary node.

Use this quick, simplified wizard to set up the Enterprise, Management, and Internet interfaces on the same interface with default settings.

**Advanced Install**

Configure a standalone node or any node in a cluster.

Use this wizard to access all of the available appliance configuration options.



[Back](#) [Start](#)

- g) Click the **Advanced Install** radio button, then click **Start**.
- The **Overview** slider opens. Click > to view a summary of the tasks that the wizard will help you complete.

## Overview

Complete the basic tasks required to configure your appliance for use with Cisco Catalyst Center.



Start Workflow



- h) Click **Start Workflow** to start the wizard.

The **Appliance Interface Overview** screen opens, providing a description of the four appliance interfaces that you can configure.

Cisco Catalyst Center
Advanced Install

### Appliance Interface Overview

In order for Cisco Catalyst Center to operate properly, you need to configure four interfaces on your appliance:

1. **Enterprise Network Interface:** Connects your appliance to the Enterprise network.
2. **Intracluster Link Interface:** Connects your appliance to your cluster.
3. **Management Network Interface:** (Optional) Accesses the Cisco Catalyst Center GUI from your Management network.
4. **Internet Access Interface:** (Optional) Accesses the internet.

In this workflow, the Intracluster Link Interface is predefined. The other 3 interfaces will be configured together on the Enterprise port.

---

Exit
Next

**Important** At a minimum, you must configure the interfaces on your appliance's Enterprise and Cluster ports, as they are required for Catalyst Center functionality. If the wizard fails to display either or both of these ports during the course of configuration, they may be non-functional or disabled. If you discover that they are non-functional, choose **Exit** to exit the wizard immediately. Be sure you have completed all of the steps provided in [Execute Preconfiguration Checks](#) before resuming configuration or contacting the Cisco Technical Assistance Center (TAC).

**Step 2** Complete the Advanced Install configuration wizard:

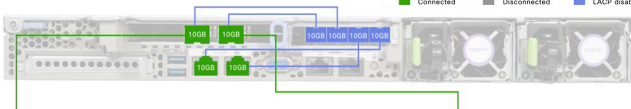
- a) Click **Next**.

The **How would you like to set up your appliance interfaces?** screen opens.

Cisco Catalyst Center Advanced Install

### How would you like to set up your appliance interfaces?

Both Enterprise Network and Intracluster Link Interfaces have their own designated port. You can decide whether to have a separate dedicated port for either Management Network Interface and Internet Access Interface. Before you start, reserve the IP addresses necessary for configuration. If your network resides behind a firewall, be sure to [allow access to these URLs](#) and [open these ports](#).



Enterprise Network Interface  Intracluster Link Network

The Enterprise Network Interface and Intracluster Link Interface will be configured using the two 10-Gbps ports as shown above.

Would you like to have a dedicated Management Network Interface?

Yes  No

Would you like to have a dedicated Internet Access Interface?

Yes  No

[Exit](#) [Back](#) [Next](#)

If your network resides behind a firewall, do the following:

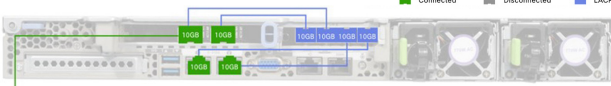
- Click the **allow access to these URLs** link to view a pop-up window that lists the URLs that Catalyst Center must be able to access.
- Click the **open these ports** link to view a pop-up window that lists the network service ports that must be available for Catalyst Center to use.

b) Indicate whether you want to configure dedicated Management and Internet Access interfaces, then click **Next**.

The **Configure Your Enterprise Network Interface** screen opens.

Cisco Catalyst Center Advanced Install

### Configure Your Enterprise Network Interface



Enterprise Network Interface

LACP Mode Disabled

Host IP Address\*  
22.22.22.192 Enter an IPv4 address

Subnet Mask\*  
24 Enter an IPv4 address or a number from 1 - 32

Default Gateway IP Address  
22.22.22.1 Enter an IPv4 address

DNS  
223.33.212.22 Enter an IPv4 address +

[Add/Edit Static Route \(2\)](#)

[Exit](#) [Back](#) [Next](#)

c) Enter configuration values for the Enterprise interface, then click **Next**.

As explained in [Interface Cable Connections](#), this is a required interface used to link the appliance to the enterprise network. See [Required IP Addresses and Subnets](#) and [Required Configuration Information](#) for a more detailed description of the values you need to enter.

**Table 3: Primary Node Entries for the Enterprise Interface**

LACP Mode slider	<p>Choose one of the following network interface controller (NIC) bonding modes for the Enterprise interface:</p> <ul style="list-style-type: none"> <li>• <b>Active-Backup mode:</b> This mode provides fault tolerance by aggregating two Ethernet interfaces into a single logical channel. When the interface that's currently active goes down, the other interface takes its place and becomes active.</li> <li>• <b>LACP mode:</b> This mode aggregates two Ethernet interfaces that share the same speed and duplex settings into a single logical channel. This provides load balancing and higher bandwidth.</li> </ul> <p>For more information about Catalyst Center's implementation of NIC bonding, see <a href="#">NIC Bonding Overview</a>.</p>
Host IP Address field	Enter the IP address for the Enterprise port. This is required.
Subnet Mask field	Enter the netmask for the port's IP address. This is required.
Default Gateway IP Address field	<p>Enter a default gateway IP address to use for the port.</p> <p><b>Important</b> Ensure that you enter a default gateway IP address for at least one of your appliance's interfaces. Otherwise, you will not be able to complete the configuration wizard.</p> <p><b>Note</b> You designated this interface to use the default gateway assigned to it by a DHCP server. Complete the following steps to specify a different gateway:</p> <ol style="list-style-type: none"> <li>1. Delete the IP address that is currently listed in this field and then click <b>Exit</b>. This will bring you back to the first wizard screen.</li> <li>2. Return to the Enterprise port's wizard screen and enter the gateway IP address you want to use.</li> </ol>
DNS field	<p>Enter the IP address of the preferred DNS server.</p> <p>To enter additional DNS servers, click the <b>Add (+)</b> icon.</p> <p><b>Important</b></p> <ul style="list-style-type: none"> <li>• For each node in your cluster, configure a maximum of three DNS servers. Problems can occur if you configure more than three DNS servers for an appliance.</li> <li>• For NTP, ensure port 123 (UDP) is open between Catalyst Center and your NTP server.</li> </ul>

The wizard validates the information you have entered, confirms that the port is up, and notifies you of any settings that need to be changed before you can proceed with the wizard. If the settings you have entered are valid and the port is up, the wizard's **Configure Your Intracluster Interface** screen opens.

- d) Enter configuration values for your Intracluster interface, then click **Next**.

As explained in [Interface Cable Connections](#), this required port is used to link the appliance to your cluster. See [Required IP Addresses and Subnets](#) and [Required Configuration Information](#) for a more detailed description of the values you need to enter.

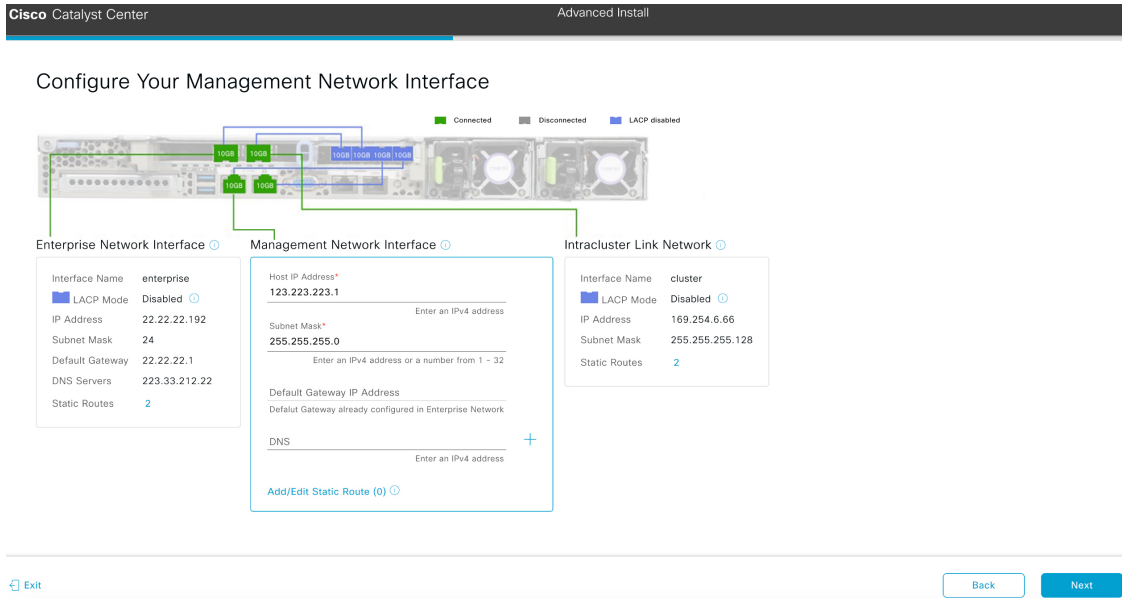
- Note**
- If you opted to configure the Enterprise and Internet Access interfaces on the same port, complete this step and then proceed to Step 2e (which describes how to configure your Management interface).
  - If you opted to configure the Enterprise and Management interfaces on the same port, complete this step and then skip ahead to Step 2f (which describes how to configure your Internet Access interface).
  - If you opted to configure the Enterprise, Management, and Internet Access interfaces on the same port, complete this step and then skip ahead to Step 2g.

**Table 4: Primary Node Entries for the Intracluster Interface**

LACP Mode slider	<p>Choose one of the following NIC bonding modes for the Intracluster interface:</p> <ul style="list-style-type: none"> <li>• <b>Active-Backup mode:</b> This mode provides fault tolerance by aggregating two Ethernet interfaces into a single logical channel. When the interface that's currently active goes down, the other interface takes its place and becomes active.</li> <li>• <b>LACP mode:</b> This mode aggregates two Ethernet interfaces that share the same speed and duplex settings into a single logical channel. This provides load balancing and higher bandwidth.</li> </ul> <p>For more information about Catalyst Center's implementation of NIC bonding, see <a href="#">NIC Bonding Overview</a>.</p>
------------------	---

Host IP Address field	Enter the IP address for the Cluster port. This is required. Note that you cannot change the address of the Cluster port later.
Subnet Mask field	Enter the netmask for the port's IP address. This is required.

The wizard validates the information you have entered, confirms that the port is up, and notifies you of any settings that need to be changed before you can proceed with the wizard. If the settings you have entered are valid and the port is up, the wizard's **Configure Your Management Network Interface** screen opens.



- e) (Optional) Enter configuration values for the Management port, then click **Next**.

As explained in [Interface Cable Connections](#), this port is used to access the Catalyst Center GUI from your management network. If you chose to configure a dedicated Management interface, enter the information described in the following table. (See [Required IP Addresses and Subnets](#) and [Required Configuration Information](#) for a more detailed description of the values you need to enter.)

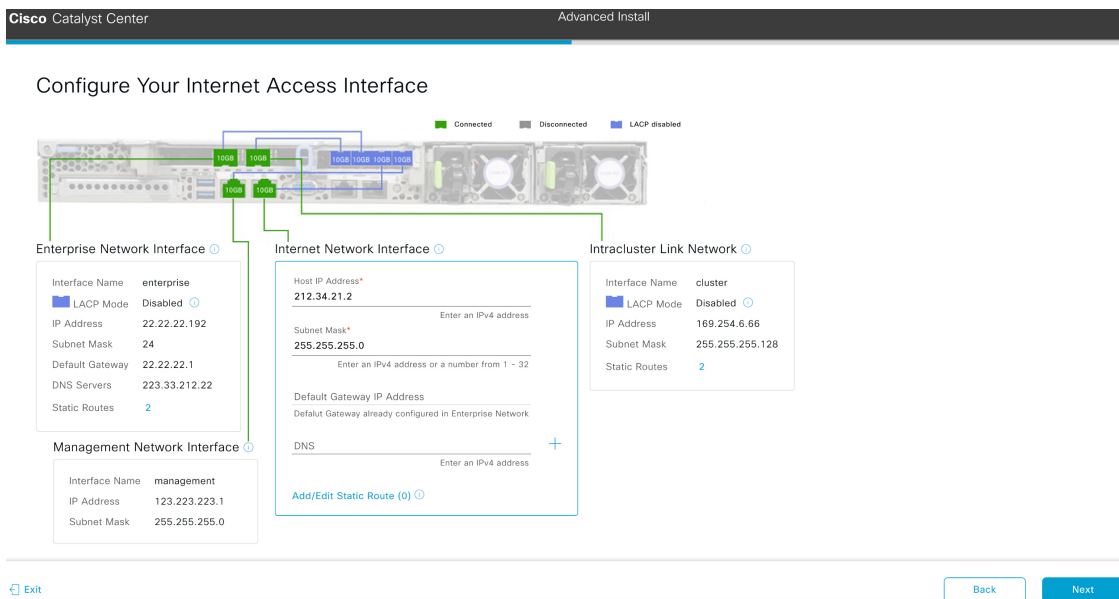
**Note** If you opted to configure the Enterprise and Internet Access interfaces on the same port, complete this step and then skip ahead to Step 2g.

**Table 5: Primary Node Entries for the Management Port**

Host IP Address field	Enter the IP address for the Management port.
Subnet Mask field	Enter the netmask for the port's IP address.
Default Gateway IP Address field	Enter a default gateway IP address to use for the port.  <b>Important</b> Ensure that you enter a default gateway IP address for at least one of your appliance's interfaces. Otherwise, you will not be able to complete the configuration wizard.

DNS field	<p>Enter the IP address of the preferred DNS server.</p> <p>To enter additional DNS servers, click the <b>Add (+)</b> icon.</p> <p><b>Important</b></p> <ul style="list-style-type: none"> <li>• For each node in your cluster, configure a maximum of three DNS servers. Problems can occur if you configure more than three DNS servers for an appliance.</li> <li>• For NTP, ensure port 123 (UDP) is open between Catalyst Center and your NTP server.</li> </ul>
-----------	---

The wizard validates the information you have entered, confirms that the port is up, and notifies you of any settings that need to be changed before you can proceed with the wizard. If the settings you have entered are valid and the port is up, the wizard's **Configure Your Internet Access Interface** screen opens.



f) (Optional) Enter configuration values for the Internet Access interface, then click **Next**.

As explained in [Interface Cable Connections](#), this is an optional port used to link the appliance to the Internet when you cannot do so through the Enterprise port. If you chose to configure a dedicated Internet Access interface, enter the information described in the following table. (See [Required IP Addresses and Subnets](#) and [Required Configuration Information](#) for a more detailed description of the values you need to enter.)

**Table 6: Primary Node Entries for the Internet Access Port**

Host IP Address field	Enter the IP address for the Internet Access port.
Subnet Mask field	Enter the netmask for the port's IP address. This is required if you entered an IP address in the previous field.
Default Gateway IP Address field	<p>Enter a default gateway IP address to use for the port.</p> <p><b>Important</b> Ensure that you enter a default gateway IP address for at least one of your appliance's interfaces. Otherwise, you will not be able to complete the configuration wizard.</p>



DNS field	<p>Enter the IP address of the preferred DNS server.</p> <p>To enter additional DNS servers, click the <b>Add (+)</b> icon.</p> <p><b>Important</b></p> <ul style="list-style-type: none"> <li>• For each node in your cluster, configure a maximum of three DNS servers. Problems can occur if you configure more than three DNS servers for an appliance.</li> <li>• For NTP, ensure port 123 (UDP) is open between Catalyst Center and your NTP server.</li> </ul>
-----------	---

The wizard validates the information you have entered, confirms that the port is up, and notifies you of any settings that need to be changed before you can proceed with the wizard. If the settings you have entered are valid and the port is up, the wizard's **Interface to Port Configuration** screen opens.

Cisco Catalyst Center Advanced Install

### Interface to Port Configuration

We are going to configure the following interfaces. Clicking Next will begin the configuration process. This may take up to a minute to configure.

**Enterprise Network Interface**

Interface Name: enterprise

LACP Mode: Disabled

IP Address: 22.22.22.192

Subnet Mask: 24

Default Gateway: 22.22.22.1

DNS Servers: 223.33.212.22

Static Routes: 2

[Edit](#)

**Internet Network Interface**

Interface Name: internet

IP Address: 212.34.21.2

Subnet Mask: 255.255.255.0

[Edit](#)

**Intracluster Link Network**

Interface Name: cluster

LACP Mode: Disabled

IP Address: 169.254.6.66

Subnet Mask: 255.255.255.128

Static Routes: 2

[Edit](#)

**Management Network Interface**

Interface Name: management

IP Address: 123.223.223.1

Subnet Mask: 255.255.255.0

[Edit](#)

[Exit](#) [Back](#) [Next](#)

g) Review the settings that you have entered for the primary node's interfaces.

If you need to make any changes, click the **Edit** link for the relevant interface.

h) When you are happy with the interface settings, click **Next**.

After initial interface configuration has completed, the **Configure Proxy Server Information** screen opens.

Cisco Catalyst Center Advanced Install

### Configure Proxy Server Information

Does your network use a proxy server to access the Internet?

Yes  No

Proxy Server\* E.g. http://example.com

Port\* Enter port number between 1 to 65535.

Username

Password

[Exit](#) [Review](#) [Back](#) [Next](#)

i) Do one of the following and then click **Next**:

- If your network does *not* use a proxy server to access the internet, click the **No** radio button.
- If your network does use a proxy server to access the internet, enter the values described in the following table:

**Table 7: Primary Node Entries for Proxy Server Settings**

Proxy Server field	Enter the URL or host name of an HTTPS network proxy used to access the Internet.  <b>Note</b> Connection from Catalyst Center to the HTTPS proxy is supported only via HTTP in this release.
Port field	Enter the port your appliance used to access the network proxy.
Username field	Enter the user name used to access the network proxy. If no proxy login is required, leave this field blank.
Password field	Enter the password used to access the network proxy. If no proxy login is required, leave this field blank.

The wizard validates the information you have entered and notifies you of any settings that need to be changed before you can proceed with the wizard. If the settings you have entered are valid and the port is up, the wizard's **Advanced Appliance Settings** screen opens.

j) Enter configuration values for your cluster, then click **Next**.

**Table 8: Primary Node Entries for Advanced Appliance Settings**

Cluster Virtual IP Addresses	
<p>To access from Enterprise Network, For Intracluster Access, To access from Management Network, and For Internet Access fields</p> <p><b>Note</b> If you configured the Management or Internet Access interface on the same port as the Enterprise interface, its corresponding field is not displayed in this section.</p>	<p>Enter the virtual IP address that will be used for traffic between the cluster and the interfaces that you have configured on your primary node. This is required for both three-node clusters and single-node clusters that will be converted into a three-node cluster in the future. If you have a single-node cluster setup and don't plan to move to a three-node cluster setup, you can leave the fields in this section blank.</p> <p><b>Important</b> If you choose to configure a virtual IP address, you must enter one for each configured network interface. You will not be able to complete the wizard unless you do so. These addresses are tied to the cluster link's status, which must be in the <b>UP</b> state.</p>
<p>Fully Qualified Domain Name (FQDN) field</p>	<p>Enter the fully qualified domain name (FQDN) for your cluster. Catalyst Center does the following with this hostname:</p> <ul style="list-style-type: none"> <li>• It uses this hostname to access your cluster's web interface and the Representational State Transfer (REST) APIs used by devices in the enterprise network that Catalyst Center manages.</li> <li>• In the Subject Alternative Name (SAN) field of Catalyst Center certificates, it uses the FQDN to the define the Plug and Play server that should be used for device provisioning.</li> </ul>

<b>CLI Credentials</b>	
Enter and confirm the password for the <code>maglev</code> user.	
<b>Cisco Catalyst Center Admin Credentials</b>	
Enter a password for the default admin superuser, used to log in to Catalyst Center for the first time.	
<b>NTP Server Settings</b>	
NTP Server field	<p>Enter at least one NTP server address or hostname. To enter additional NTP server addresses or hostnames, click the <b>Add (+)</b> icon.</p> <p>For a production deployment, Cisco recommends that you configure a minimum of three NTP servers.</p>
Turn On NTP Authentication check box	<p>To enable the authentication of your NTP server before it's synchronized with Catalyst Center, check this check box and then enter the following information:</p> <ul style="list-style-type: none"> <li>The NTP server's key ID. Valid values range between 1 and 4294967295 (<math>2^{32}-1</math>). This value corresponds to the key ID that's defined in the NTP server's key file.</li> <li>The SHA-1 key value associated with the NTP server's key ID. This 40-character hex string resides in the NTP server's key file.</li> </ul> <p><b>Note</b> Ensure that you enter a key ID and key value for each NTP server that you configured in the previous field.</p>
<b>Subnet Settings</b>	
Container Subnet field	A dedicated, non-routed IP subnet that Catalyst Center uses to manage internal services. By default, this is already set to <b>169.254.32.0/20</b> , and we recommend that you use this subnet.
Cluster Subnet field	A dedicated, non-routed IP subnet that Catalyst Center uses to manage internal cluster services. By default, this is already set to <b>169.254.48.0/20</b> , and we recommend that you use this subnet.

The wizard validates the information you have entered and notifies you of any settings that need to be changed before you can proceed with the wizard. If the settings you have entered are valid, the wizard's **Summary** screen opens.

Cisco Catalyst Center Advanced Install

### Summary

Please review the settings that you have entered. If you need to make any changes, click the appropriate Edit link and make the necessary updates. [Download the generated configuration in JSON format here](#), this will be important for future reference. When you are happy with your settings, click Start Configuration.

Ports Configuration Completed

Interface Name	enterprise
LACP Mode	Disabled
IP Address	22.22.22.192
Subnet Mask	24
Default Gateway	22.22.22.1
DNS Servers	223.33.212.22
Static Routes	2

Interface Name	internet
IP Address	212.34.21.2
Subnet Mask	255.255.255.0

Interface Name	cluster
LACP Mode	Disabled
IP Address	169.254.6.66
Subnet Mask	255.255.255.128
Static Routes	2

Exit Start Configuration

**Note** To download the appliance configuration as a JSON file, click the [here](#) link.

- k) Review all of the settings that you have entered while completing the wizard. If necessary, click the appropriate **Edit** link to open the wizard screen in which you want to make updates.
- l) To complete the configuration of your Catalyst Center appliance, click **Start Configuration**.

The wizard screen continuously updates during the process, indicating the tasks that are currently being completed and their progress, as well as any errors that have occurred. To save a local copy of this information as a text file, click the download icon.

Cisco Catalyst Center Advanced Install

### Appliance Configuration In Progress

It should take about 30 minutes to configure the appliance. Do not press your browser's back button or refresh this page. The page will update after configuration completes.

Initializing the cluster using kubeadm 50%

Started: 04/09/2020 12:15:36

```

Apr 13 17:40:20 2020 GMT
2024-03-22T16:04:38.088Z13 | front-proxy-client.crt Apr 13 17:40:20 2020
GMT Apr 13 17:40:20 2021 GMT
2024-03-22T16:04:38.088Z14 | kubelet.conf Apr 13 12:12:14 2020 GMT Apr
13 17:40:21 2021 GMT
2024-03-22T16:04:38.088Z15 | admin.conf Apr 13 12:12:14 2020 GMT Apr
13 17:40:21 2021 GMT
2024-03-22T16:04:38.088Z16 | scheduler.conf Apr 13 12:12:14 2020 GMT
Apr 13 17:40:22 2021 GMT
2024-03-22T16:04:38.088Z17 | controller-manager.conf Apr 13 12:12:14
2020 GMT Apr 13 17:40:22 2021 GMT
2024-03-22T16:04:38.088Z18 | -----
-----
    
```

**What to do next**

When this task is complete:

- If you are deploying this appliance in standalone mode only, continue by performing first-time setup: [First-Time Setup Workflow](#).
- If you are deploying this appliance as the primary node in a cluster, configure the second and third installed appliances in the cluster: [Configure a Secondary Node Using the Advanced Install Configuration Wizard, on page 30](#).

## Configure a Secondary Node Using the Advanced Install Configuration Wizard

Perform the following steps to configure the second and third nodes in the cluster using the Advanced Install configuration wizard.

**Important**

- In order to build a three-node cluster, the same version of the **System** package must be installed on your three Catalyst Center appliances. Otherwise, unexpected behavior and possible downtime can occur.
- The following second-generation Catalyst Center appliances support configuration using the Advanced Install configuration wizard:
  - 44-core appliance: Cisco part number DN2-HW-APL
  - 44-core promotional appliance: Cisco part number DN2-HW-APL-U
  - 56-core appliance: Cisco part number DN2-HW-APL-L
  - 56-core promotional appliance: Cisco part number DN2-HW-APL-L-U

The first-generation 44-core Catalyst Center appliance (Cisco part number DN1-HW-APL) *cannot* be configured using this wizard.

- You can only use this wizard to complete the initial configuration of a new Catalyst Center appliance. To reimage an appliance that's been configured previously, you will need to use the Maglev Configuration wizard (see [Configure the Appliance Using the Maglev Wizard](#)).
- Before you configure the appliances in a three-node cluster, ensure that you have logged out of those appliances. Otherwise, the Quick Start workflow (which you complete to discover your network's devices and enable telemetry) will not start after you have configured your cluster's appliances and log in to Catalyst Center for the first time.
- Ensure that all of the IP addresses you enter while completing this procedure are valid IPv4 addresses with valid IPv4 netmasks. Also make sure that the addresses and their corresponding subnets do not overlap. Service communication issues can result if they do.

When joining each new secondary nodes to the cluster, you must specify the first appliance in the cluster as the primary node. Note the following when joining secondary nodes to a cluster:

- Before adding a new node to the cluster, be sure that all installed packages are deployed on the primary node. You can check this by using Secure Shell to log in to the primary node's Catalyst Center Management port as the Linux user (*maglev*) and then running the command `maglev package status`. All installed packages should appear in the command output as `DEPLOYED`.

```
maglev-1 [main - https://kong-frontend.maglev-system.svc.cluster.local:443]
NAME                               DISPLAY_NAME                       DEPLOYED   AVAILABLE   STATUS   PROGRESS
-----
access-control-application         Access Control Application          -          2.1.369.60050   NOT_DEPLOYED
ai-network-analytics              AI Network Analytics               -          2.6.10.494     NOT_DEPLOYED
app-hosting                       Application Hosting                 -          1.6.6.2201241723  NOT_DEPLOYED
application-policy                Application Policy                   -          2.1.369.170033   NOT_DEPLOYED
application-registry              Application Registry                 -          2.1.369.170033   NOT_DEPLOYED
application-visibility-service     Application Visibility Service      -          2.1.369.170033   NOT_DEPLOYED
assurance                         Assurance - Base                    2.2.2.485   -             DEPLOYED
automation-core                  NCP - Services                     2.1.368.60015  2.1.369.60050   DEPLOYED
base-provision-core              Automation - Base                   2.1.368.60015  2.1.369.60050   DEPLOYED
cloud-connectivity-contextual-content  Cloud Connectivity - Contextual Content 1.3.1.364   -             DEPLOYED
cloud-connectivity-data-hub        Cloud Connectivity - Data Hub       1.6.0.380   -             DEPLOYED
cloud-connectivity-tethering       Cloud Connectivity - Tethering      2.12.1.2   -             DEPLOYED
cloud-provision-core              Cloud Device Provisioning Application - 2.1.368.60015  2.1.369.60050   NOT_DEPLOYED
command-runner                   Command Runner                      2.1.368.60015  2.1.369.60050   DEPLOYED
device-onboarding                Device Onboarding                   2.1.368.60015  2.1.369.60050   DEPLOYED
disaster-recovery                Disaster Recovery                    -          2.1.367.360196   NOT_DEPLOYED
dna-core-apps                    Network Experience Platform - Core  2.1.368.60015  2.1.369.60050   DEPLOYED
dnac-platform                    Cisco DNA Center Platform           1.5.1.180   1.5.1.182     DEPLOYED
dnac-search                       Cisco DNA Center Global Search      1.5.0.466   -             DEPLOYED
endpoint-analytics               AI Endpoint Analytics               -          1.4.375       NOT_DEPLOYED
group-based-policy-analytics      Group-Based Policy Analytics        -          2.2.1.401     NOT_DEPLOYED
icap-automation                  Automation - Intelligent Capture    -          2.1.369.60050   NOT_DEPLOYED
image-management                 Image Management                    2.1.368.60015  2.1.369.60050   DEPLOYED
machine-reasoning                Machine Reasoning                   2.1.368.210017  2.1.369.210024  DEPLOYED
ncp-system                       NCP - Base                          2.1.368.60015  2.1.369.60050   DEPLOYED
ndp-base-analytics               Network Data Platform - Base Analytics 1.6.1.028   1.6.1.031     DEPLOYED
ndp-platform                     Network Data Platform - Core        1.6.596     -             DEPLOYED
ndp-ui                           Network Data Platform - Manager     1.6.543     -             DEPLOYED
network-visibility               Network Controller Platform         2.1.368.60015  2.1.369.60050   DEPLOYED
path-trace                       Path Trace                          2.1.368.60015  2.1.369.60050   DEPLOYED
platform-ui                      Cisco DNA Center UI                 1.6.2.446   1.6.2.448     DEPLOYED
rbac-extensions                  RBAC Extensions                    2.1.368.1910001  2.1.369.1910003  DEPLOYED
rogue-management                 Rogue and aWIPS                     -          2.2.0.51      NOT_DEPLOYED
sd-access                        SD Access                           -          2.1.369.60050   NOT_DEPLOYED
sensor-assurance                 Assurance - Sensor                   -          2.2.2.484     NOT_DEPLOYED
sensor-automation                Automation - Sensor                  -          2.1.369.60050   NOT_DEPLOYED
ssa                              Stealthwatch Security Analytics      2.1.368.1091226  2.1.369.1091317  DEPLOYED
system                           System                               1.6.594     -             DEPLOYED
system-commons                   System Commons                       2.1.368.60015  2.1.369.60050   DEPLOYED
umbrella                         Cisco Umbrella                       -          2.1.368.592066  NOT_DEPLOYED
wide-area-bonjour                 Wide Area Bonjour                    -          2.4.368.75006  NOT_DEPLOYED

[Wed Nov 30 15:45:08 UTC] maglev@192.0.2.1 (maglev-master-192.0.2.1) ~
```

- Be sure to join only a single node to the cluster at a time. Do not attempt to add multiple nodes at the same time, as doing so will result in unpredictable behavior.
- Expect some service downtime during the cluster attachment process for each secondary node. Services will need to be redistributed across the nodes and the cluster will be down for periods of time during that process.

### Before you begin

Ensure that you:

- Installed the Catalyst Center software image onto your appliance, as described in [Reimage the Appliance](#).



### Important

This is only applicable if you are going to configure a promotional appliance because the Catalyst Center software image is not preinstalled on the following appliances:

- 44-core promotional appliance (Cisco part number DN2-HW-APL-U)
  - 56-core promotional appliance: (Cisco part number DN2-HW-APL-L-U)
- 
- Configured the first appliance in the cluster, following the steps in [Configure the Primary Node Using the Advanced Install Configuration Wizard](#), on page 14.
  - Collected all of the information called for in [Required IP Addresses and Subnets](#) and [Required Configuration Information](#).

- Installed the second and third appliances, as described in [Appliance Installation Workflow](#).
- Have done the following:
  1. Ran the **maglev package status** command on the first appliance.
 

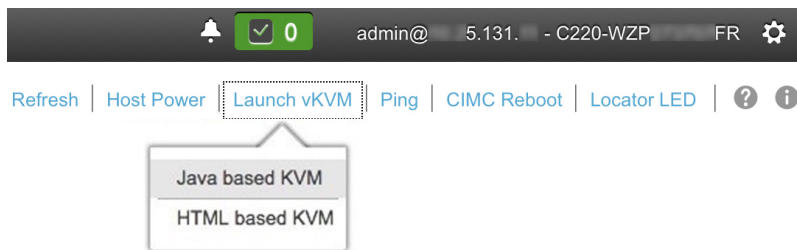
You can also access this information from the Catalyst Center GUI by clicking the **Help** icon (🔗) and choosing **About > Packages**.
  2. Contacted the Cisco TAC, gave them the output of this command, and asked them to point you to the ISO that you should install on your second and third appliances.
- Configured Cisco IMC browser access on both secondary nodes, as described in [Enable Browser Access to Cisco IMC](#).
- Checked that both secondary nodes' ports and the switches they use are properly configured, as described in [Execute Preconfiguration Checks](#).
- Are using a compatible browser. For a list of compatible browsers, see the [Release Notes](#) for the version of Catalyst Center you are installing.
- Enabled ICMP on the firewall between Catalyst Center and both the default gateway and the DNS server you specify in the following procedure. The wizard uses ping to verify the gateway and DNS server you specify. This ping might get blocked if a firewall is in place and ICMP is not enabled on that firewall. When this happens, you will not be able to complete the wizard.

**Step 1**

Start the Advanced Install configuration wizard:

- a) Point your browser to the Cisco IMC IP address you set during the Cisco IMC GUI configuration you performed, then log in to the Cisco IMC GUI as the Cisco IMC user (see [Enable Browser Access to Cisco Integrated Management Controller](#)).

After successful login, the appliance displays the **Cisco Integrated Management Controller Chassis Summary** window, with a blue link menu at the upper right, as shown below.



- b) From the blue link menu, choose **Launch KVM** and then choose either **Java based KVM** or **HTML based KVM**. If you choose the Java-based KVM, you will need to launch the Java startup file from your browser or file manager in order to view the KVM console in its own window. If you choose the HTML-based KVM, it will launch the KVM console in a separate browser window or tab automatically.

Irrespective of the KVM type you choose, use the KVM console to monitor the progress of the configuration and respond to Maglev Configuration Wizard prompts.

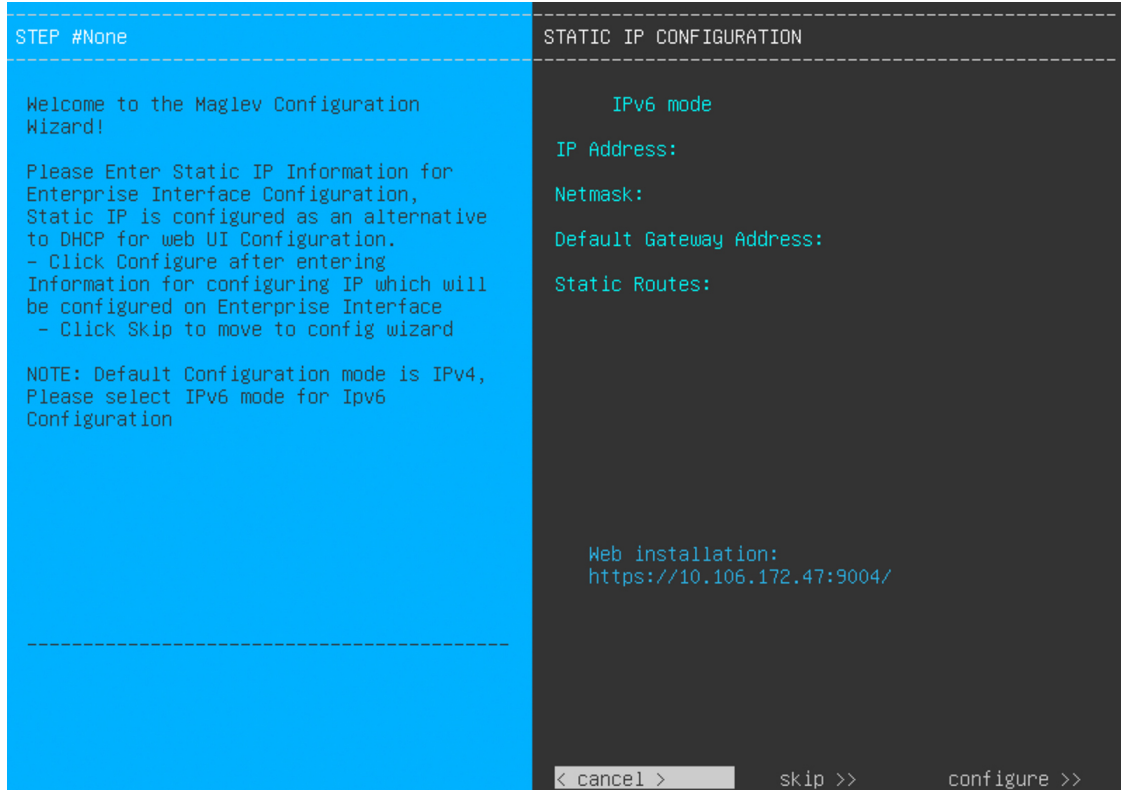
- c) With the KVM displayed, reboot the appliance by making one of the following selections:
  - In the main Cisco IMC GUI browser window: Choose **Host Power > Power Cycle**. Then switch to the KVM console to continue.



- In the KVM console: Choose **Power > Power Cycle System (cold boot)**.

If asked to confirm your choice to reboot the appliance, click **OK**.

After displaying reboot messages, the KVM console displays the **Static IP Configuration** screen.



Note the URL listed in the **Web Installation** field.

d) Do one of the following:

- If you want a DHCP server to assign an IP address, subnet mask, and default gateway to your appliance's Enterprise interface, click **Skip**.
- If you want to assign your own IP address, subnet mask, and default gateway to your appliance's Enterprise interface, enter the information described in the following table and then click **Configure**.

IPv6 Mode check box	If you want to configure an IPv6 address, check this check box.
IP Address field	Enter the static IP address you want to use.
Netmask field	Enter the netmask for the IP address you specified in the previous field: <ul style="list-style-type: none"> <li>• If you entered an IPv4 address, you can enter either a netmask or CIDR address.</li> <li>• If you entered an IPv6 address, you can only enter a CIDR address.</li> </ul>
Default Gateway Address field	Specify the default gateway that will be used to route traffic.

Static Routes field	Enter one or more static routes in the following format, separated by spaces: <code>&lt;network&gt;/&lt;netmask&gt;/&lt;gateway&gt;</code> . This is usually required on the Management port only.
---------------------	--

The KVM console displays the Maglev Configuration wizard welcome screen.

```

Welcome to the Maglev Configuration Wizard!

The wizard will walk you through the steps to configure this host. Select one of the options below to specify how you
would like to configure this host:

Start a Cisco DNA Center Cluster
Join a Cisco DNA Center Cluster

< exit >

```

- e) To bring up the **Appliance Configuration** screen, open the URL that was displayed in the **Static IP Configuration** screen.

- f) Click the **Join a Cisco Catalyst Center Cluster** radio button, then click **Next**.

Cisco Catalyst Center Appliance Configuration


Welcome to Cisco Catalyst Center

Before you can use Cisco Catalyst Center, first complete the appropriate appliance configuration workflow. Which workflow matches your needs?

**Advanced Install**

Configure a standalone node or any node in a cluster.

Use this wizard to access all of the available appliance configuration options.




Back Start

- g) Click the **Advanced Install** radio button, then click **Start**.

The **Overview** slider opens. Click > to view a summary of the tasks that the wizard will help you complete.

Overview

Complete the basic tasks required to configure your appliance for use with Cisco Catalyst Center.



Start Workflow

- h) Click **Start Workflow** to start the wizard.

The **Appliance Interface Overview** screen opens, providing a description of the four appliance interfaces that you can configure.

Cisco Catalyst Center
Advanced Install

## Appliance Interface Overview

In order for Cisco Catalyst Center to operate properly, you need to configure four interfaces on your appliance:

1. **Enterprise Network Interface:** Connects your appliance to the Enterprise network.
2. **Intracluster Link Interface:** Connects your appliance to your cluster.
3. **Management Network Interface:** (Optional) Accesses the Cisco Catalyst Center GUI from your Management network.
4. **Internet Access Interface:** (Optional) Accesses the internet.

In this workflow, the Intracluster Link Interface is predefined. The other 3 interfaces will be configured together on the Enterprise port.

Exit
Next

**Important** At a minimum, you must configure the interfaces on your appliance's Enterprise and Cluster ports, as they are required for Catalyst Center functionality. If the wizard fails to display either or both of these ports during the course of configuration, they may be non-functional or disabled. If you discover that they are non-functional, choose **Exit** to exit the wizard immediately. Be sure you have completed all of the steps provided in [Execute Preconfiguration Checks](#) before resuming configuration or contacting the Cisco Technical Assistance Center (TAC).

**Step 2** Complete the Advanced Install configuration wizard:

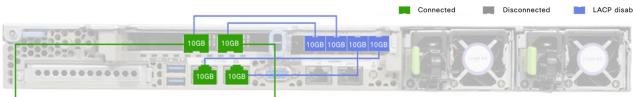
a) Click **Next**.

The **How would you like to set up your appliance interfaces?** screen opens.

Cisco Catalyst Center
Advanced Install

### How would you like to set up your appliance interfaces?

Both Enterprise Network and Intracluster Link Interfaces have their own designated port. You can decide whether to have a separate dedicated port for either Management Network Interface and Internet Access Interface. Before you start, reserve the IP addresses necessary for configuration. If your network resides behind a firewall, be sure to [allow access to these URLs](#) and [open these ports](#).



Enterprise Network Interface

Intracluster Link Network

The Enterprise Network Interface and Intracluster Link Interface will be configured using the two 10-Gbps ports as shown above.

Would you like to have a dedicated Management Network Interface?

Yes  No

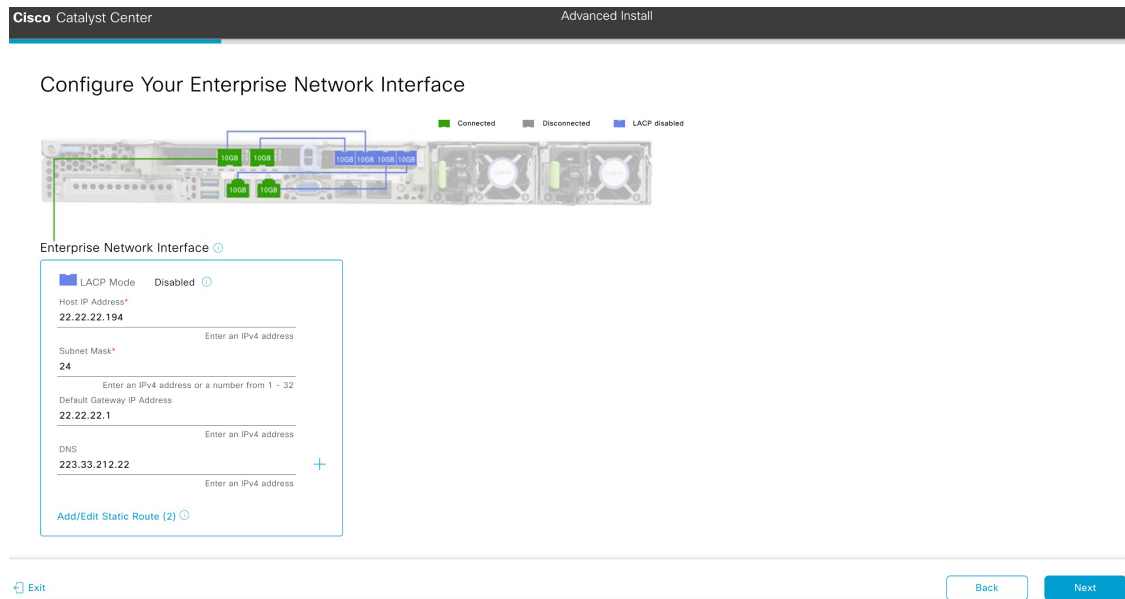
Would you like to have a dedicated Internet Access Interface?

Yes  No

Exit
Back
Next

b) Indicate whether you want to configure dedicated Management and Internet Access interfaces, then click **Next**.

The **Configure Your Enterprise Network Interface** screen opens.



c) Enter configuration values for the Enterprise interface, then click **Next**.

As explained in [Interface Cable Connections](#), this is a required interface used to link the appliance to the enterprise network. See [Required IP Addresses and Subnets](#) and [Required Configuration Information](#) for a more detailed description of the values you need to enter.

**Table 9: Secondary Node Entries for the Enterprise Interface**

LACP Mode slider	<p>Choose one of the following network interface controller (NIC) bonding modes for the Enterprise interface:</p> <ul style="list-style-type: none"> <li>• <b>Active-Backup mode:</b> This mode provides fault tolerance by aggregating two Ethernet interfaces into a single logical channel. When the interface that's currently active goes down, the other interface takes its place and becomes active.</li> <li>• <b>LACP mode:</b> This mode aggregates two Ethernet interfaces that share the same speed and duplex settings into a single logical channel. This provides load balancing and higher bandwidth.</li> </ul> <p>For more information about Catalyst Center's implementation of NIC bonding, see <a href="#">NIC Bonding Overview</a>.</p>
Host IP Address field	Enter the IP address for the Enterprise port. This is required.
Subnet Mask field	Enter the netmask for the port's IP address. This is required.

Default Gateway IP Address field	<p>Enter a default gateway IP address to use for the port.</p> <p><b>Important</b> Ensure that you enter a default gateway IP address for at least one of your appliance's interfaces. Otherwise, you will not be able to complete the configuration wizard.</p> <p><b>Note</b> You designated this interface to use the default gateway assigned to it by a DHCP server. Complete the following steps to specify a different gateway:</p> <ol style="list-style-type: none"> <li>1. Delete the IP address that is currently listed in this field and then click <b>Exit</b>. This will bring you back to the first wizard screen.</li> <li>2. Return to the Enterprise port's wizard screen and enter the gateway IP address you want to use.</li> </ol>
DNS field	<p>Enter the IP address of the preferred DNS server.</p> <p>To enter additional DNS servers, click the <b>Add (+)</b> icon.</p> <p><b>Important</b></p> <ul style="list-style-type: none"> <li>• For each node in your cluster, configure a maximum of three DNS servers. Problems can occur if you configure more than three DNS servers for an appliance.</li> <li>• For NTP, ensure port 123 (UDP) is open between Catalyst Center and your NTP server.</li> </ul>

The wizard validates the information you have entered, confirms that the port is up, and notifies you of any settings that need to be changed before you can proceed with the wizard. If the settings you have entered are valid and the port is up, the wizard's **Configure Your Intracluster Interface** screen opens.

Cisco Catalyst Center Advanced Install

### Configure Your Intracluster Interface

Enterprise Network Interface

- Interface Name: enterprise
- LACP Mode: Disabled
- IP Address: 22.22.22.194
- Subnet Mask: 24
- Default Gateway: 22.22.22.1
- DNS Servers: 223.33.212.22
- Static Routes: 2

Intracluster Link Network

- LACP Mode: Disabled
- Host IP Address: 169.254.6.68
- Subnet Mask: 255.255.255.128

Exit Back Next

d) Enter configuration values for your Intracluster interface, then click **Next**.

As explained in [Interface Cable Connections](#), this required port is used to link the appliance to your cluster. See [Required IP Addresses and Subnets](#) and [Required Configuration Information](#) for a more detailed description of the values you need to enter.

- Note**
- If you opted to configure the Enterprise and Internet Access interfaces on the same port, complete this step and then proceed to Step 2e (which describes how to configure your Management interface).
  - If you opted to configure the Enterprise and Management interfaces on the same port, complete this step and then skip ahead to Step 2f (which describes how to configure your Internet Access interface).
  - If you opted to configure the Enterprise, Management, and Internet Access interfaces on the same port, complete this step and then skip ahead to Step 2g.

**Table 10: Secondary Node Entries for the Intracluster Interface**

LACP Mode slider	<p>Choose one of the following NIC bonding modes for the Intracluster interface:</p> <ul style="list-style-type: none"> <li>• <b>Active-Backup mode:</b> This mode provides fault tolerance by aggregating two Ethernet interfaces into a single logical channel. When the interface that's currently active goes down, the other interface takes its place and becomes active.</li> <li>• <b>LACP mode:</b> This mode aggregates two Ethernet interfaces that share the same speed and duplex settings into a single logical channel. This provides load balancing and higher bandwidth.</li> </ul> <p>For more information about Catalyst Center's implementation of NIC bonding, see <a href="#">NIC Bonding Overview</a>.</p>
Host IP Address field	Enter the IP address for the Cluster port. This is required. Note that you cannot change the address of the Cluster port later.
Subnet Mask field	Enter the netmask for the port's IP address. This is required.

The wizard validates the information you have entered, confirms that the port is up, and notifies you of any settings that need to be changed before you can proceed with the wizard. If the settings you have entered are valid and the port is up, the wizard's **Configure Your Management Network Interface** screen opens.

Cisco Catalyst Center Advanced Install

### Configure Your Management Network Interface

Enterprise Network Interface

- Interface Name: enterprise
- LACP Mode: Disabled
- IP Address: 22.22.22.194
- Subnet Mask: 24
- Default Gateway: 22.22.22.1
- DNS Servers: 223.33.212.22
- Static Routes: 2

Management Network Interface

- Host IP Address\*: 123.223.223.5
- Subnet Mask\*: 255.255.255.0
- Default Gateway IP Address: 22.22.22.1
- DNS:

Intracluster Link Network

- Interface Name: cluster
- LACP Mode: Disabled
- IP Address: 169.254.6.68
- Subnet Mask: 255.255.255.128
- Static Routes: 2

Exit Back Next

- e) (Optional) Enter configuration values for the Management port, then click **Next**.

As explained in [Interface Cable Connections](#), this port is used to access the Catalyst Center GUI from your management network. If you chose to configure a dedicated Management interface, enter the information described in the following table. (See [Required IP Addresses and Subnets](#) and [Required Configuration Information](#) for a more detailed description of the values you need to enter.)

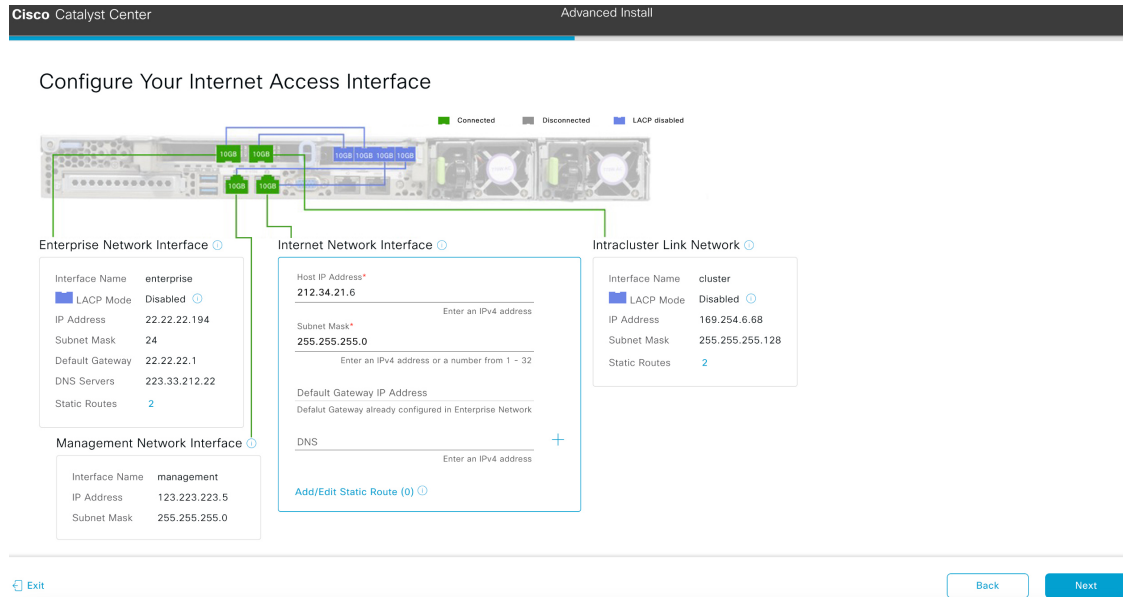
**Note** If you opted to configure the Enterprise and Internet Access interfaces on the same port, complete this step and then skip ahead to Step 2g.

**Table 11: Secondary Node Entries for the Management Port**

Host IP Address field	Enter the IP address for the Management port. This is required.
Subnet Mask field	Enter the netmask for the port's IP address. This is required.
Default Gateway IP Address field	Enter a default gateway IP address to use for the port. <b>Important</b> Ensure that you enter a default gateway IP address for at least one of your appliance's interfaces. Otherwise, you will not be able to complete the configuration wizard.
DNS field	Enter the IP address of the preferred DNS server. To enter additional DNS servers, click the <b>Add (+)</b> icon. <b>Important</b> <ul style="list-style-type: none"> <li>For each node in your cluster, configure a maximum of three DNS servers. Problems can occur if you configure more than three DNS servers for an appliance.</li> <li>For NTP, ensure port 123 (UDP) is open between Catalyst Center and your NTP server.</li> </ul>



The wizard validates the information you have entered, confirms that the port is up, and notifies you of any settings that need to be changed before you can proceed with the wizard. If the settings you have entered are valid and the port is up, the wizard's **Configure Your Internet Access Interface** screen opens.



f) (Optional) Enter configuration values for the Internet Access interface, then click **Next**.

As explained in [Interface Cable Connections](#), this is an optional port used to link the appliance to the Internet when you cannot do so through the Enterprise port. If you chose to configure a dedicated Internet Access interface, enter the information described in the following table. (See [Required IP Addresses and Subnets](#) and [Required Configuration Information](#) for a more detailed description of the values you need to enter.)

**Table 12: Secondary Node Entries for the Internet Access Port**

Host IP Address field	Enter the IP address for the Internet Access port.
Subnet Mask field	Enter the netmask for the port's IP address. This is required if you enter an IP address.
Default Gateway IP Address field	Enter a default gateway IP address to use for the port.  <b>Important</b> Ensure that you enter a default gateway IP address for at least one of your appliance's interfaces. Otherwise, you will not be able to complete the configuration wizard.
DNS field	Enter the IP address of the preferred DNS server. To enter additional DNS servers, click the <b>Add (+)</b> icon.  <b>Important</b> <ul style="list-style-type: none"> <li>For each node in your cluster, configure a maximum of three DNS servers. Problems can occur if you configure more than three DNS servers for an appliance.</li> <li>For NTP, ensure port 123 (UDP) is open between Catalyst Center and your NTP server.</li> </ul>

The wizard validates the information you have entered, confirms that the port is up, and notifies you of any settings that need to be changed before you can proceed with the wizard. If the settings you have entered are valid and the port is up, the wizard's **Interface to Port Configuration** screen opens.

**Interface to Port Configuration**

We are going to configure the following interfaces. Clicking Next will begin the configuration process. This may take up to a minute to configure.

Legend: ■ Connected ■ Disconnected ■ LACP enabled

Interface Name	LACP Mode	IP Address	Subnet Mask	Default Gateway	DNS Servers	Static Routes
enterprise	Disabled	22.22.22.194	24	22.22.22.1	223.33.212.22	2
internet		212.34.21.6	255.255.255.0			
cluster	Disabled	169.254.6.68	255.255.255.128			2
management		123.223.223.5	255.255.255.0			

Buttons: [Exit](#) [Back](#) [Next](#)

- g) Review the settings that you have entered for the secondary node's interfaces. If you need to make any changes, click the **Edit** link for the relevant interface.
- h) When you are happy with the interface settings, click **Next**.

After initial interface configuration has completed, the **Configure Proxy Server Information** screen opens.

**Configure Proxy Server Information**

Does your network use a proxy server to access the internet?

Yes  No

Proxy Server\* E.g. http://example.com

Port\* Enter port number between 1 to 65535.

Username

Password

Buttons: [Exit](#) [Review](#) [Back](#) [Next](#)

- i) Do one of the following and then click **Next**:
- If your network does *not* use a proxy server to access the internet, click the **No** radio button.

- If your network does use a proxy server to access the internet, enter the values described in the following table:

**Table 13: Secondary Node Entries for Proxy Server Settings**

Proxy Server field	Enter the URL or host name of an HTTPS network proxy used to access the Internet.  <b>Note</b> Connection from Catalyst Center to the HTTPS proxy is supported only via HTTP in this release.
Port field	Enter the port your appliance used to access the network proxy.
Username field	Enter the user name used to access the network proxy. If no proxy login is required, leave this field blank.
Password field	Enter the password used to access the network proxy. If no proxy login is required, leave this field blank.

The wizard validates the information you have entered and notifies you of any settings that need to be changed before you can proceed with the wizard. If the settings you have entered are valid, the wizard's **Primary Node Details** screen opens.

Cisco Catalyst Center Advanced Install

### Primary Node Details

This appliance is getting added as a node for the multi-node setup with software version *N/A*. This information will be used when you need to log into the Maglev CLI.

Primary Node IP\*  
IP should be within Intra-Cluster's 169.254.6.66/25

CLI Username  
maglev

CLI Password\*  
Enter CLI Password

Exit Review Back Next

- j) To establish a connection with your cluster's primary node, enter its IP address and password (by default, the username is already set to **maglev**) and then click **Next**.

The **Advanced Appliance Settings** screen opens.

k) Enter configuration values for your cluster, then click **Next**.

**Table 14: Secondary Node Entries for Advanced Appliance Settings**

<b>CLI Credentials</b>	
Enter and confirm the password for the <code>maglev</code> user.	
<b>NTP Server Settings</b>	
NTP Server field	<p>Enter at least one NTP server address or hostname. To enter additional NTP server addresses or hostnames, click the <b>Add (+)</b> icon.</p> <p>For a production deployment, Cisco recommends that you configure a minimum of three NTP servers.</p>
Turn On NTP Authentication check box	<p>To enable the authentication of your NTP server before it's synchronized with Catalyst Center, check this check box and then enter the following information:</p> <ul style="list-style-type: none"> <li>The NTP server's key ID. Valid values range between 1 and 4294967295 (<math>2^{32}-1</math>).</li> </ul> <p>This value corresponds to the key ID that's defined in the NTP server's key file.</p> <ul style="list-style-type: none"> <li>The SHA-1 key value associated with the NTP server's key ID. This 40-character hex string resides in the NTP server's key file.</li> </ul> <p><b>Note</b> Ensure that you enter a key ID and key value for each NTP server that you configured in the previous field.</p>

The wizard validates the information you have entered, confirms that the port is up, and notifies you of any settings that need to be changed before you can proceed with the wizard. If the settings you have entered are valid, the wizard's **Summary** screen opens.

Cisco Catalyst Center Advanced Install

### Summary

Please review the settings that you have entered. If you need to make any changes, click the appropriate Edit link and make the necessary updates. [Download the generated configuration in JSON format here](#), this will be important for future reference. When you are happy with your settings, click Start Configuration.

Ports Configuration Completed

**Enterprise Network Interface**

Interface Name	enterprise
LACP Mode	Disabled
IP Address	22.22.22.194
Subnet Mask	24
Default Gateway	22.22.22.1
DNS Servers	223.33.212.22
Static Routes	2

**Internet Network Interface**

Interface Name	internet
IP Address	212.34.21.6
Subnet Mask	255.255.255.0

**Intracluster Link Network**

Interface Name	cluster
LACP Mode	Disabled
IP Address	169.254.6.68
Subnet Mask	255.255.255.128
Static Routes	2

Exit Start Configuration

**Note** To download the appliance configuration as a JSON file, click the [here](#) link.

- l) Review all of the settings that you have entered while completing the wizard. If necessary, click the appropriate **Edit** link to open the wizard screen in which you want to make updates.
- m) To complete the configuration of your Catalyst Center appliance, click **Start Configuration**.

The wizard screen continuously updates during the process, indicating the tasks that are currently being completed and their progress, as well as any errors that have occurred. To save a local copy of this information as a text file, click the download icon.

Cisco Catalyst Center Advanced Install

### Appliance Configuration In Progress

It should take about 30 minutes to configure the appliance. Do not press your browser's back button or refresh this page. The page will update after configuration completes.

Initializing the cluster using kubeadm 50%

Started: 04/09/2020 12:15:36

```

Apr 13 17:40:20 2020 GMT
2024-03-22T16:04:38.088Z13 | front-proxy-client.crt Apr 13 17:40:20 2020
GMT Apr 13 17:40:20 2021 GMT
2024-03-22T16:04:38.088Z14 | kubelet.conf Apr 13 12:12:14 2020 GMT Apr
13 17:40:21 2021 GMT
2024-03-22T16:04:38.088Z15 | admin.conf Apr 13 12:12:14 2020 GMT Apr
13 17:40:21 2021 GMT
2024-03-22T16:04:38.088Z16 | scheduler.conf Apr 13 12:12:14 2020 GMT
Apr 13 17:40:22 2021 GMT
2024-03-22T16:04:38.088Z17 | controller-manager.conf Apr 13 12:12:14
2020 GMT Apr 13 17:40:22 2021 GMT
2024-03-22T16:04:38.088Z18 | -----
-----
    
```

**What to do next**

When this task is complete:

- If you have an additional appliance to deploy as the third and final node in the cluster, repeat this procedure.
- If you are finished adding nodes to the cluster, continue by performing first-time setup: [First-Time Setup Workflow](#).

## Upgrade to the Latest Catalyst Center Release

For information about upgrading your current release of Catalyst Center, see the [Cisco Catalyst Center Upgrade Guide](#).